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Council of Councils Ninth Annual Conference via Zoom *Reading Materials*

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COUNCIL OF COUNCILS

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Session Two

Great Power Relations and the Future of Global and Regional Order



Background Memo

Great Power Relations and the Future of Global and Regional Order

Council of Councils Annual Conference

November 9–10, 2020

Shao Yuqun, Shanghai Institutes for International Studies

The current tensions between the United States and China have three causes. First, and most important, is the narrowing gap of comprehensive power between the two countries. From 1989 until 2020, China's annual gross domestic product growth averaged 9.27 percent, and China will undoubtedly surpass the United States to be the world's largest economy. According to the International Monetary Fund (IMF), China continues to be the only economy in the world to show positive growth in 2020, and the IMF predicts China's economy will expand by 1.9 percent this year. China's accelerated developments in science and technology, especially in areas such as quantum computing, artificial intelligence, and 5G, have been seen as a second Sputnik by Americans. Simultaneously, China's political influence has also expanded around the world through its Belt and Road Initiative (BRI), as more countries show interest in China's governance style.

Second, the two countries' strategic approaches have led to a growing strategic trust deficit, which is becoming a severe challenge. China's BRI push has been mainly economic and cultural. However, U.S. strategists think the BRI has an agenda with hidden geostrategic ambitions. China's moves in the South China Sea and the Taiwan Strait, which aim to protect its national interests, have also been seen as aggressive actions. On the U.S. side, the shift of its global focus from the Middle East to the Asia-Pacific, the Indo-Pacific strategy, and the Quadrilateral Security Dialogue have further convinced China that the United States is trying to contain China's development.

Third, domestic political change in both countries has influenced their foreign policies, and these changes have not been covered by any substantial bilateral dialogues.

Improving Relations

The most critical thing is for the United States and China to find an effective way to talk to each other. Most of the one-hundred-plus dialogue mechanisms between the two major powers have been suspended for quite some time. They should be restarted. Regarding the list of dialogue topics, crisis prevention and management should be one of the top priorities. Other topics should include each country's red lines for hot security issues in the Asia-Pacific region, such as the Taiwan question and the South China Sea; cooperation in any area that will help reduce tensions; and arrangements for post-pandemic, people-to-people exchanges, especially plans to help Chinese students return to the United States to continue their studies.

Other actors can help diminish tensions, especially the middle powers. The two most important areas are global public health cooperation and rule-making in cyberspace. These two areas are not directly related to

geopolitical frictions, but have huge implications for them. Right now the world needs to end the pandemic as soon as possible. Given the deep distrust between the United States and China, any practical middle power proposal to promote global public health cooperation will have significant importance. Middle powers can also play a large role in establishing much-needed new global rules in cyberspace, which is an important new economic and military domain.

Bolstering Goodwill

Though each country's perception of the other has deteriorated during the pandemic, some friendly attitudes still exist. In the United States, few people think China is an enemy, and, in China, many people still regard the United States as the world leader and a place they would like to do business, study, and visit. Therefore, both should start to prepare for additional post-pandemic, people-to-people exchanges. Visa policies on both sides are important.

U.S.-China economic and trade linkages have always been beneficial for bilateral relations, though for the past four years, the Donald J. Trump administration's trade war has been a major factor in the growing uncertainty in relations. China has entered a new stage of economic development and its policy of opening will continue. China is and will continue to be a huge market for U.S. investors and companies, and China will be a big investor in the United States. China should speed up its domestic reforms and get ready to promote a new round of opening. Both sides should not overemphasize the harm of national security issues and should let business return to normal.

Adapting Regional Security Institutions

The question of adapting regional security institutions has already been discussed and debated for many years. However, this discussion and debate is more meaningful in the current context. First, regional security institutions should keep an open and inclusive mind to support effective security dialogues. The mid-sized members in these institutions should take the lead in raising their own approaches to dealing with security challenges. Second, both the United States and China should restrain themselves from letting their tensions dominate the agendas of certain security institutions. Third, exclusive security institutions with China as their clear target should not be a part of the future regional security framework. Cold War alliances were established in an era of competition between two different ideological groups and will not disappear in the near future. But China does not and will not seek ideological competition with the United States. There is no need to build new security institutions based on shared ideology or democratic system. This will only send signals to China that the United States and China are moving into a new cold war.

Project Syndicate

To the Brink with China

Aug 13, 2020 | **RICHARD HAASS**

NEW YORK – Observers of US-China relations increasingly talk of a new cold war. On top of a long-running trade war, the two countries now find themselves in a destructive cycle of mutual sanctions, consulate closings, and increasingly bellicose official speeches. Efforts to decouple the US economy from China's are underway as tensions mount in both the South China Sea and the Taiwan Strait.

A cold war between the United States and China would leave both countries and the world worse off. It would be dangerous and costly – not least because it would preclude needed cooperation on a host of regional and global issues.

The good news is that such an outcome is not inevitable. The bad news is the chances of a second cold war are far higher today than they were just months ago. Even worse, the chances of an actual war, resulting from an incident involving the countries' militaries, are also greater.

Why is this happening? Some say Sino-American confrontation is inevitable, the result of friction between the established and rising powers of the day. But this overlooks the various episodes in history when such power shifts did not result in war. Even more, it underestimates the importance of decisions already made and yet to be made. For better and for worse, little in history is inevitable.

A more serious assessment of how we got here begins with China. In recent years, and increasingly in recent months, the Chinese government has embraced a more assertive path at home and abroad. This is reflected in China's crackdown in Hong Kong in the wake of its enactment of a harsh new national security law; the inhumane treatment of its Muslim Uighur minority; the clashes along its unsettled border with India; the sinking of a Vietnamese vessel in the disputed South China Sea; and regular displays of military strength near both Taiwan and the Senkaku Islands, which both China and Japan claim as their own.

This has triggered deep disillusion with China in the US, compounding underlying tensions stemming from China's consistent theft of American intellectual property, trade practices that many blame for the disappearance of US manufacturing jobs, a concerted military buildup, and mounting repression at home. Hopes that

integration into the global economy would bring about a more open, rules-abiding China have not materialized.

Why is China becoming increasingly assertive now? It could be that President Xi Jinping sees an opportunity to advance Chinese interests while the US is preoccupied with the fallout of COVID-19. Or it could be an outgrowth of China's desire to distract domestic attention from its initial mishandling of the virus and the economic slowdown exacerbated by the pandemic. This would not be the first time a government turned to nationalism to change the political conversation.

A third explanation is the most worrisome. In this interpretation, China's recent behavior is not so much opportunistic or cynical as representative of a new era of Chinese foreign policy, one that reflects the country's growing strength and ambitions. If this is the case, it reinforces the view that a cold war or worse could materialize.

Of course, all this is taking place during a US election campaign, and President Donald Trump's administration is seeking to blame others for its own inept handling of the pandemic. To be sure, China bears more than a little responsibility, as it initially suppressed information about the outbreak, was slow in responding, and failed to cooperate as much as it should have with the World Health Organization and others. But China cannot be blamed for the lack of adequate testing and contact tracing in the US, much less for Trump's failure to accept science and support social-distancing and mask-wearing mandates.

But it would be wrong to attribute changing US views of China primarily to American domestic politics. A tougher China policy will last regardless of who wins the upcoming presidential election. Indeed, US policy toward China could become even more critical under a President Joe Biden, whose administration would be less preoccupied with negotiating narrow trade agreements and more focused on addressing other troublesome aspects of Chinese behavior.

In the short run, both sides should ensure that crisis communications are in good order, so that they can respond quickly to a military incident and keep it limited. More positively, the two governments could find common ground by making any COVID-19 vaccine available to others, helping poorer countries manage the economic fallout of the pandemic, or both.

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After the US election, the two governments should start a quiet strategic dialogue to develop rules of the road for the bilateral relationship. The US will need to abandon unrealistic hopes that it can foster regime change in China and instead focus on shaping China's external behavior. China will have to accept that there are limits to

what the US and its allies will tolerate when it comes to unilateral acts that seek to alter the *status quo* in the South China Sea, Taiwan, or with the Senkaku Islands.

In the long run, the best hope is a US-China relationship of managed competition, which would avoid conflict and allow for limited cooperation when it is in both countries' interest. This may not seem like much, but it is quite ambitious given where things are and where they are heading.

RICHARD HAASS

Richard Haass, President of the Council on Foreign Relations, previously served as Director of Policy Planning for the US State Department (2001-2003), and was President George W. Bush's special envoy to Northern Ireland and Coordinator for the Future of Afghanistan. He is the author of *The World: A Brief Introduction* (Penguin Press, 2020).

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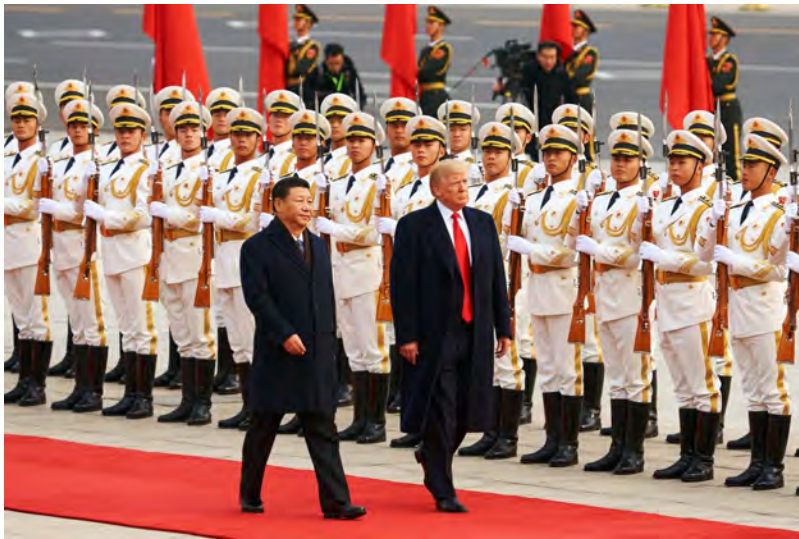
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ESSAY

A Cold War With China Would Be a Mistake

Beijing poses some real challenges, but the most formidable threats the U.S. now faces are transnational problems like the coronavirus



Chinese President Xi Jinping and U.S. President Donald Trump outside the Great Hall of the People, Beijing, Nov. 9, 2017.

PHOTO: IVANOV ARTYOM/TASS/ZUMA PRESS

By Richard Haass

May 7, 2020 10:12 am ET

America's relationship with China was deteriorating long before the eruption of Covid-19, but the pandemic has greatly sharpened tensions between the world's two most powerful countries. A rising chorus of American voices now argues that confronting China should become the organizing principle of U.S. foreign policy, akin to the Cold War against the

Soviet Union. But this would be a major strategic error. It reflects an out-of-date mind-set that sees dealing with other major powers as America's principal challenge. Today and for the century ahead, the most significant threats that we face are less other states than a range of transnational problems.

After all, even if the U.S. successfully countered China, our security and prosperity could still plummet due to future pandemics, climate change, cyberattacks, terrorism and the spread or even the use of nuclear weapons. The conclusion to draw from today's crisis is clear: America needs to focus not just on directly addressing such global challenges but on enhancing our competitiveness and resilience in facing them.

The Covid-19 pandemic, which broke out in the central Chinese city of Wuhan, spread in significant part because Chinese authorities suppressed information on the disease, played down its significance, limited cooperation with outside experts and were slow to stop those who might have been infected from leaving the city. Some are demanding that China be held legally and financially responsible for the costs of the pandemic, while others are calling to expand the U.S. military presence in the Pacific.

We can't blame China for our own lack of protective equipment or our inability to produce adequate testing.

China certainly bears enormous responsibility for the pandemic, but we can't blame Beijing for our own lack of protective equipment, inability to produce adequate testing, uneven insistence on social distancing and limited capacity for contact tracing. Other societies—including Taiwan, South Korea, Singapore and Germany—have all fared far better, which speaks volumes about the U.S. response. We would be wiser to adhere to the dictum "Physician, heal thyself" than to scapegoat China.

We also should not misread the aims of Chinese foreign policy. In 2017, the Trump administration's National Security Strategy described China as a revisionist power wanting "to erode American security and prosperity" and "shape a world antithetical to U.S. values and interests." The Pentagon's National Defense Strategy took that view even further, describing China in 2018 as a "strategic competitor" that seeks "Indo-Pacific regional hegemony in the near-term and displacement of the United States to achieve global preeminence in the future."

These assessments overstate China's ambitions and capabilities alike. China's strategic preoccupation, as its 2019 defense white paper makes clear, is maintaining its territorial integrity and internal stability. Beijing fears that the success of any internal separatist movement would lead to others—and to the country's unraveling, the Chinese Communist Party's loss of power or both.

China can best be understood as a regional power that seeks to reduce U.S. influence in its backyard and to increase its influence with its neighbors. Beijing isn't seeking to overturn the current world order but to increase its influence within it. Unlike the Soviet Union, China isn't looking to impose its model on others around the globe or to control international politics in every corner of the world. And when China does reach farther afield, its instruments tend to be primarily economic.



Elderly people talk at a social welfare center, Wuyishan City, China, Nov. 1, 2018.

PHOTO: ZHANG GUOJUN/XINHUA/ZUMA PRESS

China faces serious limitations in trying to extend its reach and influence. The era of double-digit Chinese economic growth is over. Chinese leader Xi Jinping's consolidation of power leaves him vulnerable to challenge, not just from a slowing economy but also from policy blunders, such as his handling of Covid-19. China must deal as well with serious environmental problems and the looming demographic crisis of an aging and soon-to-shrink population. Arguments sounding the alarm about China's world-dominating future should be taken with a healthy dose of salt.

The threat China poses can be addressed without making it the focal point of U.S. foreign policy.

Of course, China poses both an actual and a potential threat—but it's one that can be addressed without making China the focal point of American foreign policy. Some U.S.-Chinese strategic rivalry is inevitable, and the U.S. should push back against China where necessary to defend American interests. As much as possible, however, this competition should be bounded so that it doesn't preclude cooperation with China in areas of mutual interest.

What would this mean in practice? The U.S. should criticize China over its handling of the Covid-19 outbreak and back calls for international investigations. But Washington should also be at the forefront of working for changes in the World Health Organization so that China (along with every other country) understands both its obligations and the costs it will incur if it fails to meet them.

We must also rethink our approach to trade with China. Bilateral trade still serves U.S. economic and strategic interests, with two exceptions: We should become less dependent on China (or any other single foreign supplier) for materials and products that we deem essential, and we obviously must safeguard our technology and secrets, both governmental and commercial.

Some critics are frustrated that integrating China into the world economy and the World Trade Organization didn't lead to hoped-for political and economic reforms. But such progress was never really in the cards. China's closed political system is unlikely to change fundamentally in the foreseeable future. Still, economic integration was and remains worthwhile: It gives China a stake in Asian stability and another reason not to use military force against its neighbors.

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None of this should stop the U.S. from criticizing China for its violation of its legal commitments to respect Hong Kong's autonomy or its [harsh repression of its Muslim Uighur minority](#). While we cannot and should not try to prevent China's rise—that will be

China's to determine—we should react when its ascent turns coercive and threatens our interests in Asia. Given China's growing military strength and its proximity to U.S. allies and partners in Asia, we should define success in terms of deterring China from using force or intimidating its neighbors.

The U.S. should continue to demonstrate its right to sail through waters that China, contrary to international law, claims as its own. And we must shore up our ties with Japan, South Korea, Vietnam, India, Australia, Taiwan and others, even as we avoid forcing them to choose between us and China. Our overall goal should be to foster a framework that makes clear to China that aggressive unilateral action on its part will fail—and that its interests, more often than not, would be better served by cooperating with us on regional and global challenges.

With the Soviet Union's collapse in 1991, U.S. foreign policy lost its lodestar. Three decades later, American strategy still lacks a consistent direction, but it shouldn't try to find one by reviving the Cold War policy of containment. China is not the Soviet Union, and a world defined by globalization demands new strategic thinking.

—Mr. Haass is the president of the Council on Foreign Relations. His latest book is “The World: A Brief Introduction,” which will be published May 12 by Penguin Press.

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Light at the End of a Bumpy Tunnel?

Jun 18 , 2020

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Wang Jisi

President, Institute of International and Strategic Studies, Peking University



The heat of summer has come, and so has the fever in relations between China and the United States.

Since the novel coronavirus began its rampage in early 2020, China-U.S. ties have been further strained. Washington has introduced a series of China-related policies and congressional bills have aimed to curtail Beijing's authority, power and international influence. U.S. officials and members of Congress are increasingly vocal in their denunciations of China on almost every issue. In particular, the Trump administration attacked Beijing for alleged disinformation on the COVID-19 pandemic, which had a high rate of infections and fatalities in America.

Speakers for China's Foreign Ministry, as well as official media, have fought back by revealing America's deplorable performance in coping with the pandemic. U.S. Secretary of State Mike Pompeo was named by CCTV as a "public enemy of mankind." More recently, China's media spared no effort to report on racial discrimination, police brutality and social injustice behind the riots and

protests around the United States triggered by the killing of a black man, George Floyd, by a police officer.

The deterioration of China-U.S. relations is not confined to rhetorical battles but shows more ominously in actions related to bilateral trade, high technology, cybersecurity, Taiwan, Hong Kong, the South China Sea and other issues. To an alarming extent, economic, financial and technological links between the two countries have been decoupled, although the damage has not yet been felt devastatingly in the two societies. Some Chinese and American commentators warn that the relationship is in free fall. Indeed, once China-U.S. ties get loose and out of control, it will be more difficult for the world's two largest economies to regain momentum in the post COVID-19 era. Recovery of the global economy will be retarded, and arms races and geopolitical conflicts will likely intensify.

People often draw parallels and contrasts between China-U.S. ties today and Soviet-U.S. ties in the Cold War period. In my view, China-U.S. ties today may be worse than the Soviet-U.S. relationship, since the latter was at least “cold.” Relations between Moscow and Washington have remained essentially stable for more than four decades despite a few sporadic “hot” moments like the Cuban missile crisis in 1962. Those two superpowers were separate from each other politically, economically and socially and were actually unable to influence each other's domestic affairs. Contact between Washington and Moscow was rather superficial and involved little love-hate emotion.

By contrast, the China-U.S. relationship is now suffering from forceful disengagement after steady progress in engagement for four decades. The sentimental and material losses caused by the heated quarrels and grudging decoupling between the two sides — in particular during the pandemic period — are sensationally more distressing than the analogy of the Cold War. One remaining question is whether the China-U.S. rivalry will last longer and cost more for both sides than the Soviet-U.S. standoff.

It is urgent for China and the United States to avoid a complete free fall in relations. There must be floors or bottom lines that stay in place to stop the relationship from falling into an abyss.

Around 2014 when Beijing was searching for a “new model of major country relationship” with Washington, Chinese officials repeatedly stated that strategic mutual trust, economic and trade cooperation and humanitarian exchanges are the three pillars underpinning the China-U.S. relationship. To borrow ideas from this statement, I believe there are three bottom lines that should be upheld in today's China-U.S. relations.

Peaceful solution to all disputes

The first bottom line is that no matter how serious the competition between the two countries may be, it must be handled by peaceful means, not resorting to armed conflict. It is unrealistic at this stage to expect China and the U.S. to build genuine strategic mutual trust, but at the very least each side should try to convince the other that it would never take the initiative to provoke a war — including not only nuclear or conventional war but also unconventional war such as cyberwar,

space war or biochemical war. There is no denying that the Chinese and U.S. militaries are preparing for the worst, which they are designed to do; in recent years each has made the other the main imaginary enemy. This trend will continue for a long time to come.

Fortunately, the militaries of China and the U.S. have maintained close contact even in the face of poor political communication. In August 2017, the military command systems of the two countries signed the Joint Staff Dialogue Mechanism. This document is expected to play an important role in crisis management between the two militaries.

To avoid a head-on confrontation over the Taiwan Strait, the U.S. must honor its commitment to the "One-China" policy, which has been sustained since the establishment of diplomatic relations in 1979. Washington should state that it will not support Taiwan independence.

In turn, Beijing should continue to commit itself to a "one country, two systems" approach to achieving peaceful reunification with Taiwan.

The Anti-Secession Law that the People's Republic of China passed in 2005 declares: "In the event that 'Taiwan independence' secessionist forces should act under any name or by any means to cause the fact of Taiwan's secession from China, or that major incidents entailing Taiwan's secession from China should occur, or that possibilities for a peaceful reunification should be completely exhausted, the state shall employ non-peaceful means and other necessary measures to protect China's sovereignty and territorial integrity."

Cross-strait relations today, though not satisfactory and involving some risks, have not necessitated non-peaceful means to solve the Taiwan issue.

On the South China Sea dispute between Beijing and Washington, the two sides should stick to the principle of demilitarization. China and the Association of Southeast Asian Nations (ASEAN) have been engaged in talks for a code of conduct, a document that will lay the foundation for a future solution to their different territorial claims in the South China Sea. The United States should welcome this process.

Both China and the U.S. support denuclearization of the Korean Peninsula and should consult each other to defuse any possible flashpoint there.

A cyberwar between the two countries could be as catastrophic as military conflict; they should, therefore, conduct serious discussions to circumvent such a possibility.

Maintaining economic cooperation

The second bottom line is to maintain a certain scale of economic and trade cooperation and preserve financial stability. Because of the trade war launched by the U.S. against China and other political reasons, bilateral trade volume and two-way investment have declined in the past two years, and the decoupling of cooperation in the field of high-technology has become a reality.

In the foreseeable future, it is unrealistic to expect economic and trade cooperation to become the “ballast and propeller” of bilateral relations, as Beijing expected in earlier years. However, a complete decoupling of bilateral economic relations and technical cooperation would not be in the interest of either party. The key strategic question is: In what areas and to what extent can and must economic and trade cooperation be sustained?

It is notable that the China-U.S. phase-one trade deal reached on Jan. 15 is still being implemented. Because of the impact of COVID-19, it may be difficult to fully implement the agreement in 2020. However, there is no reason to retreat from the principled consensus reached by the two sides.

Take soybeans as an example. Nearly 90 percent of China’s soybeans need to be imported. As long as American soybean farmers are willing to produce and sell soybeans at a reasonable price, why should China not purchase large quantities of U.S. soybeans in accordance with the phase-one agreement? The same may be said of other U.S. agricultural products, such as pork and corn.

A stark fact also worth noting is that without the cooperation of U.S. technology companies like GE, China’s large commercial aircraft, the C-919 and C-929, might not be able to operate in the foreseeable future. If China does not buy Boeing aircraft from the U.S., no other aircraft manufacturer, including Europe’s Airbus, will be able to fill the gap in the Chinese aviation market. China already has about 600 Boeing aircraft, which also need technical maintenance, including spare parts. To this extent, the bottom line of China-U.S. cooperation in civil aviation is likely unbreakable. American businesses may never accept the loss of this incredibly huge commercial resource.

If iPhones could no longer be bought and used in China because of deterioration in China-U.S. relations, it would cross users’ bottom line.

Similarly, Walmart stores, Marriott hotels, KFC, McDonald’s and Starbucks in the Chinese mainland are all U.S. brands operated by Chinese merchants. Maintaining these brands and learning their management approaches and the rules of the market economy are important channels for economic reform in China.

A few U.S. politicians want U.S. companies to divest from China and reduce bilateral trade. China should do just the opposite. In recent years, it has taken many steps to open up its economy and encourage foreign investment. This policy is a blow to such U.S. politicians, not a concession to their pressure.

In the high-tech field, the U.S. government has made every effort to crack down on Huawei Technologies in the name of national security. Huawei has fought back against sanctions by working with U.S. companies and other technology partners overseas. Ren Zhengfei, the founder of Huawei, has responded to American pressure by saying, “Our interests are always along the same line as those of Google.”

Huawei’s more than 30 U.S. suppliers have been negotiating with the U.S. Congress and the Trump administration since last year in an effort to ease the sanctions. Huawei insists on multichannel

communications with U.S. media, enterprises, government agencies and legal departments, and uses the law to handle disputes. As long as Chinese companies stick to the principle of linking up with their U.S. counterparts and strive to take a bigger place in global industrial chains, Huawei and other Chinese companies will surely survive.

In the field of international finance, China's financiers certainly do not want to see the U.S. dollar occupying a hegemonic position in the world forever. However, it is wise and necessary for China to hold a certain amount of long-term U.S. Treasury bonds. China will also respect the status of the U.S. dollar as the world's main reserve currency for many years to come.

Some days ago, it was reported that in order to punish China's behavior in the fight against the COVID-19 pandemic, the U.S. may default by canceling China's purchase of Treasury bonds directly or refusing to pay interest on the bonds. When the news came to light, it immediately stirred up heated debates that threatened the global financial market. Such a violation of international financial rules would cause irreparable financial and credibility losses to the U.S.

Keeping up humanitarian exchanges

The third bottom line is to resolutely safeguard people-to-people and cultural exchanges between China and the U.S. After more than 20 years of retirement, Julia Chang Bloch, the first Asian-American to hold a U.S. ambassadorship, has devoted herself to the cause of China-U.S. educational exchanges. In March 2020, she wrote in the Global Times that "through the ups and downs of China-U.S. relations, both countries have reached a consensus that the bonds forged by thousands of students across the Pacific Ocean should not be jeopardized."

She said 360,000 students from China are currently attending U.S. colleges and universities, with annual spending in the United States of \$15 billion.

It was reported that Washington was considering banning or restricting Chinese citizens from studying in the U.S. on the grounds of national security. In Bloch's view, this would be a short-sighted decision that deviates from the U.S. international education tradition and foreign policy. Humanitarian exchanges are now the last pillar of China-U.S. relations and must not be dismantled.

According to the U.S. census, the Chinese-American population in the U.S. currently exceeds 5 million, of which 2.2 million were born in China. In 2017, 3.2 million Chinese tourists went to the U.S., spending \$35 billion in total that year on travel and tourism-related goods and services. A total of 2.3 million American tourists set foot in China in 2017 alone. Forcibly preventing population movements and cultural exchanges between China and the U.S. through political means not only brings huge economic and cultural losses to the two countries but also violates humanism and personal freedom.

The development of China-U.S. relations is currently facing enormous obstacles and a possible retrograde phase. This difficult situation may last a couple of years or a couple of decades, and people need to be fully prepared for this possible new normal.

But no matter what happens, the huge material foundation, spiritual wealth and human resources accumulated since the establishment of diplomatic ties 41 years ago will not be destroyed in an instant. The deep exchanges and cooperation between China and the U.S. are driven by strong internal forces in both societies that are a major feature of China-U.S. relations. Bilateral relations should not be simply shaped by the U.S.; China must and can do a lot.

We can see that those born in the 1990s and the 2000s who want to study and communicate in each other's countries are among those who place their hopes on cooperation. This group also includes more than 1 million middle-aged Chinese-born entrepreneurs and intellectuals in the U.S. and millions of people in our two countries and around the world who can benefit from bilateral cooperation. Many senior diplomats and social elites in the two countries are working hard to stabilize bilateral ties.

It is only a matter of time and opportunity for China-U.S. relations to return to a normal track, so long as the above three bottom lines are sustainably upheld and an overall breakdown of bilateral ties is prevented. Perseverance and confidence are needed, but a bright light can be seen at the end of the tortuous and bumpy tunnel if you look for it.

[US-China Rivalry](#) | [US-China Ties](#) | [US China Policy](#) | [China's US Policy](#)

Major Power Relations in a Post-Pandemic World Order¹

Yang Jiemian

Abstract: The ongoing Covid-19 pandemic hits the world in a profound and comprehensive way. In addition to its impact on the life and health of the entire humanity, the Covid-19 pandemic also has a marked impact on world's economy, politics, security and societies. This pandemic, while sustains the existent contradictions of the contemporary world, has brought about new adversities that catalyze another round of changes for eventual transformation of world order. Presently the world is on the eve of translating the old order into a new one that characterized by more fairness and equality. At this critical juncture, major powers have special responsibility for upgrading and updating the principles, concepts, and institutions for the would-be new order. However, the United States under the leadership of President Trump tries to reverse this historic trend by advocating and practicing hegemony, unilateralism, and protectionism. The entire international community should brave all the difficulties and strive for earlier realization of world order transition in the benefits of all countries and peoples.

Keywords: Covid-19 pandemic, world order, major power relations, global governance

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Introduction

At the end of 2019 and beginning of 2020, the world was caught by Covid-19 pandemic by surprise and under-prepared. This once-in-a-century pandemic has caused several million of confirmed cases and taken away hundreds of thousands of people's lives. The pandemic disrupted the global production chain, supply chain, demand chain, and value chain, thrusting the world economy into a crisis comparable to the Great Depression in the 1930s, and throwing thousands of millions out of jobs. Damages have spilled out the economy and spread to politics, diplomacy, security, and geopolitical competition. The pandemic could have been an opportunity for the mankind to close its ranks in face of this life-or-death struggle. But some countries closed borders and even intercepted others' medical supplies. Some countries saw upsurges of nationalism, populism, extremism, and Xenophobia. Still some countries used the pandemic to pressure their strategic rivalries. Many global and regional

¹ This article will be published in the forthcoming Fall 2020 issue of the *China Quarterly of International Strategic Studies*.

organizations were having a hard time play their due role in combating the pandemic. For example, the United States obstructed the World Health Organization (WHO) and the United Nations (UN) to carry out their mandates. It suspended funds and started withdrawing from the WHO on the ground that the organization refused to blame China as the origin of the novel coronavirus. It also blocked a Security Council resolution that supports the UN secretary-general's appeal for a global cease-fire, strengthen humanitarian response and ensures the safety of UN peacekeepers.

The Covid-19 pandemic presents an opportunity to examine the existent world order and look into its future. As Covid-19 is making a deepening and widening impact worldwide, discussion has been emerged from the international community on the evolving world order.

According to Dr. Henry Kissinger's definition, world order describes the concept held by a region or civilization about the nature of just arrangements and the distribution of power thought to be applicable to the entire world.² There are other important principles that the Kissingerian definition does not touch upon. For instance, the French stress on multilateral aspect of the world order. The French President Emmanuel Macron pointed out that people cooperate when they are threatened by death and have to come back to these deep existential subjects. Multilateralism always lives its finest hours in the aftermath of great world wars. Now we are living a great global shock, and it's time to rethink multilateralism. The Chinese government prefers "international order" to "world order", though the two terms are more or less interchangeable. In his speech at UN Geneva Headquarter on January 18, 2017 President Xi Jinping included fairness, equitableness, equality and sovereignty, etc. as important components of international order.³

The Chinese and Americans were among the first to look into the world order issue. Mr. Tom Friedman wrote in the *New York Times* of March 17, 2020: "There is the world B.C. — Before Corona — and the world A.C. — After Corona. We have not even begun to fully grasp what the A.C. world will look like."⁴ Dr. Kissinger published a succinct article on the Wall Street Journal of April 3 titled "The Coronavirus Pandemic Will Forever Alter the World Order". He said that while the assault on human health will—hopefully—be temporary, the political and economic upheaval it has unleashed could last for generations.⁵ On April 7, Dr. Richard Haass published an article entitled "The Pandemic Will Accelerate History Rather Than Reshape It", in which he pointed out that the world following the pandemic is unlikely to be radically different from the one that preceded it.⁶ This author wrote on April 12 that the world is on the eve of transforming the existent world order but still needs quite some time for establishing a new world order. This author holds that the

²Henry Kissinger, *World Order* (NY: New York: Penguin Press, 2014), p. 9.

³Xi Jinping, *The Governance of China II* (Foreign Languages Press, 2017), p. 590

⁴Thomas L. Friedman, "Our New Historical Divide: B.C. and A.C. — the World Before Corona and the World After," *New York Times*, March 17, 2020, <https://www.nytimes.com/2020/03/17/opinion/coronavirus-trends.html>.

⁵Henry Kissinger, "The Coronavirus Pandemic Will Forever Alter the World Order," *Wall Street Journal*, April 3, 2020, <https://www.wsj.com/articles/the-coronavirus-pandemic-will-forever-alter-the-world-order-11585953005>.

⁶Richard Haass, "The Pandemic Will Accelerate History Rather Than Reshape It," *Foreign Affairs*, April 7, 2020, <https://anbaonline.com/news/59054/The-Pandemic-Will-Accelerate-History-Rather-Than-Reshape-It/>.

post-pandemic world order will be of both continuities and changes. ⁷On April 29, Chinese scholar Prof. Yan Xuetong pointed out that Dr. Kissinger compares the pandemic to the WWII, but this pandemic does not have the WWII-like power to change the international patterns.⁸

Different analyses and predictions have been produced by scholars with different backgrounds and perspectives. But prudent judgement is needed when our attention is being caught by such events as the “9/11 Attacks” and the Covid-19 pandemic. The establishment of a new world order depends on many conditions. The reconfiguration of powers has undergone many rounds of shock, with the ongoing Covid-19 pandemic being one of them. Those who go along with the trend of peace, development, and win-win cooperation will stand a better chance to success than those who cling to the outdated hegemony and jungle law.

Continuities and Changes

Great as the pandemic's impact on the world order, there are many factors that had been existent and brewing before the outbreak takes place. Without disruption of a total war, the world order has been evolving in a continuous and transformative way. Since the end of the Cold War, the dysfunction, reshuffling and reshaping of world order is a gradual and time-consuming process. Therefore, one must be careful with using such terms as milestone, watershed and epoch-making when describing the impact of the Covid-19 pandemic. Four points are noteworthy on the continuities of the existent world order.

Multi-polarization keeps developing and evolving. The post-WWII world order was characterized by bi-polar structure dominated by the United States and Soviet Union. Then as early as in 1969, President Nixon believed that the world had five power centers: the United States, Soviet Union, West Europe, Japan and China. The world order underwent a brief uni-polar period after the end of Cold War but for most of the time remained multi-polarized. The first decade of the 21st Century saw the (re)emergence of Brazil, Russia, India, China, and South Africa (BRICS). Looking from a long-term perspective, the configuration of powers is moving towards a balance in spite of occasional setbacks.

The gravity of world power continuously shifts from the West to the East (socialist countries in particular, but more broadly refers to the developing countries) despite twists and turns. Some 70 years have passed, the East (or the non-West) has undergone three rises with each one further propelling the West-to-East shift. Between the mid-1940s and 1960s, the East rose politically due to the birth of many socialist countries and independence of former colonies. Between the 1970s and 1990s, the East rose economically. The Newly Industrializing Economics (NIEs) in Asia, China's opening-up and India's reform showed that economic dynamics was shifting from the

⁷Yang Jiemian, “大疫背景下的国际战略格局变动(The Changes of International Strategic Patterns in the Context of the Pandemic),” April 12, 2020, <http://www.siiss.org.cn/newsinfo/102396.html>.

⁸Yu Xiaoqing, “专访阎学通：疫情会永久性改变世界秩序吗？(An Exclusive Interview with Yan Xuetong: Will the Pandemic Change the World Order Forever?)” *The Paper*, April 29, 2020, https://www.thepaper.cn/newsDetail_forward_7194686

West to the East. Since 2008, the non-West has been rising collectively, reflected by the elevated role of G-20 and the reform of the World Bank and IMF. So far, Asia is less affected by the Covid-19 pandemic compared with the U.S. and Europe. So the East will stand a better chance of quicker economic recovery than the West.

Geo-strategy and geo-economy continues to play an important role in world politics and economy. Power co-relation, interest seeking, and geopolitical factors will still be relevant in the post-pandemic world. Traditional security threats including military conflicts and wars are always the main subjects of the world order. Arms race and military competition in various forms would not disappear after the Pandemic. During the Covid-19 pandemic, the Trump administration rejected China's calling for joint response and enhanced cooperation. Instead, it attempts to forge an alliance against China, maintains military presence in the South China Sea, steps up interference in China's Hong Kong affair and support to Taiwan in its confrontation with the Chinese mainland.

International efforts of community building endure albeit obstacles and difficulties. The two world wars in the 20th Century taught the mankind a great lesson. So, many countries and regions started to build communities after the World War II. The European Community was created in the 1950s. The Organization of African Union (OAU) and Association of Southeast Asian Nations (ASEAN) came into being in the 1960s. The Europeans promoted the North-South Dialogue in the 1970s. The developing countries enhanced South-South cooperation in the 1980s. The Asians helped each other in the Asian Financial crisis in the 1990s. The world united against terrorists and financial crisis in the 2000s. The international community basically realized the UN Millennium Goals, opened a new chapter of UN 2030 Agenda, and reached Paris Climate Change Agreement in the 2010s. Now, more and more countries realize that they are fighting together against the common enemy of Covid-19 pandemic.

Nonetheless, the international community needs to understand the width and depth of the changes that this pandemic has brought to the existent world order. The Covid-19 pandemic serves as a powerful catalyst to the transformation of world order and profoundly affects the minds and behaviors of all humanity.

A serious economic crisis is looming large. Technically the world is already in economic recession and will see a crisis greater than the financial crisis in 2008. Most Asian countries united themselves during the Asian Financial Crisis in 1997, so did the world during the Global Financial Crisis in 2008. But this time, two great powers of the United States and China are on the verge of an economic and technological war. According to the World Economic Outlook report released by the IMF in April, the global economy will contract by 3% in 2020, with some 170 countries facing narrowing in their gross domestic product this year under the impact of the pandemic. Martin Wolf, chief economics commentator at the Financial Times, further pointed out that a financial crisis has not come yet, and that it is too early to say how bad the financial consequences will be "because they're going to unfold over the next year or two, or three even."⁹ Indeed it will be pointless to talk about building up a new world

⁹ Yu Jiaxin and Liang Xizhi, "Interview: More global cooperation needed in post-pandemic world order, says

order if the world economy is in disorder.

The Covid-19 pandemic is posing a major threat to life and health of the whole mankind. For the time being, combating the Covid-19 pandemic should outweigh other things such as race, religion, ideology and military alliance. But the reality is that few countries would put aside political, social and economic differences. For many governments, there seems to be more difficulties to improve their people's quality of life and enhance public health capabilities than addressing traditional security issues. Living in an era of globalization and technological revolution, the mankind will have to meet emerging non-traditional security threats or the compounds of traditional and non-traditional ones.

There is a vacuum in world leadership. When dealing with the Covid-19 pandemic, the number of actors rises exponentially in the absence of strong leadership. The U.S. chooses to be a world leader who refuses to shoulder due responsibility. China and the European Union have neither intention nor capability to step in as world leader. Leadership is also lacking among non-state actors such as international organizations. In addition to tangible leaders, there is also an absence of intangible leadership to guide progressive vision and advanced strategic culture.

The world suffers institution deficiency on global, regional and national levels. The UN and WHO have mandates that exceed their capabilities. The Covid-19 pandemic has exacerbated the problems of anti-globalization, ultra-nationalism and unilateralism, thus weakening the existent international organizations and mechanisms. To make things worse, the Covid-19 pandemic slows down the making of new institutions to meet the new challenges. It has become imperative for the international community to upgrade and update the existing institutions, norms and rules, as well as establish new ones to meet the unprecedented challenges through joint efforts.

The discussion on world order has expanded from elites to public. This trend is a double-edged sword. The fight against the Covid-19 pandemic has transcended the domain of public health and involved national security, foreign relations, etc.. In this pandemic, the broad masses throughout the world want to have a say. The bottom-up trend will spread into other fields and become a new normal of the world. Greatly ramifying problems coupled with mass participation makes it increasingly difficult to maintain and establish orders in the world.

Major Power Relations in Transformation

Major powers here refer to leading power, established powers, (re)emerging powers and some middle powers. Major powers always play a very important role in establishing, maintaining, and reforming world orders. The Covid-19 pandemic serves again as catalyst to deepening readjustments of major power relations.

China-US strategic competition has been intensified. Both George W. Bush and Barack Obama had talked about US-China strategic competition in their presidential

campaigns, but neither of them made it a state strategy. Things changed after President Trump came into power. The Trump administration officially named China as a strategic competitor and main rivalry in December 2017, followed by the issue of its Indo-Pacific Strategy, a trade war between U.S. and China, and a tightening grip to contain China. The Covid-19 pandemic could have been an opportunity to strengthen U.S.-China cooperation against a common enemy. But the Trump administration not only wasted the time that China had bought through massive response actions in the early stage of the outbreak, but also used the pandemic to attack China to serve its political purpose of seeking re-election. Since then, conflicts between the two countries have been escalated, sending the bilateral relations spiraling downward..

Russia is striving for an elevated strategic standing. The Covid-19 pandemic has brought an array of difficulties to Russia, not only the virus itself, but also plummeting oil price and external strategic pressure. In this context, Russia has tried to improve its strategic environment. On the one hand, it strengthens strategic partnership with China. The two countries support each other in fighting against the pandemic and jointly refute the accusation of the West headed by the U.S. who tried to shift the blame onto China. They also continue to coordinate their strategic partnership on major international events. On the other hand, Russia tries to improve its relations with the United States and Europe. It sent medical supplies to the United States and expressed its willingness to improve relations with the U.S., though with some strings attached. Russia also steps up its oil pipeline cooperation over North Stream II project and made important phone calls with other leaders. Therefore, the China-U.S.-Russia trilateral relations have been greatly complicated by the Covid-19 pandemic.

The Pandemic has not only diminished the U.S. influence in the world, but also eroded its leadership within its alliance system. The U.S. forces its allies to take on more burden, compromise their rights, and bow to the notion of America First, making the U.S.-led alliance increasingly impotent to coordinate an effective response to global challenges. Its military alliance is basically set up to counter enemies or adversaries so it is irrelevant with cooperation and solidarity-building. On the other hand, the West can still stay together and heighten their strategic alertness on China's rising. The alliance cannot rally enough support to contain China strategically and de-couple with China economically and technologically, although the U.S. still manages to maintain a minimum agreement on dealing with China's rising.

The pandemic also poses a test for the strategic or cooperative partnership among non-Western countries, which is still not ready to become the backbone of the present and future world order. Having strategic and cooperative partners sound great, but concrete actions are often lacking. So far strategic and cooperative partnership among non-Western countries, bilaterally or multilaterally, is not on par with the Western alliance. It is necessary and imperative to reflect upon the reasons behind such unsuccessful partnership before it could help build more constructive major power relations.

Major developing countries should play a bigger role in reforming the existent world order and creating a new world order. Major developing powers represent

strong players of the developing countries and have the capacities to develop general principles and make practical plans. This century saw a start of reconfiguration of powers with incremental weight of major developing powers, who have won increasing international recognition and made G-20 a premier platform to discuss world economy issues. Major developing powers started to play a role in reforming the world order in the economic field, but should not and would not limit their efforts within this field. Besides, the BRICS should make more efforts to reshape the post-pandemic world order. The Covid-19 pandemic is dealing a heavy blow to the world economy and the BRICS countries are not immune. China, India and Brazil are registering a negative economic growth. The price of oil, Russia's economic pillar, saw a cliff fall. South Africa's economic shrink further worsens. The BRICS is slowing down its political, strategic, and diplomatic agenda due to internal and external factors. The BRICS should do its best to get out of the bottom since its first foreign ministers meeting in 2006.

Challenges Ahead

To reform the existent world order and make a proper transition to the new world order is an arduous task. Though an increasing number of countries are aware of the necessity of the reform, the international community as a whole is still not ready to conceptualize the great mission and overcome the difficulties that comes along with it.

A widening gap is lying between the reality and capabilities. Many institutions of the existent world order were established at the end of the WWII and amended during and after the Cold War. The world has undergone tremendous changes in the past 70-some years. The outdated guiding principles and international frameworks are having increasing difficulties to function properly and effectively. The reality is crying for new principles and institutions to meet the new challenges emerging from economy, science and technology, and society. Moreover, the international community is increasingly divided on how to work together on such important issues as the international system, world order and global governance. So it failed to achieve much substantial progress in building up its capability, thus leading to one failure after another.

The international community is still struggling to fill in the vacuum of leadership. In modern and contemporary times, core leadership is indispensable for designing, making, preserving, and adjusting world order. Around the defining year of 1648 between the Middle Ages and Modern Times, the major European powers became the core leaders of the Westphalian world order; in the late 1910s, the United States, Britain and France were the core leaders to define world order after World War I; and since the mid-1940s, the United States and Soviet Union were the core leaders who dominated and preserved the world order after World War II for about half a century. President George W. H. Bush started to talk about a new world order led by the U.S. in the early 1990s and his son President George W. Bush actually ended the U.S. leadership by waging the Afghan War and Iraq War in early 2000s. Since then,

the world has no longer been dominated by one or two superpowers and is still probing for collective leadership. Given the differences and disputes among major powers, the international community should have more strategic patience and work to achieve minimum agreement among the leading countries so as to avoid the emergence of two opposing blocs. History has proved many times that the cost would be higher to bridge division and resolve confrontation than to show strategic patience and make necessary compromise. The new leadership will not really come into being until and unless the true multi-polarity is being realized. As some American professors pointed out: "If nothing else, the pandemic underscores that we live in an irreversibly interdependent world that can be effectively managed only through common effort. Whether the task is fighting disease, preventing war or battling climate change, the coronavirus should serve as an urgent wake-up call for a new era of international teamwork."¹⁰

Any type of world order will have to justify itself in dealing with and solving the major problems at its time. The post-WWI world order was supposed to end wars, but in reality it largely aimed at carving up and defending the winners' interests, such as controlling the League of the Nations, punishing the defeated, and spoiling colonies. Therefore, this world order was short-lived and soon slipped into disorder that led to the WWII. The post-WWII world order was better as it created international institutions like the United Nations and prevented another world war from happening since 1945. But it did not and could not fundamentally realize universal equality and development. The post-pandemic world order should not only promote peace and development, but also find solutions to traditional and non-traditional challenges brought along by globalization and new industrial revolution. The international community still needs to work on singling out the major problems and achieving basic consensus on their solutions.

The discussion centered around the new world order should be solution-oriented with a goal of building a better future. This is particularly relevant for the developing countries as they are facing a historic opportunity to correct the injustice imposed on them by the old world orders and to acquire their due rights and interests in the future. Among all the visions that have been put forward, China stands out by proposing to build a community of shared future for mankind. President Xi holds: "To achieve this goal, the international community should promote partnership, security, growth, inter-civilization exchanges and the building of sound ecosystems."¹¹ China's vision has been echoed by more and more countries and peoples in their joint efforts to fight against the Covid-19 pandemic and beyond. But it would still take a long time before translate this great vision into the common goal of the post-pandemic world by all members of the international community.

Plans and actions are also needed except for a common goal. The reshaping of post-pandemic world order will be the first to be triggered by something other than a war since the Great Discovery several hundred years ago. The contemporary age and the future will see greater changes in world economy, science, technology, politics,

¹⁰ G. John Ikenberry and Charles A. Kupchan, "Global distancing," *Washington Post*, May 21, 2020, <https://www.washingtonpost.com/outlook/2020/05/21/pandemic-international-cooperation-alliances/?arc404=true>.

¹¹ Xi Jinping, *The Governance of China II* (Foreign Languages Press, 2017), p. 592.

security, culture and people's mindset. Therefore, the design of the new world order must be present-based as well as forward-looking. It takes time for the old establishments to understand the hard reality of the world, so does the emerging powers to perfect their vision before it is accepted by the people all over the world.

Five Recommendations

In terms of reforming and creating world order, most governments at this stage only have general ideas but lack feasible action plans. The academia and think tanks should step forward to lead relevant discussion and debate in order to contribute their wisdom for designing and developing a new world order. To this end, the author would like to present the following five recommendations.

The world economy is to be vitalized by sustainable growth, optimizing production chain and supply chain, and giving a fuller play to science and technology. For now, immediate attention and efforts should be directed to address the economic recession, which is calling for closer global cooperation. Urgent actions should be taken in the economic and financial sector. Special attention and assistance should be given to the least developed countries to support their combat against the Covid-19 pandemic and reduce their burden of debt. Globalization that emphasized the economic wealth has laid bare its defects and met strong criticism and resistance in many parts of the world. An upgraded version of globalization should put its emphasis on better and happier life.¹²

Not everything in the world today is in disorder, so the functional part of the existent world order should receive due respect. Regarding international organizations, we should respect the UN and other rule-based organizations such as WTO and WHO. As what the WHO Director General Dr. Tedros Adhomom Ghebreyesus said: "The world doesn't need another plan, another system, another mechanism, another committee or another organization. It needs to strengthen, implement and finance the systems and organizations it has — including WHO."¹³

Reforms should be carried out where necessary and possible. It will be a long and complicated process to transit peacefully from old orders to new ones. Some orders do need to be reformed because of the changed and changing conditions. Reform should be based on full discussion and carried out step by step. The reform of World Bank and IMF are being proceeded this way and has achieved some initial progresses.

While reforming the old orders, we should make more efforts to make the new order. The Covid-19 pandemic is a wake-up call that the world needs new institutions, norms, and principles to fill in the vacuum. We must pay greater attention to those that were neglected before, taking into account culture and civilization, non-state actors, and the enhanced role of science and technology, etc..

Collective leadership should be one important feature of the new world order.

¹² Long Yongtu, "疫情加速了向以人的幸福为目标的全球化转化(The Pandemic accelerates the transition towards the globalization aiming at a happier life)," May 9, 2020, <http://finance.ifeng.com/c/7wKJ2Shk6D2>.

¹³ "WHO chief warns of long road to travel as COVID-19 risk remains high," Xinhua News, May 19, 2020, <http://en.people.cn/n3/2020/0519/c90000-9691639.html>.

Just as the former Slovenian President Danilo Türk pointed out: The world needs leadership. This leadership must be collective; no individual state can do the job. A new leadership will have to include the most active members of the G20, a smaller group of states that have already demonstrated their will to act with their global responsibilities in mind, and that have the means to do so. Now is the time for fresh initiatives to lead the world to a new level of global cooperation.¹⁴ The leading powers play a critical role in creating, maintaining and reforming the world orders. No matter how much weight China and the United States have in remaking the world order, sufficient considerations should be given to other players such as Europe, Russia, India and the middle powers. Besides, the legitimate and meaningful leadership of the future world order should respect the wills and interests of the developing countries, making the world order as inclusive as possible.

The new world order should be built upon consensus. Gone forever are those days when a few powers could decide upon the world order. Although it is not yet the time when every country could enjoy true equality and fairness, the historical trends are definitely moving in this direction. Therefore, all members of the international community should cherish the hard-won rights to build up a new world order, no one excluded. Though the international community neither could nor should pursue consensus on all the ideas, principles, plans and actions, it should do so on the most essential and practical issues such as multilateralism, win-win cooperation, economic growth, social progress, and public well-beings, etc..

The world should be prepared for rainy days. Promoting a more just and sensible world order is bound to encounter difficulties. In the final analysis, all countries and the international community as a whole should protect people's life and well-beings hopefully through more peaceful and non-military means. Therefore, the world should enhance its capability of damage control and crisis management. The ongoing combat against the Covid-19 pandemic shows again that the international community lacks both preparedness and means to deal with the crisis. The future world will see more traditional and non-traditional challenges. All countries and the international community as a whole should attach greater importance to enhance material, technological, scientific, legal and intellectual readiness. Major powers in particular should further enhance their implementing capacity and their consultation and coordination on international mechanisms.

Conclusion

The Covid-19 pandemic hit the world at a time when the international community is amidst unprecedented changes of long-term significance and at the dawn of a new world order. When the mankind stands at historic turning point, it would often be deceived by many superficial phenomena and fall into the traps of fragmented thinking. This is particularly true at the age of globalization when information is oversupplied. As the Covid-19 pandemic and the global developments are still

¹⁴ Danilo Türk, "Cooperation, leadership vital to defeat pandemic," *China Daily*, April 25, 2020, <http://global.chinadaily.com.cn/a/202004/25/WS5ea3a760a310a8b24115186b.html>

evolving, an integrated analysis is needed between the expected events and the fundamental features of all these developments. Only by so doing can we properly define the Covid-19 pandemic and better understand that this pandemic is just one of the numerous adversities that the mankind confronts with.

Now that the Covid-19 pandemic is likely to be long-standing and recurring, and that some countries have succeeded in containing the virus, the international community must strike a balance between continuing the fight against the virus and returning to normal economic and social life. Gradual easing of control and phased recovery are much needed. Down the road of fighting the Covid-19 pandemic *per se*, the international community should examine economic, social, political, and other damages caused by the Covid-19 pandemic and search for remedies. Economic recovery must be on the top of the agenda. The international community in the post-pandemic world should also attach greater importance to science and technology innovation, advanced management, sensible layouts, and equal distribution. Society remolding is yet another important job. Besides, the world would see more security challenges in the future. Nowadays security is no longer in its narrow sense but includes military security, food security, ecological security, human security, and many others. The Covid-19 pandemic made life security ever more important. With an increasing number of non-traditional security threats, to achieve overall security should become common goal of human actions.

Confronting with new changes and challenges, the international community should stick to preserving world peace and stability while major powers should shoulder their special responsibilities. Sadly, major powers have been seeing more splits than unity since 2017 since President Trump came into power. The unity that they showed in the war against terror in 2002 and financial crisis in 2008 was nowhere to be seen. Presently, the major powers are facing the risk of being divided into two opposing blocs and entering a new cold war. Hence the major powers should think and act with a big picture in mind and move along with the cross-cutting trends of peace, development and win-win cooperation. Being the two front-runners, the United States and China should eventually find a way to translate strategic competition into pragmatic cooperation with other members of the international community in the post-pandemic age.

Since the end of WWII, most countries and peoples have been longing and striving for a fairer and more justified world order that can benefit all. The developing countries are rising for political, economic and security rights. Even the small-and-medium-sized developed countries strived for regional integration to enhance their weight in global affairs. These developing countries and small-and-medium-sized developed countries put checks and balances on major power relations. The Covid-19 pandemic is just one of the many rounds of impact that constantly change the configuration of powers and catalyze the birth of new world order. The international community must prepare to translate challenges into opportunities. During this historic process, the non-West countries should take an active part and play a greater role in building institutions, setting agenda and making norms. Although there is still a long way to go, all the relevant parties should start

early and do a better job for the discussion, debate, design and development of the new world order in the interests of the entire mankind.

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Barbara Lippert and Volker Perthes (eds.)

Strategic Rivalry between United States and China

Causes, Trajectories, and Implications for Europe

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Volker Perthes

Dimensions of Strategic Rivalry: China, the United States and Europe's Place

Rivalry between the United States and China has become a paradigm of international relations over the past two years. It shapes strategic debates and real political, military and economic dynamics, and is likely to continue to do so for some time. That is not to say that the competition between Washington and Beijing, or even great power rivalry in general, determine all other international problems and conflicts. But the rivalry does increasingly frequently form the lens through which other actors view important developments and events. At least for the United States, it can be said that strategic rivalry with China has edged out the “War on Terror” paradigm that had prevailed since 2001.

All contributions to this publication were written before the Corona crisis began. Like any global crisis, the pandemic will leave an impact on patterns of international governance and cooperation, and probably on the structures of the international system. It is possible — but by no means certain — that the aftermath of the crisis may actually see global governance structures strengthened in individual policy realms, particularly with regard to global health. This cannot happen without the buy-in of most, if not all, the major powers. But even with heightened co-operation in some policy fields, the rivalry between the United States and China will likely remain a — if not the — defining issue in international relations for some time to come. In some areas, the pandemic may actually fuel the competition. This is already seen in the ideological realm where China, after first being criticised for the way it handled the virus outbreak, now highlights the advantages of its own — authoritarian — governance system in responding to such crises. The pandemic may also witness some nations gaining soft power by showing solidarity, while others lose some of theirs for not doing so.

Since 2017 China has been treated as a “long-term strategic competitor” in official US government strategy documents. And in its London Declaration of

December 2019 NATO spoke for the first time of the challenges (and opportunities) presented by China's influence and international policies.¹ China's political elite is — rightly — convinced that the United States is seeking at the very least to prevent any further expansion of Chinese influence. And while disputes over trade policy and trade balances feature most prominently in the US President's statements and directly affect the global economy, they in fact represent but one aspect of the rivalry and by no means the most important. The conflict is, as Peter Rudolf shows, multidimensional.

Analytical clarity is an absolute prerequisite if Germany and the European Union are to pursue their own autonomous strategic approach to the Sino-American rivalry: Only if we understand the multidimensionality of the conflict constellation will we be able to find appropriate political answers and develop the necessary instruments.

Global Power Rivalry

The issue at hand is global power equilibria and their status within the international system. There are grounds to believe that US President Donald Trump regards superiority — and above all military dominance — as an end in itself rather than simply a means to promote particular interests and values. President Xi Jinping appears to be driven more by a Chinese vision of world order in which superiority is both means and end. But the conflict also has security-related, economic, technological and ideological

1 “London Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in London 3–4 December 2019”, press release 115, 4 December 2019, https://www.nato.int/cps/en/natohq/official_texts_171584.htm (accessed 9 December 2019).

dimensions, as well as what one could call a personality dimension. The contributions in this volume examine each of these dimensions and their contexts, as well as the repercussions of US-China rivalry on international institutions and on Europe. The issues of relevance also encompass the respective influence of the established and the rising superpower on other states, regions and societies.

From the Chinese perspective, as Hanns Günther Hilpert and Gudrun Wacker show, the United States will never voluntarily cede significant international influence to China. America regards China as a revisionist power whose long-term aim is global supremacy. This, as the contribution by Marco Overhaus, Peter Rudolf and Laura von Daniels demonstrates, is a matter of broad consensus in the United States, across both main parties and throughout business, politics and society as a whole. More considered positions do exist, but they tend to be marginalised. Real debate is confined largely to the question of the means by which the conflict is to be conducted.

For that reason too, hard security challenges escalate, leading to the emergence of a classical security dilemma. As Michael Paul and Marco Overhaus outline, this applies especially strongly to China as a great power that is expanding its radius of action and in the process transitioning incrementally from the doctrine of coastal defence to maritime “active defence”. But it also applies to the United States, which sees China’s growing military capabilities as a threat not only to its own military bases in the Pacific, but also to its system of partnerships and alliances in the Asia-Pacific region — and in the longer term to its nuclear deterrent.

Conflicts over Trade, Economic and Financial Policy

Economic competition and conflicts over trade, economic and financial policy form a real dimension of rivalry in their own right, which predates the protectionist course adopted by the United States under President Trump. Washington’s criticisms of Chinese trading practices, unfair competition and rule violations are widely shared in Europe. The trade conflict is, as both Hilpert and von Daniels explicate in their contributions, closely bound up with questions of world order that are of vital importance, especially from the European perspective. That applies for example to the future of binding multilateral trade rules

and institutions. These issues are also of domestic political relevance in both states, with strong mobilising potential that is not fully contingent on the extent to which global developments actually affect the employment situation in particular sectors. All in all, however, Hilpert argues, the material benefits accruing to both sides from their economic cooperation have declined in comparison to the period between 1990 and 2015. Bilateral trade between the United States and China is no longer a stabilising factor capable of ameliorating political conflicts. Instead trade conflicts are politically instrumentalised, although they may also represent the most easily untangleable knots in the complex web of US-China rivalry. Or put another way: the strategic rivalry between the United States and China will continue to exert decisive influence on international politics for the foreseeable future, even if Washington and Beijing succeed in resolving important trade issues and manage to conclude a trade agreement before the upcoming US presidential elections.

Technological Dimension

The technological dimension of the rivalry runs deeper and will outlast any putative resolution of the trade disputes. Both absolute and relative prizes are at stake: the question of who will secure the largest piece of the cake in the long term, for example by defining the technical standards. And technological competition is always also a question of security. There is no other plausible explanation for the sharpening of competition and the growing mistrust that has in the meantime noticeable restricted exchange and cooperation in the technological sphere. As Matthias Schulze and Daniel Voelsen explain, this competition also connects with geopolitical questions in the traditional sense: “Technopolitical spheres of influence” built on digital products and services are no longer purely territorial, but still allow geopolitical power to be projected and international dependencies to be cemented.

In this connection, questions of the development and use of technologies increasingly connect with political and ideological aspects. They become part of a system opposition or systemic competition concerning the internal order: the relationship between state and society, between government and governed. Hilpert addresses this political/ideological dimension, which located in a global competition between liberal

and democratic paradigms on the one side and authoritarian on the other. Everywhere, including Europe, this might ostensibly be an internal debate, but it is codetermined by the polarisation between the United States and China. Defending democratic values and liberal elements in the world order is plainly not a priority for the serving US President. But for Congress both these concerns are front and centre in the Sino-American rivalry and both chambers have been working to promote more decisive policies in this respect – most recently with the Hong Kong Human Rights and Democracy Act in November 2019.

The debate in the United States is characterised by fear of the rise of China and the possibility of being overtaken. This is perhaps why, as Hilpert outlines, the Chinese elites also still feel insecure, threatened by liberal values and world views. That remains the case despite China having disproven the West's liberal expectation that democracy and rule of law would emerge more or less automatically if the country developed economically and generated growing prosperity. China's development model has been successful, and liberal values still remain attractive especially to young, well-educated and mobile members of Chinese society. This explains the Chinese leadership's nervousness over Hong Kong, its apparently exaggerated fear of colour revolutions, and its comprehensive efforts to secure its grip on power and ideally establish its own type of harmonious society by technological means.

Technologies are, as Schulze and Voelsen point out, not value-neutral. The more technological developments touch on fundamental questions of political and social order, the more technological competition will be tied to the political/ideological dimension of strategic rivalry, be it in data gathering and processing, artificial intelligence or biotechnology. Germany and the European Union will also have to address questions such as what it would mean for the European model of state and society, which is committed to the protection of individual rights, if Chinese technology investments were to enable a large-scale outflow of personal data. There is also a need for a critical investigation of how the development and export of surveillance technologies and social control techniques by Chinese high-tech firms not only assists authoritarian and repressive regimes but also promotes the dissemination of illiberal concepts of governance and society.

Different Leadership Styles

One can debate the extent to which the personal factor, the specific traits of Trump and Xi, represents a separate dimension of the US-China rivalry in its own right. In any case, Günther Maihold argues, their different but in both cases very personal styles of leadership will continue to influence relations between the United States and China. Trump's transactional and Xi's externally and internally transformative style are highly incompatible. They tend to undermine whatever basis of trust still remains, restrict the possibilities of diplomacy and exacerbate bilateral conflicts. Other powers, including the European Union, might in certain cases gain room for manoeuvre of their own. But they will principally have to put their efforts towards upholding international rules and international institutions, which are being harmed in different ways by both Washington and Beijing.

International Effects

Even if the constellation of conflict and competition described here is understood as a bilateral rivalry and to some extent plays out as such, its significance and consequences are global: It affects relationships with other powers, influences regional dynamics even in Europe, shapes the work of international organisations and forums (such as the G20 or the United Nations and its agencies), and, as Laura von Daniels describes, often enough undermines multilateral institutions. This is especially clear in the case of the World Trade Organisation, whose rules have been violated by both sides and whose very function the Trump Administration has sought to impair. China is establishing new international forums and organisations in line with its own Sinocentric concepts of order, especially in its own regional environment. But unlike the United States, China is showing no signs of withdrawing from international and multilateral institutions. Instead it is working actively to expand its influence at the United Nations and within its agencies and programmes. One channel by which this occurs, not least in the case of UN peacekeeping, is for China to assume greater responsibility and a larger share of the costs. But at the same time it seeks to establish its own political terms and values in the language of the United Nations. Whereas Trump took the United States out of the UN Human Rights Coun-

cil, China has been working establish its own ideas within it, for example by relativising the importance of individual human rights.

The European Union and its member states are affected directly and indirectly by the Sino-American rivalry. Europe's take on China has become more critical, in Germany probably more so than in other EU member states. Europe no longer sees China just a negotiating partner with different interests and an economic competitor, but also a "systemic rival promoting alternative models of governance".² Nevertheless, from the European perspective China remains a vital cooperation partner for tackling global challenges, first and foremost but not exclusively in connection with climate protection. Europe cannot have any interest in a "decoupling", in the sense of a broad severing of technological and economic ties of the kind being discussed and to an extent also prepared in the United States. Like many other states and regional groupings, Europe will also have to resist the bipolar logic pressing it to choose between an American and a Chinese economic and technological sphere. Instead it will have no alternative but to work towards sustainable long-term ties on the basis of real interdependency and shared rules. Equidistance to China and the United States, as occasionally proposed by interested parties in European debates,³ is not an option however. For that the gap between Europe and China – in terms of questions of values, the political system and the rules-based international order – is too large. And however great the differences may appear, the ties that bind the Euro-American community of values and security are likely to remain a great deal closer than the relationships of either the United States or the states of Europe to any other international partner.

New Strategy for Europe

Europe will, as Annegret Bendiek and Barbara Lippert underline, have to discover its own strengths and develop a China policy that is not conceived as a "country strategy", but as part of a comprehensive European strategy of self-assertion, or, in other words, part of a striving for greater European sovereignty or strategic autonomy.⁴ Especially in connection with China, this demands more supranationality, or what Bendiek and Lippert call a "supranational geopolitics". Work is already under way on instruments that could serve a confident, prudent European policy towards China, such as foreign investment screening complemented by national legislation. The trick is to prepare Europe for harsher competition by strengthening social and technological resilience, without weakening cooperation and interdependency. Such a strategy should apply to not only the direct relationship to China but also to Europe's international and global profile as a whole. Many states and societies in Asia and Africa value China's economic engagement and its Belt and Road Initiative, but fear one-sided dependencies. Here the European Union's connectivity strategy towards Asia represents a sensible approach. The same applies to the already considerable funds that Europe provides for African infrastructure, for example via the European Investment Bank. Finally, European states will have to expand their engagement in the United Nations and other multilateral organisations and forums. In the process they may find themselves having to fill gaps created by the disinterest or withdrawal of the current Administration in Washington. That offers an opportunity to demonstrate that Europe's understanding of multilateralism and international rules differs fundamentally from Sinocentric multi-bilateralism.

2 European Commission, *EU-China – A Strategic Outlook*, Joint Communication to the European Parliament, the European Council and the Council, 12 March 2019, https://ec.europa.eu/commission/publications/eu-china-strategic-outlook-commission-contribution-european-council-21-22-march-2019_de (accessed 4 December 2019).

3 For example Xuewu Gu, "Der dritte Weg: Warum Europa den Alleingang wagen muss", *Handelsblatt*, 22 December 2019, <https://www.handelsblatt.com/meinung/gastbeitraege/gastkommentar-der-dritte-weg-warum-europa-den-alleingang-wagen-muss/25253468.html> (accessed 4 December 2019).

4 For an in-depth treatment, see Barbara Lippert, Nicolai von Ondarza and Volker Perthes, eds., *European Strategic Autonomy: Actors, Issues, Conflicts of Interest*, SWP Research Paper 4/2019 (Berlin: Stiftung Wissenschaft und Politik, March 2019), <https://www.swp-berlin.org/en/publication/european-strategic-autonomy/>.

Peter Rudolf

The Sino-American World Conflict

The strategic rivalry between the United States and China risks spiralling into a multi-layered world conflict that presents economic and military dangers.* The rivalry between the two great powers is beginning to structure international relations and bears the potential to bring forth a new “geo-economic world order”. In comparison to past decades, the question of who gains more from economic exchange and concern over the problematic security implications of economic interdependence now play a much more important role. If economic and security interests are placed on a permanently new footing under these aspects, the level of integration could decline to a point where it could be regarded as a kind of de-globalisation.

China's Rise as Threat to American Predominance

In the United States the rise of China is widely regarded as a danger to America's own dominant position in the international system. Although the idea of an unstoppable Chinese economic and military expansion and a relative loss of power for the United States is based on questionable assumptions and projections, China is genuinely the only country with the potential to threaten the status of the United States. Power shifts, it is argued, could endanger the stability of the international system, if the predominant and the rising power prove incapable of reaching an understanding over governance and leadership in the international system. This is the implication of the power transition theory that has been avidly discussed in both countries and in recent years col-

oured the public debate in the guise of the “Thucydides Trap”. The theory itself is problematic, its explanatory value contested. But as an interpretive framework it influences perceptions both in the United States and in China. On the one hand this framework highlights the risks of a transition, on the other it sees individual conflicts of a more regional or local nature coalescing to a global hegemonic conflict.

On the Structure of the Sino-American Conflict Syndrome

A string of elements make up the US-China conflict syndrome. Its basis is a regional — and increasingly also global — status rivalry. China's growing power has awakened American fears over its status as the only international superpower. Some would argue that states (or the protagonists representing them) seek status as an end in itself, as postulated in approaches grounded in social psychology. In this understanding, higher status engenders the psychological gratification of superiority over other individuals or states, and the prospect of losing this status threatens one's own identity. But status is also associated with material gains. In the longer term, China threatens not only America's status as the leading power, but also the privileges and economic advantages that ensue from that status. China could, the sceptics argue, acquire dominant global political, economic and technological influence, set rules and standards across the board, and establish a kind of “illiberal sphere of influence”. In this case the United States would no longer be able to guarantee the security and prosperity it has enjoyed to date.

This competition for influence melds with an ideological antagonism. Of course, the human rights situation in China has always been a cause of intermittent friction in US-China relations. But as long as China's rise was not perceived as a global challenge and as long as the hope survived that China would eventually liberalise, China was not perceived as an

* This chapter summarises the findings of a longer study by the author, which also includes extensive references and sources. Peter Rudolf, *The Sino-American World Conflict*, SWP Research Paper 03/2020 (Berlin: Stiftung Wissenschaft und Politik, February 2020), <https://www.swp-berlin.org/en/publication/the-sino-american-world-conflict/>.

ideological antagonist in the United States. From the Chinese perspective this ideological dimension has always been more salient, given that Western concepts of liberal democracy and freedom of expression threaten the ideological dominance of the Chinese Communist Party. It must be expected, however, that the systemic conflict will loom increasingly large on the American side, sometimes interpreted as a clash between “liberal democracy” and what is occasionally referred to as “digital authoritarianism”. Highlighting the ideological conflict might be employed to mobilise sustained domestic support for a power clash with China that cannot come free of economic costs.

Even if the ideological conflict is not the most important layer, it must certainly be expected that an increasingly pointed “ideological difference” will intensify threat perceptions and thus strengthen the security dilemma between the United States and China. Since the Taiwan crisis of 1995/96 both sides (again) see each other as potential military adversaries and align their planning accordingly, so the security dilemma shapes the structure of the relationship. Neither side is especially sensitive to the reciprocal threat perceptions this produces, because the antagonists each see themselves as defensive, peaceful powers but suspect the respective other of aggressive intentions.

Dimensions and Dynamics of the Rivalry

Given that China and the United States are potential military adversaries — and not merely systemic antagonists competing over status — the relationship between the two must be understood as a complex strategic rivalry. This is especially clear on China’s maritime periphery, where the rivalry is dominated by perceptions of military threats and the American view that China is seeking to establish an exclusive sphere of influence in East Asia. In the South China Sea Washington’s insistence on unhindered access and freedom of navigation collides with China’s efforts to create a security zone and counter America’s ability to intervene. The geopolitical conflict over the South China Sea is, moreover, interwoven with the nuclear dimension. China appears to be turning the South China Sea into a protected bastion for nuclear-armed submarines to safeguard its second-strike capability vis-à-vis the United States.

Technological dimension of global competition for influence.

There are also military threat perceptions — albeit less important — in the global competition for influence, which in the meantime also encompasses the Arctic. The present US Administration is convinced that China’s growing global economic and political presence comes at the expense of the United States. In response Washington is applying pressure and incentives to dissuade other states from expanding their economic relations with China.

The global competition for influence is intimately bound up with the technological dimension of the US-China rivalry, which concerns technological predominance in the digital age. What makes this dimension of the conflict so crucial is that technological leadership creates global competitive advantage and secures the basis for military superiority.

As reflected in the campaign against Huawei, we are witnessing a turn away from the positive-sum logic in economic relations with China. As long as Washington was not afraid of the rise of a strategic rival the economic logic predominated. And in absolute terms the United States profited from economic exchange relations. That China may have derived relatively larger benefits played no real role. This economic logic of absolute gains was tied to an expectation that economic interdependence would have cooperation-promoting and peace-stabilising effects. Now fears that China is growing into a global strategic rival are eclipsing the economic logic. Under Trump the security logic now dominates both rhetoric and practice, in association with concerns over the relative distribution of gains and the view that economic interdependence has negative consequences for the technological basis of military superiority.

Consequences

If the strategic rivalry between the United States and China consolidates into a lasting global conflict constellation this could set in motion a kind of deglobalisation, ultimately leading to two parallel orders, one dominated by the United States, the other by China. If the US-China conflict continues to sharpen and accelerates the bipolarisation of the international system, the basis for global multilateralism could disappear. And the US-China world conflict confronts Germany and the European Union with the question of the

extent to which and terms under which they should support the United States against China. One thing appears certain: Whether President Trump is reelected or a Democrat enters the White House in January 2021, the strategic rivalry with China will shape US foreign policy.

Washington views the world, and Europe, through a “China lens”.

Washington will likely view the world, and Europe, above all through a “China lens”. If this leads the United States to fixate even more strongly on the Indo-Pacific and competition over influence with China, it may treat crises in Europe and the European periphery as secondary. Washington’s pressure on its allies to take a clear position on the sharpening US-China conflict and clearly side with the United States is likely to grow rather than wane.

Laura von Daniels

Repercussions of the US-China Conflict on the Multilateral Order

The dawn of the 2020s finds the multilateral order in crisis, as China's rise to become a great economic, political and military power collides with the rise of "America First" politics in the United States. The greatest political challenges of our time involve transnational phenomena, including climate change, inequality and pandemics.¹ Yet at a time when one would hope for cooperation in international organisations to shift up a gear, we witness instead that multilateral organizations are paralysed. The idea of taking the development of existing institutions and rulebooks up a level is almost inconceivable. China under President Xi Jinping presents itself as the champion of multilateralism, but in reality subverts the work of multilateral institutions. At the same time US President Donald Trump threatens to withdraw from multilateral organisations, alternating between declaring them useless and complaining that they are hostile and anti-American. Both states undermine the global order in their own way by flouting multilateral rules and abusing institutions for displays of power.

Growing Rivalry between Beijing and Washington

Washington has had a sceptical eye on China's economic rise for some time. After the global financial crisis of 2008 American decision-makers grew increasingly concerned that China's enormous economic success would create a geopolitical challenge. It was Washington's willingness to lead the process of establishing and running the international order and the ability to bear significant financial burdens that

formed the basis for America's almost unchallenged dominance of the multilateral organisations since the Second World War.

Until the financial crisis the United States dominated the multilateral organisations almost unchallenged.

The financial crisis marked a turning point where the costs to the public budget restricted Washington's ability to maintain its dominance in central multilateral organisations. Although Barack Obama's Administration continued to support the international institutions and threw its weight behind multilateral conflict-resolution processes, it also significantly pared back its financial commitments, above all under pressure from Congress.² At the same time China, which emerged from the financial crisis largely unscathed, poured massive fiscal resources into expanding its influence in multilateral organisations. From Washington's perspective – and that of the rest of the West – the global geostrategic centre of gravity has followed the economic east to Asia, above all China, during the past decade. Among the areas of the global multilateral order displaying the growing rivalry between the United States and China, two stand out: firstly, the Bretton Woods institutions (World Bank and International Monetary Fund) and the World Trade Organisation, which promote cooperation on economic, financial and monetary policy; and secondly the United Nations.

¹ John Ikenberry, "American Leadership May Be in Crisis, but the World Order Is Not", *Washington Post*, 27 January 2016, <https://www.washingtonpost.com/news/in-theory/wp/2016/01/27/american-leadership-is-in-crisis-but-the-world-order-is-not/> (accessed 16 December 2019).

² Josh Rogin, "Obama Cuts Foreign Assistance to Several Countries in New Budget Request", *Foreign Policy Online*, 14 February 2011, <https://foreignpolicy.com/2011/02/14/obama-cuts-foreign-assistance-to-several-countries-in-new-budget-request/> (accessed 10 March 2020); "Obama's 'Smart Power' Plan Risks Death of 1,000 Cuts", *Reuters*, 7 September 2011, <https://www.reuters.com/article/us-usa-budget-power/obamas-smart-power-plan-risks-death-of-1000-cuts-idUSTRE78613G20110907> (accessed 10 March 2020).

The Bretton Woods Institutions and the US-China Conflict

Under the surface of the visible trade dispute between the United States and China lurks a conflict over participation in global decision-making, whose origins date back to the early 2000s. That is when China began demanding a larger say, commensurate to its economic importance, within the Bretton Woods institutions. But the United States, supported by the other G7 states, blocked a significant expansion of China's influence in the IMF and the World Bank. China responded by employing its enormous resources to found new formats and organisations, which it dominates as the largest single donor. This applies above all to the Asian Infrastructure Investment Bank (AIIB), the New Development Bank (formerly known as the BRICS Development Bank) and the Belt and Road Initiative.

At the same time, China has declined to obey a number of important trade rules ever since it joined the WTO in 2001. To this day some of the reforms promised in its accession protocol remain unimplemented, above all in the areas of market opening, market-distorting subsidies and protection of intellectual property. Unlike his predecessor Obama who maintained the multilateral rules while criticising China's neo-mercantilist economic policy, President Trump set a different course from day one. His Administration demanded that China implement reforms that would have completely upended its economic model. The United States — along with the European Union, Japan and Canada — accuse China of systematic theft of intellectual property and complain about competition-distorting requirements placed on Western companies in the Chinese market. But rather than conducting its economic conflict with China within the multilateral WTO framework, the Trump Administration actively weakens it in two ways.

Firstly, Washington itself overrides the agreed multilateral rules of the WTO by imposing comprehensive unilateral import tariffs on steel and aluminium and threatening further protectionist tariffs on other goods. This behaviour could serve as a model for other countries that — for domestic political reasons — want to protect their economy from foreign competition using tariffs. Washington's actions could set off a vicious circle of unilateral tariffs and other rule-breaking.

Secondly, the Trump Administration has been blocking the WTO's Appellate Body since June 2017.

On 10 December 2019 it had to be suspended because it was impossible to replace two judges whose terms had expired. To this day the Trump Administration has refused to state any concrete conditions, such as particular changes to the rules, that would persuade it to lift its blockade. Instead it has worked to block a joint initiative by the European Union, Canada and Norway to establish an interim appeal arbitration arrangement without US participation. In mid-November 2019, shortly before the adoption of the WTO budget for 2020/2021, the Trump Administration blocked future financial support for the Appellate Body Secretariat to express its dissatisfaction with the initiative by Brussels and its partners. Because the WTO operates under the consensus principle Washington was thus able to both prevent necessary appointments to the Appellate Body and paralyse its Secretariat.

An incapacitated WTO could come at a significant cost for the European Union. A number of recently concluded trade agreements with important trading partners — among them Japan and the Mercosur states — will indeed allow the European Union to conduct about 40 percent of its trade in goods under bilateral and plurilateral agreements.³ But for more than half of its trade, including with the crucial partners United States, China and India, there would — at least initially — be no possibility of binding rules-based dispute resolution as currently exists in the WTO framework.

The United Nations and the US-China Conflict

The rivalry between the United States and China is also felt in the United Nations, where it obstructs vital decision-making processes. While China has quadrupled its contributions to UN organisations over the past decade, the United States has been gradually scaling back (not just since the Trump presidency).⁴

³ The Mercosur states (Mercado Común del Sur) are Argentina, Brazil, Paraguay and Uruguay. Venezuela joined in 2012, but has been suspended since 2016.

⁴ Kristine Lee, "Coming Soon to the United Nations: Chinese Leadership and Authoritarian Values: As Washington Steps Back, Beijing Will Take Charge", *Foreign Affairs*, 16 September 2019, <https://www.foreignaffairs.com/articles/china/2019-09-16/coming-soon-united-nations-chinese-leadership-and-authoritarian-values> (accessed 10 March 2020).

China is the second-largest contributor to the United Nations.

China is today the second-largest individual contributor to the United Nations, both in terms of the regular budget and funding for peacekeeping missions.⁵ Of the five permanent members of the Security Council, China provides the most personnel for peacekeeping missions. Currently Beijing has 2,500 soldiers and police deployed, most of them on missions in Africa. In 2019 China was in tenth place in the list of countries contributing personnel to UN missions.⁶

China has recognised the value of the UN as a political platform, and makes deft strategic use of this. Since 2013 China has assumed a leadership role in four of the fifteen specialised agencies of the United Nations: the Food and Agriculture Organisation (FAO), the United Nations Industrial Development Organisation (UNIDO), the International Telecommunication Union (ITU) and the International Civil Aviation Organisation (ICAO).⁷ According to scholars studying Chinese activities in the United Nations, China uses these organisations to influence political debates and establish its own political terms in official documents, which then flow into the general UN discourse on peace and development.⁸ China's activities in the Human Rights Council illustrate how it works to sway the UN discourse.⁹ Since

2013 Beijing has repeatedly used the Council as a platform for its own propaganda. Chinese representatives justified the internment of an estimated one million members of the Uigur minority in the Xinjiang autonomous region as a necessary measure for fighting Muslim extremism.¹⁰ In verbal and written submissions to the Human Rights Council the Chinese government calls into question the value of individual human rights and emphasises the significance of state-led development programmes and the principles of national sovereignty and non-intervention in internal affairs. In July 2019 China's delegates to the Human Rights Council disrupted a dialogue with opposition activists from Hong Kong.¹¹ China also attempted in September 2019 to prevent another appearance by opposition activists from Hong Kong before the Human Rights Council, where they intended to report on violence by security forces against demonstrators.¹²

The US Administration has not to date responded in a decisive way to China's policy towards the United Nations.¹³ In 2018 the United States withdrew from

uploads/2018/09/FP_20181009_china_human_rights.pdf (accessed 10 March 2020).

¹⁰ Lindsay Maizland, "Is China Undermining Human Rights at the United Nations?" Council on Foreign Relations website, "In Brief", 9 July 2019, <https://www.cfr.org/in-brief/china-undermining-human-rights-united-nations> (accessed 10 March 2020).

¹¹ Ibid.

¹² UNWatch, "Human Rights Council Double Standards: Hong Kong Activist Is Only Speaker to Be Rebuked for Addressing Specific Country Abuses" (Geneva, 17 September 2019), <https://unwatch.org/human-rights-council-double-standards-hong-kong-activist-is-only-speaker-to-be-rebuked-for-addressing-specific-country-abuses/> (accessed 10 March 2020); "Hong Kong Legislator Urges UN Rights Body to Probe 'Police Abuse'", *Reuters World News*, 16 September 2019, <https://www.reuters.com/article/us-hongkong-protests-un/hong-kong-legislator-urges-un-rights-body-to-probe-police-abuse-idUSKBN1W116C> (accessed 10 March 2020).

¹³ While some measures have been taken to improve monitoring and respond more assertively to Chinese activities at the UN, no comprehensive strategy has been advanced. Units concerned with China's behaviour at the United States State Department reportedly suffer shortages of funding and personnel. See for example: Courtney J. Fung and Shing-Hon Lam, "China already leads 4 of the 15 U.N. specialized agencies — and is aiming for a 5th", *Washington Post*, The Monkey Cage Blog, 3 March 2020, <https://www.washingtonpost.com/politics/2020/03/03/china-already-leads-4-15-un-specialized-agencies-is-aiming-5th/> (accessed 10 March 2020).

⁵ The China Power Project website, "Is China contributing to the United Nations' mission?", undated, <https://chinapower.csis.org/china-un-mission/>; United Nations Peacekeeping website, "How We Are Funded", undated, <https://peacekeeping.un.org/en/how-we-are-funded> (accessed 10 March 2020).

⁶ United Nations Peacekeeping website, "Troop and Police Contributors", undated, <https://peacekeeping.un.org/en/troop-and-police-contributors> (accessed 10 March 2020).

⁷ China already heads more United Nations specialised agencies than any other member state. Its recent attempt to lead a fifth, the World Intellectual Property Organisation (WIPO) was ended by a US-led diplomatic campaign. Washington's preferred candidate, a national of Singapore, was elected head of WIPO by a large majority at the beginning of March 2020. "U.S.-Backed Candidate for Global Tech Post Beats China's Nominee", *New York Times*, 4 March 2020, <https://www.nytimes.com/2020/03/04/business/economy/un-world-intellectual-property-organization.html> (accessed 10 March 2020).

⁸ Lee, "Coming Soon to the United Nations" (see note 4).

⁹ Ted Piccone, *China's Long Game on Human Rights at the United Nations* (Washington, D.C.: The Brookings Institution, September 2018), <https://www.brookings.edu/wp-content/>

the Human Rights Council. In late November 2019 President Trump signed a bill enabling economic sanctions against individuals and the Hong Kong government in the event of human rights violations. Another bill banned the sale of crowd control software by American companies to the Chinese government. But the President had little choice, as a two-thirds majority in Congress would have overturned any presidential veto against China-critical legislation.¹⁴ In earlier statements on the protests in Hong Kong, Trump had indicated that he regarded the treatment of the opposition as an internal matter for China.

In other cases that caused a great stir, Trump has reduced America's financial contributions to the UN. One example is Washington's withdrawal from the United Nations Relief and Works Agency (UNRWA) after almost seventy years of membership. China on the other hand increased its contributions to UNRWA from about €300,000 annually to more than €2 million in 2018.¹⁵ In 2019 the Trump Administration again threatened repeatedly to make swingeing cuts to Washington's financial contributions to the United Nations. Even in cases where US Congress prevented budget cuts, the Administration indirectly denies funds by declining to actually transfer approved payments. At the beginning of December 2019 Washington's arrears at the UN amounted to more than €950 million.¹⁶ Although Washington eventually transferred more than half of its outstanding debt, the delay by its biggest single contributor forced the UN to initiate spending cuts.

Outlook

Neither China nor the United States behave consistently and exclusively destructively towards multilateral organisations. But both bypass multilateral organisations and rules. Both prioritise bilateral negotiations for resolving pressing conflicts. This harms the international organisations, which increasingly find themselves outmanoeuvred. The power rivalry between the two states is increasingly impinging on the interests of the European Union and Germany. The EU initiative is therefore on the right track in seeking to uphold the WTO's multilateral dispute settlement system jointly with other states. But this is not enough. In its own interest the European Union must work with other states to support and protect the existing multilateral institutions.

¹⁴ "Trump Signs Hong Kong Democracy Legislation, Angering China", *New York Times*, 27 November 2019, <https://www.nytimes.com/2019/11/27/us/politics/trump-hong-kong.html> (accessed 10 March 2020).

¹⁵ United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), "China Provides US\$ 2.35 Million in Support of UNRWA Food Assistance in Gaza", press release, 21 December 2018, <https://www.unrwa.org/newsroom/press-releases/china-provides-us-235-million-support-unrwa-food-assistance-gaza> (accessed 10 March 2020).

¹⁶ Jack Guy and Richard Roth, "UN Warns that Staff Could Go Unpaid Next Month as Member States Fail to Pay Dues", *CNN*, 9 October 2019, <https://edition.cnn.com/2019/10/09/world/un-budget-crisis-scli-intl/index.html> (accessed 10 March 2020).

Annegret Bendiek and Barbara Lippert

Positioning the European Union within the Sino-American Rivalry

The walls are closing in on Europe, which risks being crushed by the US-China rivalry. On the one hand, the EU member states are plainly not on board with Trump's current policy towards China and fear the far-reaching consequences of escalating trade disputes and geopolitical confrontation in the Pacific. On the other, Europe also takes a dimmer view of China, after a period where dealings with Beijing concentrated almost exclusively on market access and export opportunities. In a strategy paper published in March 2019 the High Representative of the European Union for Foreign Affairs and Security Policy, Federica Mogherini, adopted a new sharper tone: for the EU China is not only an important partner in international cooperation, but also an economic competitor and systemic rival.¹

China is a test case for European self-assertion.

In Europe, however, unlike the United States, no dominant school of thought has emerged treating China as the new arch-enemy in a structural global conflict. Unlike America's, the European Union's relationship with China is not focussed on geostrategic containment and decoupling. Instead it wants to develop a reciprocal primarily economic/technological interdependency between Europe and China on the basis of reciprocity and jointly agreed principles and rules. In order to achieve this, the European Union needs to be united and conflict-capable, equipped with the required legitimacy, and acquire the necessary industrial/technological resilience. To

that extent China represents a test case for European self-assertiveness.

European Unity and Disunity over China

The European Union's relationship with China is characterised by cooperation, competition and conflict. It is this ambivalent and issue-driven inter-regional cooperation in which diverging individual interests of market participants and member states need to be reconciled with the Union's overall interests and legal foundations. As a basic principle, the more unified the member states are, the greater the Union's negotiating power and the more effective its ability to pursue European interests vis-à-vis Beijing. But the member states are not (yet) ready to relinquish the corresponding powers or central coordination in relevant fields of policy towards China to the EU level. There are various reasons for this. Europe may be the world's biggest exporter, but is market leader in only a handful of digital technologies.² As it increasingly finds itself forced to import strategically crucial technologies and resources, certain member states react with great sensitivity to this dependency. This delays decisions in the Council and weakens the European Union's political impact. Especially in human rights question this frequently prevents the European Union from formulating a coherent policy towards China. Poland and Hungary have taken a different line at the United Nations, preventing the EU states from presenting a united front. At the EU-China summit in April 2019 certain member states opposed a common EU stance on China because they feared that Beijing might respond with economic reprisals or other sanctions to perceived affronts such as human rights criticisms. In March 2019 Italy

¹ European Commission and High Representative of the European Union for Foreign Affairs and Security Policy, *EU-China – A Strategic Outlook*, JOIN(2019) 5 final (Strasbourg, 12 March 2019), <https://ec.europa.eu/commission/sites/beta-political/files/communication-eu-china-a-strategic-outlook.pdf> (accessed 11 December 2019).

² "Softly, Softly: The Europeans Want Their Own Vision Fund to Invest in Tech", *Economist*, 31 August 2019.

became the first G7 state to sign on to China's "New Silk Road" (the Belt and Road Initiative). In so doing, Rome subverted the wish of the other member states to conduct talks about participating in the BRI only as a European block.

Disunity towards China – and the United States.

Disunity weighs all the heavier where the EU states also fail to pull together vis-à-vis the United States, which Washington is quick to exploit. Poland for example has signed bilateral treaties with the United States on missile defence and promised Washington that it will exclude Chinese technology from its 5G network.³ Such specific commitments are hard to reconcile with a united front of all member states. The European Union naturally shares a very broad range economic, security and normative interests with the United States while the distance to China remains fundamental. But a European policy towards China cannot build on the transatlantic relationship as it could in the past. It now exists within a new system of coordinates determined principally by the axis of conflict between the United States and China, and in which the European Union must find and hold its own position.

Foreign and Security Policy

The European Union is not a fully-fledged foreign policy and security actor in the Asia-Pacific region, but all the member states have external economic interests there, which would certainly have to be defended in the event of crisis. France and the United Kingdom in particular maintain their own naval presence in East Asia, relying on ties dating back to their time as colonial powers.⁴ The South China Sea is an important transit route for international movements of goods and raw materials, so a military conflict

there would have massive repercussions on the European Union's economic and security interests. France and the United Kingdom have already announced their intention to expand their security presence in the Far East. They assist states bordering the South China Sea in modernising their armed forces with technology transfer and arms sales, offer to support their efforts to secure free access to the seas through an expanded naval presence, and provide assistance with disaster relief, cyber-defence and counter-terrorism.⁵ Paris and London see themselves as "custodians of Western and European interests in the region".⁶ The French would like to see Europe taking on some of their commitments in the region, for example through EU flotillas including the United Kingdom.⁷ From 2020 it is planned to send a German naval officer to the Singapore Navy's Information Fusion Centre.

Security and economic concerns are becoming ever more closely interconnected. A prime example of this is the modernisation of mobile phone networks using components from the Chinese technology firm Huawei. In connection with European infrastructures, Huawei is not per se excluded from the single market. The question of the reliability of telecommunication components is subsumed under the logic of market regulation. Under the new EU Toolbox for 5G Security and the EU Cybersecurity Act all providers and suppliers of information and communication technology will be subject to graduated controls and will have to fulfil strict certification criteria for hardware and software. All the major internet platforms – whether American or Chinese – potentially enable surveillance capitalism (Shoshana Zuboff), so they are all of interest to EU data protection, data security and competition law.⁸

If a data leakage by Huawei were to be identified or cases of cybersabotage against digital infrastructures occurred, the consequence would be the company's exclusion from the Single Market. That in turn would decisively accelerate the European Union's efforts to achieve digital sovereignty vis-à-vis China. In the NATO context the European Union and the

3 "US-Regierung genehmigt Milliardendeal mit Polen", *Die Zeit*, 18 December 2017, <https://www.zeit.de/politik/ausland/2017-11/nato-polen-raketenabwehr-usa-auftrag-konflikt-russland> (accessed 11 December 2019); "Polen geht bei 5G Sonderweg mit den USA", *Deutsche Wirtschaftsnachrichten*, 3 September 2019, <https://deutsche-wirtschaftsnachrichten.de/500078/Polen-geht-bei-5G-Sonderweg-mit-den-USA> (accessed 11 December 2019).

4 Björn Müller, "Europäische Flugzeugträger im Pazifik", *Frankfurter Allgemeine Zeitung*, 25 January 2019.

5 Ibid.

6 Ibid. (translated).

7 Ibid.

8 Mathias Döpfner, "Das Worst-Case-Szenario ist bereits da": Die Harvard-Ökonomin Shoshana Zuboff war eine der Ersten, die vor der Übermacht der großen Digitalkonzerne warnte – und vor deren Datenhunger", *Welt am Sonntag*, 17 December 2019, 19–22.

United States share an interest in protecting critical infrastructures and defending them against attack. An incident could set in motion a race where both the West and the Chinese attempt to exclude all possible social and technical vulnerabilities. The threatened consequence is a military arms race and massive economic losses.

The European Union as Trade and Regulatory Power

The European Union's position in international politics rests to a great extent on its strength as a trade and regulatory power, as even China must acknowledge. The economic is the dominant factor in the increasingly conflictual Euro-Chinese relationship. In many respects the European Union shares Washington's criticisms of unfair Chinese competition practices. But Brussels and Washington have their own disagreements about trade questions and WTO principles, which in turn makes it harder to hold a shared transatlantic line towards Beijing.

Trade: The European Union is China's largest trade partner, while China is the European Union's second-largest trade partner after the United States. Since 1975 trade between China and the European Union has expanded by a factor of 250, to reach a volume of \$680 billion in 2018.⁹ Within the European Union the most competitive and largest exporters are the drivers of China policy. The European Union suffers both directly and indirectly from Washington's policy of punitive tariffs towards China: directly in the case of aluminium and steel, indirectly where trade flows are diverted (for example soybeans). After the United States imposed tariffs on steel and aluminium the European Union was forced to introduce import quotas for steel products from third countries — to the chagrin of the European car industry, which is reliant on imported steel. And in July 2018 US President Trump and then EU Commission President Juncker agreed that the European Union would rather support America's trade interests than those of Brazil, traditionally the European Union's largest supplier of soybeans, as a concession to Washington. The Euro-American trade disputes threaten to obscure the shared interest in multilateral solutions in the transatlantic relationship. And this makes it impossible to

use the WTO mechanisms to effectively enforce free trade principles — such as intellectual property protections and reciprocity of market access and investment terms — vis-à-vis Beijing. Especially in EU countries like Germany and France, which have important economic relations with China, companies and organisations call for a strong and assertive stance against Beijing's unfair practices.¹⁰ The European Union accuses Beijing of systematically subsidising Chinese private and state-owned enterprises in order to give them competitive advantages on a global scale. In response, especially France and Germany are in favour of the European Union developing an industrial strategy dedicated to catching up in digitalisation and infrastructure modernisation, to strengthen the competitiveness and market position of Europe's small and medium-sized enterprises which form the backbone of the (digital) internal market and the European economic model. At the same time Brussels should reform competition law in relation to market-relevant national and European enterprises, such as to promote a strategic sustainability agenda for climate and environmental technologies. This should also make the conditions of competition for these firms fairer in comparison to the often partly state-directed corporations in China.

Investment: The European Union has recently reformed its foreign investment control regime with an eye to Chinese activities in the single market. Following the example of the US legislation, it strengthens the state's rights to intervene vis-à-vis market participants. Here Brussels has succeeded in bridging the different preferences of the member states to adopt a regulation to which even countries like Portugal, Greece and Hungary were able to agree.¹¹ The latter had feared disadvantages if the new rules for foreign investment screening had been too strict. Here the European Union specifically has China in its sights as an economic competitor, because China is seeking to

¹⁰ Axel Dorloff, "EU-China-Gipfel: Auf der Suche nach Gemeinsamkeiten", *tagesschau.de*, 9 April 2019, <https://www.tagesschau.de/wirtschaft/eu-china-gipfel-113.html> (accessed 11 December 2019).

¹¹ European Commission, *Proposal for a Regulation of the European Parliament and of the Council Establishing a Framework for Screening of Foreign Direct Investments into the European Union*, SWD(2017) 297 final, Brussels, 13 September 2017, COM(2017) 487 final, https://eur-lex.europa.eu/resource.html?uri=cellar:cf655d2a-9858-11e7-b92d-01aa75ed71a1.0001.02/DOC_1&format=PDF (accessed 11 December 2019).

⁹ Eurostat data.

buy its way strategically into segments of the European Union's high-tech research and manufacturing, such as artificial intelligence, robotics and biotechnology. The new EU regulation is a compromise. It provides for creating a binding legal framework within which the member states conduct their own foreign investment screening before making the final decision themselves. The common criteria cover security and public order but leave aside broader economic issues such as those relating to competition law or industrial policy. The unity of the EU states in relation to investment controls contrasts with differences over regulatory preferences of the kind that exist between France and Germany. Specifically it is evident that there is no consensus among the EU states concerning Huawei's wish to participate in the creation of 5G infrastructure in the European market. Those that would not exclude participation stand opposed to the Trump Administration, which regards Huawei as a Trojan horse sent by a hostile government whose policies are irreconcilable with US security interests. Here Washington's clear geostrategic perspective collides with the European Union's primarily economic one. However, for reasons of security or vulnerability of critical infrastructure, the United Kingdom and Germany have also defined strict security criteria for suppliers. France already applies more restrictive security tests on foreign suppliers. The European Commission has published its own 5G Toolbox consisting of clearly defined recommendations for security and reliability standards.

Supranational geopolitics builds on the EU's resources as a trade and regulatory power.

Regulation in the Digital Single Market: The European Union's efforts to define and implement rules for the Digital Single Market meet their limits in relation to China and to an extent also the United States. The growing mistrust between America and Europe is reflected, for example, in Trump's response to the repeated fines imposed by the European Commission on US-based Google for violations of European competition law. The US President sees this as an act of retribution by a "tax lady [who] hates the US", as he called EU Competition Commissioner Margrethe

Vestager.¹² It is indeed the case that the regulatory philosophies on both sides of the Atlantic are becoming ever harder to reconcile. In the Treaty on the European Union the member states commit to a competitive social market economy (Article 3, TEU) and democracy (Article 2, TEU) and emphasises the universal rights of the individual (also concerning their personal data). The European Union integrates various stakeholders and market participants in its processes, in which fundamental rights are also observed. This multi-stakeholder approach is also found in current position papers by European institutions on the opportunities and challenges of the (Digital) Single Market and its agenda. EU organs commit to the idea of a (digital) society that is democratic and both community-based and inclusive. From this, the European Union defines interests, preferences and also instruments for a regulatory policy towards China and the United States. This policy is expressed through the General Data Protection Regulation, through merger controls and through restrictions on the generous tax policies of individual member states such as Ireland towards US-based Apple. If the European Union cannot succeed in working with the other major powers including China to establish permanent security- and confidence-building measures for cybersecurity and Industry 4.0, there is threat of a global collapse of the digital commons. Cooperation is also a precondition for tackling global challenges such as securing social peace and justice under the (working) conditions of digitalisation. Prosperity and stability on the regional and global scale depend decisively on observance of shared minimum standards in IT security as well as norms for state action in cyberspace and for the creation of shared governance structure.

Supranational Geopolitics

What makes the European Union strong in dealings with China and other great powers is the democratic disposition of its member states, its supranational institutional order and autonomous legal order, the size and potential of the Single Market, the common currency area, and the common trade and competition policy. These factors offer immense potential; to

¹² David M. Herszenhorn, "Typhoon Trump Blows G7 Off Course", *Politico*, 10 June 2018, <https://www.politico.eu/article/typhoon-trump-blows-g7-off-course/> (accessed 7 January 2020).

make full use of it demands the following: Firstly, the European Union's policy towards China is most effective where it is conceived not as a purely country-based strategy but embedded in a comprehensive and overall strategy for the European Union's self-assertiveness. Secondly, under the conditions of a new great power rivalry the European Union can best assert itself by further supranational integration and strengthening its collective actorness. Supranational geopolitics starts from the resources the European Union possesses as a trade and regulatory power. This represents the central source of its negotiating power on a global scale. Logically then, topics like industrial policy, market access and data security are high on the agenda of the new "geopolitical Commission" (Ursula von der Leyen).¹³ It would also be important for the new multi-annual financial framework to reflect these priorities and for the European Union to strengthen the Eurozone and the logic of integration in foreign and security policy.

As the world's largest internal market, the European Union has every reason to encounter China with confidence and to join neither the US strategy of containment nor that of the decoupling of entire economic spaces. Cooperation and competition are legitimate modes for a policy of self-assertion, as is self-protection through a modern industrial policy designed to close the technology gap. It plays into the European Union's hands that China operates above all in the geo-economic arena, which is also where Europe's power resources lie. Standing up to Beijing over WTO rules while at the same time engaging in the Asian Infrastructure Investment Bank and BRI projects are important elements of a strategic interdependency with China. At the same time Europe's self-assertiveness could be boosted by the EU-Asia Connectivity Strategy: strategic interdependence — rather than decoupling — is the more promising approach to dealing with China. This also includes the European Union offering third states alternatives to Chinese direct investment, through cooperation that will need to be lucrative for the recipients. The European Union has always seen Asia as more than just China. The European Union should therefore put more diplomatic and political weight into its cooperation and free

trade agreements with Japan, India and ASEAN and its member states. Its collective Asia diplomacy needs to be expanded above all in the fields of rule of law, democracy and human rights, ideally — as in other questions — together with the United States. In order to be able to stand up to China in the long term the European Union will have to strengthen its capabilities for supranational geopolitics, again ideally with transatlantic coordination and backing. The German government, together with France, the Commission and the Eurozone states, should explore the possibilities of a transatlantic trade agreement to remove industrial tariffs and non-tariff barriers in order to reinforce the Union's bargaining power towards Beijing in the light of upcoming negotiations about an investment protection agreement. The next EU-China summit is scheduled for the second half of 2020, during the German EU presidency, and should be supplemented by a parliamentary component. Independently of the concrete agenda, the most important message to China would be that the EU member states stand firmly united behind their priorities, above all principle-based policies and reciprocity on all levels and in all policy areas.

¹³ European Commission, Vertretung in Deutschland, "Kommission von der Leyen: Eine Union, die mehr erreichen will", 10 September 2019, https://ec.europa.eu/germany/news/20190910-team-struktur-von-der-leyen-kommission_de (accessed 11 December 2019).



FOREIGN AFFAIRS

This Is Not a Great-Power Competition

Why the Term Doesn't Capture Today's Reality

By Michael J. Mazarr

May 29, 2019

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A new era of great-power competition is upon us. That, at least, is the emerging conventional wisdom among foreign policy analysts in Washington. Both the 2017 National Security Strategy (NSS) and the 2018 National Defense Strategy (NDS) signaled a shift in thinking: the unclassified summary of the latter declared that “inter-state strategic competition, not terrorism, is now the primary concern in U.S. national security,” and many have turned to the classic concept of great-power rivals to describe the new reality. “After being dismissed as a phenomenon of an earlier century,” the NSS concluded, “great power competition returned.” Former U.S. Secretary of Defense James Mattis used the term in a speech outlining the NDS. Outside government, references to great-power competition have proliferated over the last several months, the term having

become a sort of shorthand for the situation the United States now faces. But does the phrase really capture today's reality?

Great-power competition describes a specific pattern of relations between states—the sort practiced by the great empires and nation-states from the seventeenth through the early twentieth centuries. China's rise as an economic and political power and Russia's increasing assertiveness on the world stage have understandably fueled analogies to that time. But the emerging era does not match the patterns of the past. Treating it as though it does risks misunderstanding both the character of today's threats and the source of the United States' competitive advantages.

A CLASSIC PATTERN

Great-power competition reflected a reality that many see as perennial in world politics: the leading powers of any era tend to view one another in suspicious, hostile, and sometimes apocalyptic terms and to compete bitterly for power, influence, and status. The typical version of the concept describes several specific ways in which collections of great powers interact.

For one, great-power competitions create a churning, multipolar structure of world politics in which major powers face a powerful set of potential enemies and constantly shuffle their allegiances. The classic case is Europe in several distinct periods from the seventeenth century to the early twentieth: France, Great Britain, the Habsburg and Austro-Hungarian empires, Prussia (later Germany), Spain, Russia, and others worried about, armed against, and aligned with and against one another in a tumbling geopolitical contest.

During periods of great-power competition, states occasionally settle into temporary agreements on norms to regulate their conduct—as in the heyday of the nineteenth-century Vienna System—but for the most part,

ordering mechanisms remain weak. Players seek power, influence, wealth, and status unencumbered by shared international institutions, norms, or rules. The kaleidoscopic rivalries of great-power competition thus fuel the intense uncertainty in world politics that is a recurring pattern in those eras.

In classic great-power competition, rivalries typically manifest themselves in military forms of competition and conflict. Economic, social, and cultural tensions have shaped these contests as well, but traditional great-power clashes were defined by the prospect of large-scale warfare. Great powers from Napoleon's France to Bismarck's Prussia to Wilhelmine Germany to the revisionists of the 1930s threatened one another with invasion and war. Military strength was the ultimate arbiter of such contests.

Each of these three elements—a multipolar system, a general disregard for rule-based constraints on behavior, and dominantly political-military forms of rivalry—is present during periods of great-power competition. Yet none of them accurately describes world politics today. The NSS and NDS are right to point out the growing competition between the United States and China and, in less comprehensive terms, between the United States and Russia. But these rivalries (and other relationships between major powers today) are unfolding in ways, and within a larger international context, that bear little resemblance to great-power competitions of the past.

THE EMERGING ERA

The current structure of the international system is not fundamentally multipolar. It does show growing signs of multipolarity, in the reduced degrees of U.S. predominance and as several regional powers have become more assertive. Yet it also retains many elements of the post–Cold War period of unipolarity. Washington remains the predominant power for many reasons: its overall military superiority, its leading role in so many

international organizations, its formidable set of treaty allies, and its ownership of the world's dominant reserve currency are chief among them. At the same time, the emerging system has important elements of bipolarity: the United States and China are clearly first among equals, and their rivalry is likely to play a disproportionate role in shaping the course of world politics. Today's world thus reflects a complex mixture of unipolar, bipolar, and multipolar elements that does not match the classic vision of a colliding set of roughly equivalent great powers.

Moreover, when states compete today, they do so mediated by institutions, rules, and norms that differ starkly from the conditions during most periods of true great-power competition. Most major powers today are firmly established industrial democracies that want stability and prosperity and harbor no meaningful territorial ambitions. A dense network of organizations, treaties, informal processes, and many other constraints regulates their relations. The postwar order, although imperfect, has produced the most highly institutionalized and norm-bound international system in history. Critically, this order is not imposed on an unruly set of troublemakers—it reflects deeply embedded economic preferences for peace, stability, and prosperity.

The resulting relations between most leading powers look very little like the typical pattern during classical eras of great-power competition. Japan, for example, does not fear India. (Indeed, they are collaborating to balance Chinese power.) The European Union does not fear Brazil, which does not fear Mexico. Many of the world's most powerful states belong in military alliances and political unions with one another; even those that do not are collaborating extensively in areas such as trade, information security, climate, and global development. The security problems of the emerging era come not from a set of mutually suspicious great powers but from a handful

of partly revisionist states, led by Russia and China, unsatisfied with their status in the international system.

The way those states express that dissatisfaction, moreover, differs significantly from the classic predominance of political-military forms of great-power competition. Because of the nuclear revolution, victorious wars of conquest are simply not a realistic option. No modern Russian Napoleon could imagine seizing the whole of Europe, because to do so would be to court nuclear annihilation. Beyond the effect of nuclear weapons, several factors—including the role of democracy, prosperity, and economic interdependence—have ushered in an age when military adventurism is strikingly rare. Today's versions of rivalry and competition almost always play out in the economic, political, cultural, and informational spheres—not on the battlefield.

This is not to say military power plays no role in current competitions. It surely does, as a means of coercion and a backdrop to other efforts. But this is a vastly different role than military power played, for example, for France, the Habsburg dynasty, Japan, or Prussia in the eighteenth and nineteenth centuries. Anyone seeking evidence need look no further than defense-spending levels of most major powers today, which have remained stubbornly low.

The strategy of the United States' leading rival—China—is therefore to advance its interests primarily through economic, geopolitical, and informational means. Military power certainly backs up some of China's ambitions, such as in the South China Sea and in its belligerent posture toward Taiwan. But China's activities today pale in comparison with earlier forms of great-power military aggression, which often involved existential threats to homelands—Germany's fleet threatening the United Kingdom's survival before World War I, Napoleonic France invading its neighbors, and

the like. Whatever China's objectives are today, they will not be served by a direct attack on other great powers.

Viewing competitors as mirror images of one another—as standard-issue great powers, motivated in similar ways and subject to the same kinds of influence—prevents U.S. policymakers from making crucial distinctions.

THE WRONG FRAME

To see the state of international relations today as a new great-power competition is not only inaccurate but dangerous. Viewing competitors as mirror images of one another—as standard-issue great powers, motivated in similar ways and subject to the same kinds of influence—prevents U.S. policymakers from making crucial distinctions. Russia and China, for example, pose very different challenges for Washington. Both seek regime security and recognition as equal powers, but Russia aims to disrupt the current U.S.-led order whereas China seeks to supplant the United States' role at the hub of world politics.

Conceiving of the emerging era as a classic great-power competition can not only obscure important differences between competitors but also lead policymakers to overemphasize military power as an instrument to advance U.S. interests. At a time when states are likely to seek competitive advantage primarily through nonmilitary means, this view would reinforce the imbalance in U.S. strategy between military and nonmilitary instruments of power.

Finally and most perilous, a great-power competition frame risks forfeiting the immense power that comes from heading a largely aligned group of rule-following states. The United States is already showing signs that it no longer values its role as leader of the international order it has shaped since the end of World War II. If Washington thinks of itself as one desperate,

self-interested geopolitical chess player among many, grasping for temporary and transactional advantages, that role will likely further diminish. The United States would do far better to continue leading the group of nations that holds the predominant share of global economic and military power, is bound together by a dense network of institutions, and remains committed to certain norms, such as those against military aggression and economic predation. To abandon this role would be to walk away from the greatest competitive advantage any great power has ever known.

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Session Three

Reforming Global Health Governance



Background Memo

Reforming Global Health Governance

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The COVID-19 pandemic is straining the global health governance framework, raising the question of necessary structural reforms.

Global Health Governance Is a Microcosm of Global Governance

The structural challenges of the global health governance framework mirror challenges in other global commons governance frameworks, such as human rights, climate change, tax justice, and nuclear nonproliferation. Four major structural challenges in governing the global commons come into play with health.

First, there is a long-standing debate between the rights and duties of nation-states regarding the health of their own citizens and for citizens of other countries. Second, power, legitimacy, and resources belong more to nation-states than to global health organizations. Third, rising nationalism reduces global health collaboration. Fourth, the lack of mechanisms to hold countries accountable for minimum health standards lowers investment in public health.

These four structural challenges are visible in the revised International Health Regulations (IHR), approved by the World Health Organization (WHO) in 2005 and tested during the MERS, Zika, Ebola, and COVID-19 outbreaks. Although voluntary external evaluations of national capacity have taken place since 2009 in many countries, national progress in strengthening capacity has been patchy, uneven, and often poorly funded. Intercountry disparities in public health resources, capacities, and outcomes are difficult to resolve, even with legally binding international instruments such as the IHR.

Therefore, the WHO and IHR are intermediate steps toward a robust global framework to detect and respond to outbreaks with pandemic potential. Any real or perceived failures of this framework can be partially explained by the four structural challenges of governing the global commons.

Rights and Duties of States: Domestic or Foreign?

A major hurdle to greater health cooperation is the self-interest of nation-states and their political duty and desire to care for their citizens first. Therefore, a set of policy options, incentives, and disincentives should be implemented to encourage enlightened self-interest, enable collaboration, and allocate resources (like

vaccines) equitably. In large part, this would require persuading, encouraging, or educating nation-states on their duties to the global commons.

Resistance from nation-states against global collaboration can be addressed with a multi-year communications, advocacy, and lobbying campaign by international and domestic civil societies. The judicious involvement and moral leadership of the UN General Assembly, global powers like the United States, China, and the European Union, and major donors are crucial to break any impasse.

The term “building back better” applies not only to resilient health systems and pandemic responses but also to the entire global governance framework. Any reforms of the WHO or the global health governance framework do not exist in a vacuum and should therefore be accompanied by concurrent reforms in the global governance architecture writ large.

Power, Legitimacy, and Resources

The global health governance framework has many stakeholders, most laboring under a lack of power, legitimacy, and resources. Although the WHO is the preeminent and oldest actor, many new actors have emerged since the 1990s. Nonprofits (e.g., Bill & Melinda Gates Foundation and GAVI, the Vaccine Alliance), development banks (e.g., World Bank and International Monetary Fund), other UN agencies (e.g., UN Development Program and UN International Children’s Emergency Fund) and country-level development agencies (e.g., Japan International Cooperation Agency and U.S. Agency for International Development) play important roles in global health, with varying levels of power, influence, legitimacy, and resources.

Although deemed imperfect by many, the WHO is indispensable as the lead global health agency to coordinate this fragmented landscape. There are twenty-two functions in the WHO [constitution](#), and the first is “to act as the directing and coordinating authority on international health work.” (Pandemics only appear in seventh place, “to . . . eradicate epidemic, endemic and other diseases.”) This comprehensive mandate is aspirational and necessary, but not matched by funding realities.

The WHO is underfunded for the work it is expected to perform, and its funding mix is unreliable and often targeted to donor priorities. Assessed contributions from member states contribute only approximately 20 percent of the WHO’s budget, while 80 percent of WHO funding is from earmarked voluntary contributions, with charities or foundations being four of the [top ten funders](#). Therefore, priority-setting and resource allocation exercises could be supply-led rather than demand-led, leading to questions about conditionality of aid and aid dependence.

For the WHO to function as intended, other global health stakeholders need to demonstrate moral leadership and humility by accepting the first-among-equals role for the WHO. All stakeholders should work collaboratively to strengthen the WHO’s capacity, stature, and effectiveness. Only with a recognized leader can there be meaningful progress in a fragmented landscape.

Rising Nationalism

De-globalization is combining with rising nationalism to reduce global health collaboration. The rise of populist leaders and their protectionist-nationalist rhetoric and actions have created a rightward trend in many government policies worldwide. The existential threat of COVID-19 has accelerated these tendencies, manifested in countries monopolizing scarce medical equipment in the initial stages of the pandemic and signing solo deals with vaccine companies for preferential access, also known as vaccine nationalism.

A strategy to counter the harmful effects of rising nationalism should consider ways to bind nation-states in global decision-making processes. This would provide rational self-interest to participate more deeply in global decisions. This extremely difficult process should consider issues of equity and provide enough incentives for countries' cost-benefit analyses to favor more global collaboration.

For global health, countries and the WHO often work together to clarify roles and expectations, which could differ between countries. At the same time, the WHO could reciprocate by appropriately reforming its constitution, optimizing the semi-autonomy of its six regional offices, and providing a decolonized, bottoms-up approach to collaborative decision-making. Increasing global collaboration can take place only when nation-states have a stake in the global decision-making, instead of being left to implement top-down decisions.

Lack of Accountability

Policy options for the above structural challenges culminate in the trickiest final difficulty: how to assure accountability for national progress toward universal health coverage (UHC) and health-systems strengthening in general and pandemic preparedness in particular.

As in other areas of international relations, a combination of incentives, disincentives, and moral leadership are crucial to encourage or enforce adherence to minimum international standards. The IHR and Universal Periodic Review process for the Sustainable Development Goals are existing entry points to increase accountability for national health progress.

Some new tools that could be adapted include internationally binding health targets similar to the Paris accord's Nationally Determined Contributions, treaties such as the Framework Convention on Tobacco Control, a health pre-condition to approve any loans or bailouts from Bretton Woods institutions, or commitments from large asset managers like Blackrock and the California Public Employees' Retirement System to include health in their environmental, social, and governance investment criteria.

A reasonable place to start could also be minimum national health spending, modeled after NATO's rule of spending 2 percent of gross domestic product (GDP) on defense. The sources and uses of funds are as important as the amount, but this can be implemented by technocrats after the political decision is made to commit a certain percentage of GDP to public health-care systems.

Crucially, national governments and international institutions should build new sets of norms and standards in health, including incentives and disincentives, because traditional tools for errant countries, such as sanctions and boycotts, are not only ineffective but also dangerous if applied against a country that fails to meet health progress targets, as the citizens will suffer first from health underinvestment and then from sanctions.

Structural Reforms for WHO Are Overdue, and COVID-19 Is Accelerating the Urgency

The absence of deep reforms predates COVID-19, and various directors general have attempted structural WHO reforms with little success. The independent panel evaluating WHO's performance during the COVID-19 pandemic, chaired by Helen Clark and Ellen Johnson Sirleaf, could reveal some of the structural inadequacies of the global health framework related to the WHO.

It will likely also demonstrate how well-meaning and necessary new structures that are being set up in the wake of COVID-19 (e.g., the Access to COVID-19 Tools Accelerator and COVAX Facility for vaccines) are

only temporary Band-Aid resolutions for deeper problems. The scale and effects of COVID-19 require immediate resolutions to help overcome existing structural challenges, but they must be implemented in ways that feed into an enduring reform strategy. This is crucial as some of these emergency resolutions could continue even though their original mandate is time- and scope-limited.

The WHO, IHR, COVAX Facility, and other global health actors are imperfect health instruments that cannot carry the burden of structural gaps in the broader global governance framework. By keeping the four structural challenges at the forefront, governments and international institutions can devise innovative and realistic changes to existing global health governance framework.

With these changes, the multilateral system and national governments can better prevent, anticipate, detect, and respond to pandemics, including developing and equitably distributing vaccines and other health-care resources, keeping the world safe.

Think Global Health

The World Health Organization and Pandemic Politics

The good, the bad, and an ugly future for global health

by [David P. Fidler](#)

April 10, 2020

From the start, the World Health Organization (WHO) has been at the center of the COVID-19 storm—and the target of criticism. The pandemic and the controversies associated with it have created an immediate crisis for WHO as COVID-19 rages on. But it's also created a prospective crisis because the outbreak and political reactions to it will shape the future of WHO. The present back-and-forth between WHO's critics and defenders previews the coming tussle over how to repair global health governance and reform WHO in light of this disaster. Although the pandemic is not over, the pillory and praise of WHO are worth exploring now so that the coming tsunami of demands for change do not destroy the organization in order to save it.

WHO and the COVID-19 Pandemic

Much of the criticism of WHO asserts that it failed to exercise global health leadership and instead became a tool of Chinese politics, power, and propaganda. This critique holds that WHO had the ability to question China's handling of the outbreak in Wuhan so that the organization could better prepare the world for a dangerous disease—but that WHO failed to act decisively. The criticism raises questions about WHO's authority to challenge states during serious outbreaks for the good of global health. In contrast, praise for WHO often highlights how it has deployed scientific skills, epidemiological expertise, medical know-how, outbreak-response capacities, and global networks in helping China and other countries. These commendations emphasize

the imperative for WHO to work with governments in battling outbreaks.

In essence, WHO's critics and defenders are talking past each other. But both perspectives are core to the [International Health Regulations](#) (IHR), the leading international agreement on infectious diseases and other serious disease events adopted by WHO member states in 2005.

The IHR's success depends on WHO using its scientific, medical, and public health capabilities to help countries prevent, protect against, and respond to disease events. Deploying these capabilities tends not to generate political problems because the focus is on fighting outbreaks with measures based in science, medicine, and public health. This pattern appears again in the COVID-19 pandemic. WHO's [efforts](#) to advance development of coronavirus vaccines and therapeutics have not generated acrimony. The organization's [sharing of information](#) and its attempts to counter [online misinformation and disinformation](#) have earned widespread praise. The [medical and public health expertise](#) that WHO can offer countries to combat COVID-19 is appreciated. Its [warnings](#) about the pandemic's threat to low-income countries are acknowledged as important.

Authority of the World Health Organization to Take Action

International Health Regulations grant the ability to challenge how governments exercise sovereignty

Under IHR the World Health Organization Can

COLLECT	Disease-event information and verify it and share it
DECLARE	A public health emergency of international concern
REINFORCE	Requirement for trade/travel measure justification
MONITOR	Human rights outcomes of disease-control measures



The IHR also grants WHO the authority to take actions that can challenge how governments exercise sovereignty. First, the IHR authorizes WHO to collect disease-event information from non-governmental sources, seek verification from governments about such information, and, if necessary, share the information with other states. Second, the IHR grants the WHO director-general the power to declare a public health emergency of international concern, even if the state experiencing the outbreak objects. Third, the IHR gives WHO the authority to reinforce the requirement that a state party shall provide the scientific and public health justification for trade or travel restrictions that do not conform to WHO recommendations or accepted disease-control measures. Fourth, the IHR requires states parties to protect human rights when managing disease events—protections for which WHO, as a champion of a [human-rights approach to health](#), is a leading guardian.

Criticism of WHO during the COVID-19 pandemic has emerged exactly in the context of these authorities. Claims that WHO turned a blind eye to China's dissembling about its outbreak suggest that WHO failed to act on information it had from other sources, including the failure to share that information with other countries. Critics pilloried WHO Director-General Tedros Adhanom Ghebreyesus for declaring the COVID-19 outbreak in China a public health emergency of international concern at a time and in a manner that appeared indecisive and deferential to the Chinese government. The explosion of [travel restrictions](#) that countries implemented to counter COVID-19 prompted [arguments](#) that these restrictions violated the IHR, violations that the WHO did not probe despite having authority to do so. [Complaints](#) also arose about WHO's silence in the face of the human rights consequences of harsh government responses, such as mandatory quarantine and isolation measures.

A Tale of Two Decades: WHO and the IHR

Explaining why criticism and praise of WHO's performance focus on different aspects of the IHR requires understanding how perspectives at

WHO and among global health experts about the role of these regulations in global health governance have shifted. The initial decade of this century witnessed astonishing changes in global health that reflected heightened political interest from state and non-state actors, policy and governance innovation, and unprecedented levels of funding. These changes include the transformation of international law on infectious diseases accomplished with the adoption of the IHR in 2005.

WHO leadership during the SARS pandemic in 2003 made this transformation possible. The WHO Director-General, Gro Brundtland, confronted China over its SARS outbreak and, without approval from the countries concerned, issued warnings against travel to SARS-affected places. Brundtland acted without authority to take these steps. In addition, WHO took the lead in efforts to advance scientific understanding of the SARS coronavirus, develop public health strategies, and establish clinical treatment protocols. In adopting the IHR in the aftermath of SARS, WHO member states gave WHO unprecedented authority *vis-à-vis* state sovereignty and expanded the need for WHO's scientific, medical, and public health capabilities.

The first test after the IHR entered into force in 2007 was the H1N1 influenza pandemic in 2009. The WHO Director-General, Margaret Chan, declared the world's first public health emergency of international concern and issued recommendations that, among other things, advised against trade and travel measures. WHO coordinated scientific, medical, and public health efforts to understand the H1N1 virus, share information, treat people, and develop a vaccine. Post-pandemic [analysis](#) identified problems with WHO's performance and the IHR's functioning, but, overall, the response underscored the importance of WHO's leadership and functional capabilities and the IHR's role in global health governance.

However, controversies about WHO's leadership, the organization's capabilities, and the IHR dominated the conversation over the next decade. Concerns began after the H1N1 pandemic as WHO and its member states struggled from the damage done by the Great Recession.

Facing a financial crisis, WHO cut the budget for its outbreak preparedness and response capacities, and distracted by economic turmoil, member states showed little interest in the recommendations made after the H1N1 pandemic to strengthen WHO and bolster the IHR.

Then came the Ebola outbreak in West Africa in 2014, which was a disaster for WHO and the IHR. WHO's response was so bad that UN Secretary-General Ban Ki-moon created an *ad hoc* emergency response effort. WHO Director-General Chan failed to act on information that WHO had received from non-governmental sources, did not challenge governments that wanted to keep the outbreak quiet, and only declared a public health emergency of international concern after the epidemic was already a crisis. Numerous governments flouted WHO recommendations by enacting travel restrictions, and the crisis exposed poor IHR implementation around the world. Reviews of the Ebola outbreak criticized WHO's performance and recommended that the organization exercise political leadership under the IHR and strengthen its capabilities to respond to serious disease events.

The next major crisis was an Ebola outbreak in the Democratic Republic of the Congo that started in late 2018. WHO's response to this outbreak demonstrated that it had re-invigorated its functional capacities. Indeed, the Democratic Republic of the Congo, with WHO's help, brought the outbreak under control in difficult circumstances during 2019, with an anticipated declaration of the end of the outbreak expected this month.

However, WHO's response to the Ebola outbreak in the Democratic Republic of the Congo exhibited resistance to exercising the power to declare a public health emergency under the IHR.

A controversy emerged when the emergency committee—established under the IHR to advise the director-general on whether to declare a public health emergency—repeatedly concluded that the worsening outbreak did not qualify as a public health emergency of international concern. For many, the emergency committee's reasoning, which Director-General Tedros accepted, did not accord with the IHR. Director-General Tedros eventually declared a public health emergency

of international concern—but only after the outbreak became even more dangerous.

Lost in this back-and-forth over the IHR was something important—global health leaders expressed, and based their actions on, skepticism about key aspects of the IHR. The outbreak in the Democratic Republic of the Congo increased interest in the director-general having more options than the “declaration, no declaration” choice that the IHR provides. The emergency committee’s assertions that countries would implement unjustified measures after a declaration of a public health emergency of international concern suggested the committee believed that the exercise of this authority would do more harm than good. The committee also clearly had no confidence in the IHR rules designed to address problematic trade and travel measures imposed in response to outbreaks. In the end, the controversies about the IHR distracted from WHO’s impressive on-the-ground efforts to help the Democratic Republic of the Congo overcome Ebola.

This Pandemic was Politicized Before it Started

Understanding WHO’s behavior over the past decade helps us see that, before the novel coronavirus emerged in Wuhan, WHO was predisposed for global health reasons to exhibit leadership through deployment of its functional capabilities rather than by exercising authority it had to challenge governments politically. Leaving aside this strategy’s merits, the approach put WHO in a difficult position with COVID-19 because the disease emerged into a context that was already hyper-politicized within and beyond China.

Well before the Wuhan outbreak, China had imposed at home and promoted abroad a version of sovereignty intolerant of domestic dissent and foreign criticism. China’s perspective on sovereignty constituted one of the most important features of the country’s rise to great-power status and its global ambitions. For China, the outbreak’s domestic and international implications were so serious that the response, including WHO’s involvement, had to reflect China’s position on sovereignty and its global stature.

Unsurprisingly, the official narratives from the Chinese government and WHO about the outbreak response scrupulously reflected China's political requirements and calculations. This outcome reflects the convergence of WHO's non-confrontational approach and China's intolerance of any divergence from the party line. This convergence meant China's political needs overwhelmed WHO's desire to avoid politics in working with China in the interests of global health, leaving the organization vulnerable to questions about its interactions with China.

Other countries—especially the United States—that are wary of China's expanding power and intentions were also primed to interpret this disease event through a political lens. From the beginning, commentary in the United States framed the epidemic in China in geopolitical terms, used it to blame China's political leaders and system for the tragedy, and faulted WHO for complicity with China's perceived deception and propaganda. Such criticism implies that WHO's interactions with China should have reflected U.S. political perspectives rather than China's. The lack of convergence between U.S. interests and WHO's actions left WHO exposed to attacks that intensified as the United States struggled with COVID-19 once it reached American shores.

The Westphalian Virus

Once upon a time, I called the coronavirus behind the SARS pandemic the world's first "[post-Westphalian pathogen](#)." In the wake of SARS, WHO member states empowered WHO to challenge sovereignty—the centerpiece of the state-centric, "Westphalian" international order—in the interests of protecting global health. Today, in the COVID-19 pandemic, the world's most powerful countries are demanding that WHO follow their respective sovereign interests for reasons that have little to do with global health. WHO finds itself in this predicament despite, over the last decade, defining its leadership in global health more through its scientific, medical, and public health capabilities than its authority to challenge states politically under the IHR.

We do not know whether WHO's functional contributions to the COVID-19 fight will protect it from recriminations about its interactions with

China when the pandemic ends and the world evaluates this disaster. The manner in which China and the United States politicized COVID-19 for geopolitical purposes bodes ill for international health cooperation. What happened in this pandemic is a harbinger for what WHO will confront and have to navigate over the next decade. Further, balance-of-power politics will shape WHO's future as much or more than the well-intentioned recommendations that post-pandemic reviews by experts will produce.

In this sense, COVID-19 has not changed the world as much as clarified how much the world has changed since the first decade of this century. Perhaps, then, the acrimony over what to call the novel coronavirus behind the pandemic should be ended by dubbing it the "Westphalian virus."

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Think Global Health

COVID-19 Is Smoke and Mirrors— What Matters Is International Law

Health is political, and the best political choice at the moment would be to strengthen WHO's legal power—not destroy it

by [Ilona Kickbusch](#)

April 15, 2020

For the World Health Organization (WHO) to be subject to political pressure by its member states is nothing new. Geopolitics are part of its daily bread, and they are present at every single meeting. Its directors general must be highly skilled diplomats, with great capacity to tolerate being the scapegoat of member state attacks, which are usually staged for a national audience in the context of geopolitical conflicts or commercial interests linked to the domestic economy. To be clear, there are many mistakes the WHO has made over the years, there are many weaknesses in the way it is organized, and to the extent that sometimes it appears highly dysfunctional—it actually is. But despite all the rhetoric and constant piling on the WHO for inaction, many member states actually want a weak WHO. That is exactly why they don't want to pay for it.

The WHO's technical staff are supposed to be nonpolitical, as could recently be witnessed as one of them was pushed on the political issue of Taiwan. They are disease experts and ill-equipped to deal with the intricacies of global diplomacy. This allows the WHO to be pushed around by its member states—and in the age of the rapid news cycle and social media, it becomes an especially easy target because its nonpolitical makeup does not allow it to fight back and criticize individual member states in public. So rarely has the WHO ever spoken out publicly against one of its members that when it does happen, everyone remembers it and sees it as an extraordinary show of courage. Former WHO Director General Gro Harlem Brundtland during the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 called out China and the City of Toronto for not acting responsibly. The expectation is normally that WHO does not blame

countries in public but tries to get them to work together. The present political climate is not made for that approach.

Seventy-Two Years of Crisis, Reform, Reinvent, Repeat

The idealistic architects of the World Health Organization in 1945 wanted to protect the new organization from political machinations as much as possible—very much along the lines that nongovernmental organizations would like to see the WHO today. They proposed that the new “technical agency on health” be a part of the United Nations but situated in Geneva, far from New York, where the political battles at the UN would be fought. The founders had lived through the politicization of health in the League of Nations, before and during World War II. They wanted no repeat of those failures.

This new organization was to work with all countries—regardless of their political systems—and motivate them to leave politics aside to work together for one goal only, as stated in its constitution, “the highest achievable level of health.” The way the WHO is set up expects it to work on consensus, much of it achieved in longwinded negotiations in long-lasting committees with experts and member state representatives, supported by exhausted staff. Today, in the thick of political fights around COVID-19 and the WHO’s role, the euphoria of the immediate postwar years of a science-based organization free of politics seems a very distant memory. But the promise of a politically aloof WHO faded almost as soon as it was out of the box. The WHO's first Director General Brock Chisholm famously refused reelection because of the political pressures put on him even then.

But the founders of the WHO also knew about the critical role of law in public health. Indeed, complementary to its broad mandate, the constitution gives the organization extraordinary power: The WHO can promote and adopt treaties (Article 19), and it has at its disposal an innovative international legal mechanism in the form of binding regulations (Article 21). It is this power that is the thorn in the side of those who fight to close down the organization, as they have done for decades using every entry point possible. Article 19 states that the World Health Assembly (WHA) “shall have the authority to adopt conventions and agreements with respect to any matter within the competence of the Organization.” The WHO has done so in many areas critical for public

health but perhaps has never been attacked so consistently as when it started to give the prevention of noncommunicable diseases a higher priority.

The Fight Over COVID-19 Is Smoke and Mirrors

The real war is not about the WHO's inaction but rather its action—specifically its exercised power to set international rules, like the Framework Convention on Tobacco Control; its list of essential medicines; and its International Code of Marketing of Breastmilk Substitutes, restrictions for commercial companies.

The power enshrined in the WHO constitution is political dynamite. It allows the WHO, among other things, to set standards for the safety, purity, potency, advertising, and labelling of biologicals, pharmaceuticals, vaccines, and similar products moving in international commerce. This was written in 1946, long before globalization, and today some member states criticize the organization for not using the power inherent in these articles enough. But often the loudest voices of complaint come from the WHO's many critics who perceive it going much too far. Just think, if you were to close down the WHO, you could at the same time get rid of all the excruciatingly detailed normative work the organization does in order to protect health like standards in air pollution and drinking water or recommendations on sexual and reproductive health and rights. Your global industry would no longer be subject to rules set by a majority of the world's states in the World Health Assembly, the decision-making body of the WHO.

Most of the critics of the WHO—from any political spectrum—forget that it is governed by its member states—one country one vote. It started in 1948 with 56 states, now there are 194 and 2 territories. These countries decide on policies and budgets in the annual World Health Assembly, and they elect the director general every five years. Depending on the issues at hand, negotiations are left to the health ministries of member states—but the more political a negotiation is, the more the instructions come instead from countries' ministries of foreign affairs. In some cases the negotiations are taken over by the professional diplomats. But health care has become one of the largest industries in the world. It encompasses major business interests (from pharmaceutical manufacturers to the tobacco or sugar industry). Health care overlaps with significant security interests. But

therein lies the problem: One can't fully trust health ministers to follow instructions that don't put health first. If you don't want the WHO to recommend a sugar tax, then do not let your health minister negotiate. The risk when you let your health minister negotiate is that the decision might be fact- and science-based and not in the interest of your sugar industry.

We Pay—So We Should Say

As in all walks of life, those that pay the most often want to call the shots. That has been the longstanding mindset of U.S. political representatives and commentators in relation to the United Nations. Countries pay their dues to the WHO through assessed contributions calculated by the UN budgetary office. The United States has always been the largest contributor, with assessed and voluntary contributions together representing approximately 17 percent of the WHO's total revenue in the 2016–17 biennium. While defending and promoting its leadership role in global health, the United States has always worked to keep the WHO budget as low as possible and has exerted tough political pressure—it has threatened to leave before. More passively, the United States exerts subtle influence to allow only nominal budget growth and usually pays its contributions as late as possible to exert additional pressure. As is often quoted, the budget of WHO is comparable in size to the University Hospital of Geneva. That's how cheaply we want our global health.

But in the current context money no longer automatically implies power, and the will to follow U.S. leadership is waning. Some countries are even welcoming (behind closed doors) a recalculation of contributions so as to politically trim down U.S. influence and make it more like any other member. Would the United States be able to live with that? In the past it could use its power, money, and influence to bypass the WHO and create new global health organizations—such as The Global Fund—through which it maintained its key influence as the major donor. That surely is the idea behind creating a new organization on health security that has been floated by members of the Donald J. Trump administration as well as some academics—we pay, and you accept our understanding of health security. The political argument always sounds the same: The WHO is not up to task, it has not reformed enough, its leadership is bad, it is subject to the wrong political influence, does not spend our money well; in short: It does not do as we say. These kinds of attacks combined with budget cuts turn into self-fulfilling prophecies—one reason the WHO did not respond

adequately to the 2014–15 Ebola outbreak was because it had to let many experienced outbreak experts go due to budget cuts. Echoes of this can be heard in the situation in the United States right now in relation to COVID-19.

But It's Not Just the Money That Talks

Today the WHO has 194 member states, and with globalization, geopolitical shifts, and a changing WHO, the lines of influence have become more complicated. Many U.S.-based global health experts are disoriented and upset because many countries no longer trust the United States to want the common good. This is a real loss to global health. China and India have gained power to shape the global health agenda since health—at the instigation of Germany—has become a regular agenda item at the Group of Twenty (G20). They also control globalized supply chains, which have made many of the Western countries dependent on them for many medical supplies, as the COVID-19 crisis has revealed with great clarity. China and India have also significantly increased their scientific research capacities. They are leaders in digital health, and they use the multilateral system for health to test out their political clout.

The middle powers no longer just align as a bloc but build careful, shifting alliances based on their individual country interests and use the multilateral system to practice what is called thematic diplomacy. Health plays a central role in this approach. Complicating things further, the poor countries want a strong WHO to help them address their health needs, many European Countries want a WHO based on its normative function—mirroring the legalistic approach of the European Union—and the civil society wants the independent organization the founders envisaged. But something else has changed as well: the director general has become more powerful—since 2017 they have been a regular attendee of the Group of Seven (G7) and G20 meetings. Current Director General Tedros Adhanom Ghebreyesus is in regular contact with many heads of state and government—an interaction that has increased dramatically during the coronavirus crisis. This is a different base from which to counteract American attacks.

Indeed, the general lack of support for the UN system by the United States has motivated a group of countries to create an “alliance for

multilateralism”—and the U.S. attacks on the WHO are the subject of their very next meeting.

The German president and foreign minister have already set the tone. This is not a war, they say—it is a challenge to work together. Finally, the African countries fought hard for their first director general, which they achieved with the election of Director General Tedros, who is from Ethiopia and was elected by an overwhelming majority. This is a secret ballot, but indications are relatively clear that in the end the United States voted for Tedros as well. His handling of the Ebola crisis in the Democratic Republic of Congo—which began in 2014 and has now been successfully contained—is a source of pride for African countries. Most likely, they will fight back any actual or perceived attacks on him no matter from which quarter—many of which they also interpret as being racist.

Geopolitics and Crisis Are Nothing New for the WHO

The WHO has regularly been impacted by tectonic shifts—decolonization; the Cold War and its end; the HIV/AIDS crisis; the financial crisis; the short period of American hegemony; the SARS, Zika, and two Ebola Crises—and has survived them all despite facing the regular question of its own survival. From its outset in post–World War II, the WHO walked along the edge of a razor blade, attacked both by representatives of the United States and the Soviet Union for supporting one worldview over the other. While the communist countries maintained that the WHO had surrendered to the imperialistic United States, supporters of U.S. Senator Joseph McCarthy accused the WHO of being infiltrated by those very same communists. This game seems to be now playing out all over again between the United States and China.

Early on, the Soviet Union and a group of other communist countries left the WHO not to return until 1956, after the death of Joseph Stalin. Throughout the Cold War every WHO resolution required careful crafting so as not to be understood as a commitment to either privatizing or socializing medicine. And even in 2003—long after the demise of the Soviet Union—the negotiations on the International Health Regulations ground to a halt over language that failed to reflect the importance of the Kaliningrad Corridor for Russia.

For the WHO, geopolitics can mean danger and opportunity, and the present attacks by the United States can play out in many ways. Between 1960 and 1965, twenty-four newly independent African countries joined the United Nations, and the WHO's then Director General Halfdan Mahler used the short window of opportunity in the 1970s—with the help of the developing countries—to set a new agenda based on the concept of Health for All, linking health to the equity agenda and to the call of the Brandt Commission for a new economic order. At the beginning of this century, Director General Gro Harlem Brundtland used her one term to launch two major international agreements: The Framework Convention on Tobacco Control and the International Health Regulations, following the SARS crisis. She also made health an indispensable component of development policies—laying the base for the strong role health plays in the UN's Sustainable Development Goals.

Where to Go From Here?

The WHO reformed its work in preparedness and response after its failure to respond in a timely manner to the Ebola outbreak in 2014–15—it is the member states that have not fulfilled their commitments to the International Health Regulations both politically and financially. The critical reviews in 2015 already highlighted the weaknesses of the International Health Regulations but member states were not ready to reform them; indeed, already then, the fear was high that opening the instrument might make it weaker than before. This might hold even more in the present geopolitical environment. But with all the political problems currently faced by countries around the preparedness and information requirements and the declaration of a Public Health Emergency of International Concern (a new mechanism introduced by the IHR) reforming the International Health Regulations probably cannot and should not be avoided.

Maybe there is a cosmopolitan moment where a stronger and better funded WHO will be seen to be essential for the future of global health by a critical group of countries. That was the message conveyed in the G20 virtual meeting on March 26 in their statement. “We fully support and commit to further strengthen the WHO's mandate in coordinating the international fight against the pandemic.”

The stony path toward a stronger international agreement on preparedness and response, to a revised and strengthened set of International Health Regulations, and toward a strong accountability mechanism must be trod. The new legal instrument could and should hold both the WHO and countries to account—that is exactly what the WHO constitution allows for. The director general says frequently that health is a political choice. Many of the countries made the wrong political choices in their responses to COVID-19—indeed they made the wrong choices much earlier when they refused to invest in preparedness and in the WHO. In the context of COVID-19 we constantly hear that we cannot go back to business as usual. That applies to establishing a well-funded system of global health governance as well—and one with teeth. Countries have the political choice right now to seriously strengthen the WHO, its funding, and its legal power, or to destroy one of the most important agencies in the UN system.

Ilona Kickbusch is a member of the Global Preparedness Monitoring Board (GPMB) established by the WHO and the World Bank. She is founding director and chair of the advisory group of the Global Health Centre at the Graduate Institute of International and Development Studies Geneva.

Independent Task Force Report No. 78

Improving Pandemic Preparedness

Lessons From COVID-19

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EXECUTIVE SUMMARY

The United States and the world were caught unprepared by the COVID-19 pandemic despite decades of warnings of the threat of global pandemics and years of international planning. The failure to adequately fund and execute these plans has exacted a heavy human and economic price. Hundreds of thousands of lives have already been lost, and the global economy is in the midst of a painful contraction. The crisis—the greatest international public health emergency in more than a century—is not over. It is not too early, however, to begin distilling lessons from this painful experience so that the United States and the world are better positioned to cope with potential future waves of the current pandemic and to avoid disaster when the next one strikes, which it surely will.

This CFR-sponsored Independent Task Force report seeks to do just that, framing pandemic disease as a stark threat to global and national security that neither the United States nor the world can afford to ignore again. It argues that future pandemic threats are inevitable and possibly imminent; policymakers should prepare for them and identify what has gone wrong in the U.S. and multilateral response. One of the most important lessons of this pandemic is that preparation and early execution are essential for detecting, containing, and rapidly responding to and mitigating the spread of potentially dangerous emerging infectious diseases. As harmful as this coronavirus has been, a novel influenza could be even worse, transmitting even more easily, killing millions more people, and doing even more damage to societies and economies alike.

This Task Force proposes a robust strategy consisting of critical institutional reforms and policy innovations to help the United States and the world perform better. Although there is no substitute for

effective political leadership, the recommendations proposed here would if implemented place the nation and the world on a firmer footing to confront humanity's next microbial foe.

The Task Force presents its findings grouped into three sections: the inevitability of pandemics and the logic of preparedness; an assessment of the global response to COVID-19, including the performance of the World Health Organization (WHO), multilateral forums, and the main international legal agreement governing pandemic disease; and the performance of the United States, while also drawing lessons from other countries, including several whose outcomes contrast favorably with the U.S. experience.

Preparation can mitigate the effects of pandemics.

- Pandemics are not random events. Outbreaks of well-known infections and new diseases occur regularly. These outbreaks can spread easily on this interconnected planet and impose significant human and economic costs, making preparedness imperative. Since the 1990s, successive U.S. administrations, as well as other governments and international organizations, have acknowledged this reality. In the United States, this recognition has been reflected in multiple national security strategies and intelligence assessments, blue-ribbon commissions, and simulation exercises that anticipated many of the challenges the world encountered in 2020.
- The Task Force finds that U.S. and global efforts to prepare for the inevitability of pandemics provided the illusion—but not the reality—of preparedness. Despite a succession of previous global public health

emergencies, the United States and other governments failed to invest adequately in prevention, detection, and response capabilities to protect the populations most vulnerable to infectious disease outbreaks, or to fulfill their multilateral obligations to international organizations and to one another. The COVID-19 pandemic laid bare these failures in global and U.S. domestic preparedness and implementation, exposing important lessons that had not been learned, critical initiatives left unfunded, and solemn obligations that had not been met.

- The Task Force finds that early action and investment in preparedness have mattered in this pandemic. In the early stages, a diverse group of nations was prepared to respond rapidly and aggressively to COVID-19 with public health fundamentals, including testing, contact tracing, isolating, and clear, science-based risk communication to the public. Others, including the United States, were not.

Multiple obstacles thwarted an effective multilateral response.

- The pandemic revealed troubling shortcomings in multilateral arrangements for global health security, including a lack of coordination across nations and a breakdown of compliance with established norms and international agreements, notably the International Health Regulations (IHR), the main international agreement governing dangerous disease events.
- The Task Force finds that primary responsibility for these weaknesses can be laid at the feet of national governments, which remain torn between their desire for effective global health governance and their resistance to expanding the authorities, funding, and capacities of WHO and other international agencies. Rising geopolitical competition—particularly between the United States and China—further frustrated multilateral cooperation at the Group of Twenty (G20), the Group of Seven (G7), and the UN Security Council.
- The Task Force assesses China's compliance with its reporting and information-sharing obligations under IHR as at best flawed, particularly in the early days of the outbreak, when transparency was most important. As in other recent outbreaks, WHO prioritized solidarity in its international crisis response, proving hesitant to criticize China publicly over these flaws and to declare a public health emergency of international concern (PHEIC) over China's objections.

- The Task Force finds that WHO has the mandate and expertise to lead global epidemic and pandemic response but that it is beleaguered, overstretched, and underfunded. WHO prompted China to notify the world of the outbreak of the SARS-CoV-2 virus and has successfully supported international coordination of many technical aspects of the COVID-19 challenge, particularly in low-income nations. Yet WHO also cannot ensure that many member states comply with IHR obligations and fails to constructively coordinate with the private sector. The WHO Emergencies Program is under-resourced and lacks surge capacity. The COVID-19 experience confirms that WHO has an important leadership role in the health aspects of public health emergencies but lacks the geopolitical heft to address the broader diplomatic, economic, and security implications of pandemics. The U.S. decision to pull out of WHO, if it occurs as scheduled in July 2021, threatens to make the agency's leadership role even more precarious and the United States even more vulnerable to future pandemics.

The U.S. performance in this pandemic was deeply flawed.

- The Task Force assesses the U.S. performance during the COVID-19 pandemic as deeply flawed. The United States has declared pandemics to be a national security threat but has not acted or organized itself accordingly. The federal government lacks a strong focal point and expertise at the White House for ensuring pandemic readiness and coordinating an effective response. Despite intelligence and public health warnings of an imminent pandemic, the United States did not act quickly enough in mobilizing a coherent nationwide response, wasting precious weeks that could otherwise have been used to implement a nationwide strategy and capacity for testing and contact tracing to identify new infections and reduce their spread. These failures had grievous economic and health consequences, forcing states, localities, and employers to resort to blunt interventions, including imposing severe limits on human movement and shuttering businesses and public places. Without clear federal guidance, many states relaxed these public health measures prematurely, resulting in new spikes.
- The Task Force finds that the United States compounded these early mistakes with other unforced errors on public health risk communication. Elected U.S. officials, including President Donald J. Trump himself, often fell short as communicators, failing to offer the American people clear, reliable, and science-based information about the risk of

infection; to adequately defend public health officials against harassment and personal attacks; and to release timely guidance on the utility of the public health measures implemented to combat the spread of the disease.

- The pandemic also exposed the nation's inadequate investment in state and local health systems, many of which were quickly overwhelmed. The failure to maintain an adequate Strategic National Stockpile (SNS)—and to clarify the rules governing its use—led to shortages of essential medical supplies and competition among states over scarce medical equipment. More generally, COVID-19 revealed tremendous confusion over the respective responsibilities of federal, state, local, and tribal governments, resulting in blame-shifting and an incoherent U.S. approach to this public health emergency.
- The COVID-19 pandemic has also revealed the lack of coordination in U.S. and global pandemic preparedness and response in three areas. It has illustrated the risks of overdependence on a single nation, such as China, for essential medicines and medical equipment in a global pandemic. It has exposed the lack of a multilateral mechanism to encourage the joint development and globally equitable distribution of lifesaving vaccines, therapeutics, and diagnostics. Finally, it has revealed the limitations of existing national and global systems of epidemic threat surveillance and assessment, which left public health officials and researchers without access to timely data.

The coronavirus pandemic has spread to nearly every nation, caused a global economic recession, and, as of August 31, 2020, killed more than 850,000 people worldwide. As harmful as COVID-19 has been, a future pandemic of novel influenza could be even more catastrophic, killing millions more people and destabilizing governments and economies alike. To prevent that possibility, the United States and other nations need to learn from their recent, costly mistakes.

This Task Force organizes its recommendations into four sections. We first outline a comprehensive and coordinated strategy and propose new infrastructure and investments to advance pandemic preparedness in the United States and abroad. We then organize the remaining recommendations for responding to the hard lessons learned in this pandemic according to the three fundamental elements of pandemic preparedness: prevention, detection, and response.

Treat pandemic preparedness as a serious national and global security threat—and invest accordingly.

- The United States should finally treat pandemics as a serious national security and economic threat by translating its rhetoric into concrete action. The Task Force recommends that the president designate a White House senior official as a focal point for global health, including for pandemic preparedness and response. The secretary of state should designate an ambassador-level official to help coordinate the U.S. diplomatic response to international public health emergencies, in support of the Department of Health and Human Services (HHS), including through U.S. chiefs of mission abroad. The U.S. government should also initiate a review of the responsibilities for pandemic preparedness and response among public health authorities at the federal, state, local, and tribal level, so that U.S. federalism is an asset rather than a liability to achieving U.S. health security.
- In parallel with these domestic reforms, the Task Force recommends that the United States revamp its current approach to pandemic preparedness and response internationally. To start, the United States should remain a member of WHO, working with other nations to strengthen it from within. The UN agency is not a perfect institution, but no multilateral substitute exists to advance U.S. interests in the current pandemic or the next one. The United States should collaborate with other member states to ensure adequate, dedicated funding for WHO's Health Emergencies Program.
- To coordinate diplomatic, economic, and security responses to future pandemics and additional waves of the current one, the Task Force recommends that the United Nations establish a permanent global health security coordinator. This UN coordinator, reporting directly to the UN secretary-general, should be charged with leading a coherent response to global health threats across the UN system, supporting any activity by the Security Council in pandemic response, and maintaining direct links to the leadership of the International Monetary Fund (IMF), World Bank, World Trade Organization (WTO), and other relevant multilateral forums, such as the G20 and G7. WHO should maintain its lead role in mobilizing UN and international collaboration on the health-related aspects of pandemic emergencies.

- UN infrastructure alone will not resolve the geopolitical gridlock that has undermined effective pandemic preparedness and response, nor will it help mobilize more private-sector participation. Accordingly, this Task Force recommends that the United States spearhead the establishment of a Global Health Security Coordination Committee to better mobilize and harmonize broader multilateral economic and emergency responses to pandemic threats. Such a flexible coalition, based on a core of like-minded states but open to critical input from civil society and private-sector actors, would allow national ministers to focus on practical matters, such as coordinating trade policies on essential medical supplies; removing barriers to scientific and technical collaboration; increasing equitable access to vaccines, diagnostics, and therapeutics; and working with international financial institutions to assist hard-hit countries and to help incentivize countries to invest in future pandemic preparedness. A senior WHO representative and the UN special coordinator should serve as technical advisors to the committee.
- The Task Force calls on the executive branch to request and Congress to appropriate funds for a comprehensive health security budget that is commensurate with the pandemic threats the United States faces and that reflects the professional judgment of U.S. public health officials. This federal funding should include increased money for global and domestic epidemiological threat surveillance and assessment, pandemic preparedness at state and local hospitals, the SNS, assistance for vulnerable countries around the world, and pandemic response capabilities of WHO and other essential multilateral agencies, and it should exempt critical budget line items from any future budget caps and sequesters.
- The Task Force further recommends that Congress appoint an independent commission to review the Centers for Disease Control and Prevention's (CDC) record during the initial months of the pandemic, identify obstacles to the CDC's effectiveness, and consider how it could do better in the future, including on surveillance, data transparency, and capacity to scale up nationwide testing and tracing.

Adopt strategies for better prevention.

- The leading metrics of pandemic preparedness have not been good predictors of performance during the current pandemic, and many countries were not ready to implement the capacities they had. It is often said

that what gets measured gets done, but the opposite is also true. Countries need to understand where their preparedness gaps are in order to rectify them to better prevent future outbreaks from evolving into pandemics. The Task Force recommends that the United States work with WHO, the Africa CDC, and other international partners to revamp national preparedness capacity assessments and pair them with strategies to promote readiness and implementation. The objective should be to generate community mitigation guidelines and pandemic response triggers so that national and local policymakers have a roadmap for early, targeted, and coordinated implementation of surveillance, non-pharmaceutical interventions, and measures to reinforce medical and public health capacities.

- This pandemic has exposed the failure of the United States to invest adequately in the public health of the U.S. population or to provide sufficient protections to marginalized, at-risk, and underserved groups to prevent outbreaks from accelerating into epidemics. The Task Force recommends that the United States adopt a national policy establishing and enforcing pandemic readiness standards for hospitals and health systems and ensuring that these institutions respect and promote health equity. The CDC, in collaboration with states and localities, should make it standard practice to collect and share data on the vulnerability of specific populations, most notably Black Americans, Native Americans, Latinx Americans, low-income families, and the elderly, to pandemic disease. The U.S. federal, state, and local governments should craft strategies, programs, budgets, and plans for targeted public health investments that increase the resilience of these communities, as well as nursing home residents and essential workers. The Task Force considers this a matter of both social justice and global and U.S. health security.

Improve detection of epidemic threats.

- COVID-19 has revealed the downsides of relying on a weak IHR system that does not motivate governments to promptly report and share timely, relevant information about public health risks. The Task Force recommends that WHO member states establish an IHR review conference to discuss how to improve member states' compliance with IHR, increase information sharing and transparency, and enhance the competence and consistency of WHO's Emergency Committee when advising on the declaration of PHEICs.

- The current pandemic also demonstrates the inherent vulnerability of an international system of pandemic detection that relies so heavily on the transparency, judgment, and discretion of individual national governments. The Task Force thus recommends that the United States work with other governments and civil society partners to build and integrate national and global epidemic surveillance systems. This voluntary, international sentinel surveillance network should incentivize health-care facilities around the world to regularly share hospitalization data, using anonymized patient information, to improve the availability and reliability of early epidemic threat surveillance and to enable rapid identification, characterization, and tracking of emerging infectious diseases. This data should feed into an integrated global disease surveillance data and assessment platform, created under the auspices of the Health Security Coordination Committee. It should share the results of its assessments with participating government agencies and relevant nongovernmental organizations and raise the alarm over any unusual trends with the UN coordinator, WHO, and the general public. Within the United States, the CDC is the logical home for such a consolidated epidemic threat surveillance and forecasting office.

Strengthen U.S. and global pandemic response.

- No factor undercut the early U.S. response to COVID-19 more than the lack of a comprehensive, nationwide strategy and capability for testing, tracing, and isolation. To avoid a reoccurrence of those failures in future pandemics, the Task Force recommends that the United States immediately develop and adequately fund a coherent national strategy and capability to support testing and contact tracing by states and localities, following CDC guidance, that can be rapidly scaled up in any public health emergency, including by leveraging the latest digital technologies, incentivizing research and development of diagnostics such as low-cost rapid tests, and training tens of thousands of contact tracers.
- The United States cannot afford to have public health messages muddled or discounted because they are couched in partisan messaging that seeks to downplay or exaggerate the dangers the country faces or the precautions needed to address these threats. The Task Force calls on all U.S. public officials to accept, as a critical dimension of successful pandemic preparedness and a fundamental obligation of their positions, the responsibility of communicating with the American people in a clear, transparent, and science-based manner. This should include

increased reliance on public health experts—including from the CDC, HHS, National Institutes of Health, Food and Drug Administration (FDA), and other technical agencies—to provide briefings and timely guidance to the American people.

- To ensure that the nation possesses sufficient quantities of essential medicines and equipment in an urgent public health emergency (whether a pandemic or bioterror event), the executive branch and Congress should work together to ensure that the Strategic National Stockpile is appropriately resourced and stocked for future pandemics, and that there is no confusion between federal and state governments as to its purpose. In an extended pandemic crisis, the SNS system should be prepared to act as a central purchasing agent on behalf of state governments.
- In parallel with this step, the United States should use incentives to diversify its global supply chains of critical medical supplies and protective equipment for resilience and reliability, without unduly distorting international trade and running afoul of WTO commitments. This approach could include pursuing emergency sharing arrangements among close U.S. partners and allies and strengthening multilateral regulatory cooperation among major producer nations to ensure common standards and quality control, especially during emergencies. The FDA should produce regular updates on supply chain vulnerabilities.
- Finally, the Task Force urges the United States to support multilateral mechanisms to develop, manufacture, allocate, and deliver COVID-19 vaccines, therapeutics, and diagnostics in a globally fair manner consistent with public health needs. Absent such global coordination, countries have been bidding against one another, driving up the price of vaccines and related materials. The resulting arms race threatens to prolong the pandemic, generate resentment against vaccine-hoarding nations, and undermine U.S. economic, diplomatic, and strategic interests. The Task Force recommends that the United States work with political leaders from countries representing the majority of global vaccine-manufacturing capacity to support the Coalition for Epidemic Preparedness Innovations (CEPI); Gavi, the Vaccine Alliance; and WHO in developing a globally fair allocation system that can be expanded for potential use in future pandemics.

The only certain thing is that when this pandemic is brought under control, another will eventually take its place. Pandemic threats are inevitable, but the systemic U.S. and global policy failures that have accompanied the spread of this coronavirus were not. This report is intended to ensure that in future waves of the current pandemic and when the next pandemic threat occurs, the United States and the world are better prepared to avoid at least some of the missteps that have cost humanity so dearly. Although the recommendations in this report stand on their own, the Task Force stresses that the national and international dimensions of the pandemic challenges are mutually reinforcing, above all when it comes to the role of the United States. If the COVID-19 pandemic has revealed anything, it is that strong and sustained U.S. global leadership remains essential.

What Went Wrong Globally

The ultimate source of the weakness of global governance in preventing, detecting, and responding to international health emergencies resides in sovereign states. National governments remain torn between their desire to have a functioning WHO and their disinclination to provide it with authorities and resources to respond aggressively to outbreaks if doing so were to intrude on national prerogatives and sovereignty. Disease outbreaks are complex events, and no established global mechanism coordinates the diplomatic, economic, health, scientific, security, and surveillance resources needed to mobilize an effective response. This pandemic has been characterized by a patchwork of inadequate domestic responses, a breakdown of compliance with IHR, and a disastrous lack of cooperation and coordination across nations in the multilateral settings where an effective response both to the disease and to its massive economic fallout could have materialized.

Effective governance of global health security depends on sovereign states.

IHR, an international agreement dedicated to pandemic preparedness and response, depends on the compliance of states parties to identify and delay or halt the spread of a dangerous novel infection.

In the 2002–2003 SARS outbreak, China’s Ministry of Health was aware for months of a dangerous new type of pneumonia in Guangdong Province before sharing that information with other nations or issuing a nationwide bulletin to hospitals and health professionals on preventing the spread of the disease. That virus spread to twenty-nine countries, sickened thousands of people, and killed 774 before being brought under control in July 2003.

In the wake of this crisis, the World Health Assembly, WHO’s governing body, revised the International Health Regulations in the hopes of preventing another SARS. The revised IHR requires states parties to be transparent; to maintain core capacities to prevent, detect, and respond to outbreaks; and to grant extraordinary powers to WHO. IHR mandates that each state party should notify WHO within twenty-four hours of assessing a serious disease event and continuously communicate to WHO timely, accurate, and sufficiently detailed public health information on the notified event. The WHO director general is empowered to collect information from nongovernmental sources about a potential outbreak and request that states parties verify such information within twenty-four hours. On the basis of information from governmental and nongovernmental sources, the director general can declare an outbreak a public health emergency of international concern, even over the objections of the state or states most directly affected.

The director general can also issue outbreak-specific guidance to inform and influence how other states use trade and travel restrictions, to ensure that those restrictions are science based and do not interfere unnecessarily with international traffic. This trade and travel guidance is nonbinding, but once a PHEIC is declared, the director general must

issue it. Like most international organizations, WHO does not have enforcement powers or investigative capabilities, so it relies on creating incentives for countries to cooperate promptly and fully during crises, including, in the last resort, by naming and shaming.

During the early phase of an emerging novel disease, it is not unusual for national authorities to have an imperfect and evolving scientific understanding of the situation. The current evidence, however, suggests that China's compliance with its IHR obligations was at best flawed, at least in the early days of the outbreak, when transparency was most important.

First, China did not notify WHO in a timely manner of its assessment of the novel coronavirus, though the duration of that delay remains unclear. According to press statements from WHO officials, WHO first learned about the outbreak in Wuhan not directly from Chinese authorities, but rather from press reports posted on December 31, 2019, on the Program for Monitoring Emerging Diseases (ProMED), a U.S.-based open-source platform for early intelligence about infectious disease outbreaks. These press reports concerned an "urgent notice" that the Wuhan Municipal Health Commission issued on December 30, for medical institutions, stating that cases of pneumonia of unknown cause had emerged from the city's Huanan Seafood Wholesale Market. Zhang Jixian, a respiratory doctor in Wuhan, identified those cases between December 26 and 29 and twice reported those cases to local health authorities.³⁹ Subsequent press reports indicate that the earliest suspected cases began to appear in Chinese hospitals and clinics in early and mid-December.⁴⁰ No reports indicate that the Chinese government was aware of any of these earlier cases, but a subsequent analysis in the *Lancet* indicated that the first cases of COVID-19 did not originate at the Huanan Market and date to at least December 1, 2019.⁴¹

On January 1, 2020, WHO requested verification from China based on the ProMED post, after which China notified WHO of the potentially serious disease event and began sharing information with WHO on January 3. As a recent Congressional Research Service report observes, WHO's first formal statement about the outbreak, on January 5, was vague on how the agency was notified about the virus, indicating that its China Country Office "was informed" of cases of pneumonia of unknown cause in Wuhan on December 31, 2019.⁴²

Second, China was slow to share information with WHO and others before January 20, when it began to do so more actively. Indeed, local government officials on January 2 and 3 reportedly threatened and intimidated multiple Chinese health professionals from speaking

or posting on social media about the pneumonia cases.⁴³ Wuhan Municipal Health Commission issued no updates during a five-day political meeting in the city from January 6 to 10. On January 11, China shared the genetic sequence of the virus with WHO, after it had been posted online by a researcher at Fudan University in Shanghai.⁴⁴

Also on January 11, the Wuhan Municipal Health Commission announced the first death from the virus but stated that it had identified no new infections since January 3, and that no evidence indicated person-to-person transmission or infections among health-care workers.⁴⁵ Wuhan medical personnel began falling ill with symptoms similar to their patients' in early January, but Chinese authorities did not officially acknowledge this until January 20.⁴⁶ On January 13, Chinese officials told a delegation of health officials from Hong Kong, Macau, and Taiwan that "limited human-to-human transmission cannot be excluded."⁴⁷ For the duration of a second major political meeting in the city, January 12 to 17, the Wuhan Municipal Health Commission issued daily updates but reported no new infections. On January 20, reporting a significant increase in COVID-19 cases and several deaths, China's National Health Commission publicly confirmed for the first time that the novel coronavirus was transmissible from person to person and that medical personnel had been infected.⁴⁸

Chinese authorities do not appear to have shared biological samples with WHO or other international partners until January 28, or even possibly later.⁴⁹ China's behavior in the early stages of the COVID-19 pandemic widened the cracks in global regimes for information sharing, and its delayed sample sharing undermined international response efforts at a time when specimens were critical for the development and validation of countermeasures.⁵⁰ The opacity of the Chinese response in the early weeks of the pandemic sowed diplomatic mistrust, undermining international solidarity at a critical juncture.

Even with perfect transparency and compliance with IHR requirements, it is unclear whether the COVID-19 outbreak could have been fully contained early in China. The evidence does suggest, however, that China's delay in sharing information contributed to the early spread of the virus domestically and internationally. Wuhan's mayor, Zhou Xianwang, has said the decision to go forward with an annual potluck banquet on January 18 in Wuhan's Baibuting neighborhood with more than forty thousand households was "based on the judgment that in this epidemic, transmission between people was limited." A study published in *Nature* estimated that had China implemented widespread testing, created a cordon sanitaire around Hubei, and imposed other

An Abbreviated Chronology of the Early Outbreak of COVID-19

December 1, 2019	According to a <i>Lancet</i> study published on January 24, the first cases of COVID-19 date to at least December 1, 2019, and did not originate at the Huanan Seafood Wholesale Market.
Late December	Hospitals in Wuhan, China, identify cases of pneumonia of unknown origin.
December 30	The Wuhan Municipal Health Commission issues urgent notices to city hospitals about cases of atypical pneumonia linked to the city's Huanan Seafood Wholesale Market. The notices leak online and are reported in the local press.
December 31	A Chinese media report about the outbreak is posted to ProMED, a U.S.-based open-access platform for early intelligence about infectious disease outbreaks. WHO headquarters in Geneva sees the ProMED post. WHO China Country Office requests verification of the outbreak from China's government.
December 31	The Wuhan Municipal Health Commission issues its first public statement on the outbreak, saying it has identified twenty-seven cases.
January 1, 2020	WHO requests verification of the media reports from China.
January 2–3	Local Wuhan police reportedly reprimand several health professionals, including Dr. Li Wenliang, for spreading allegedly false statements about the outbreak online.

January 3	China notifies WHO of the potentially serious disease event and begins sharing information. Chinese Center for Disease Control and Prevention (China CDC) Director General Gao Fu tells CDC Director Robert Redfield about the outbreak in Wuhan.
January 4	WHO issues first public statement on the outbreak, tweeting, “China has reported to WHO a cluster of pneumonia cases—with no deaths—in Wuhan, Hubei Province.”
January 5	WHO issues formal statement indicating that the China Country Office “was informed” of cases of pneumonia of unknown cause in Wuhan on December 31, 2019.
January 6	HHS Secretary Alex Azar and CDC Director Redfield offer to send CDC experts to China.
January 6–10	Wuhan Municipal Health Commission issues no updates during five-day political meeting.
January 7	China completes genetic sequencing of novel coronavirus later named SARS-CoV-2.
January 11	Fudan University researchers post the genetic sequence of the virus on an open-access platform. China CDC subsequently also posts genetic sequences and shares sequence with WHO.
January 12–17	Wuhan Municipal Health Commission issues daily updates but reports no new infections.

An Abbreviated Chronology of the Early Outbreak of COVID-19, *Continued*

January 13	China National Health Commission officials tell a delegation of health officials from Hong Kong, Macau, and Taiwan that “limited human-to-human transmission cannot be excluded.”
January 13	Thai authorities confirm the first case of the coronavirus outside China.
January 14	The acting head of WHO’s emerging diseases unit tells a press conference, “It is certainly possible that there is limited human-to-human transmission.” WHO later tweets that preliminary investigations by Chinese authorities “have found no clear evidence of human-to-human transmission.”
January 20	China confirms person-to-person transmission and infections among medical workers.
January 20	Experts from WHO China Country Office conduct a one-day field visit to Wuhan.
January 21	CDC announces the first novel coronavirus case in the United States.
January 23	Wuhan suspends public transportation and bars residents from leaving the city.

measures a week earlier, it would have reduced China's caseload by 66 percent. According to that study, acting three weeks earlier would have cut cases by 95 percent.⁵¹

From early December until January 23, when China restricted movement, millions of people traveled to and from the city of Wuhan, including thousands who were infected and carried the virus all over the world. For weeks, the global spread went undetected, until January 13, when Thai authorities confirmed the first case of the coronavirus outside China. That first infected individual was a Chinese national who traveled from Wuhan. Nations did not begin imposing travel restrictions against China to stop the spread of COVID-19 until after China restricted domestic movement; the Marshall Islands imposed the first restrictions on travelers from China on January 24.⁵²

WHO lacks authority to enforce IHR and is under-resourced.

The roles and responsibilities that IHR has assigned to the WHO Secretariat and to member states are neither widely understood nor fit for the purpose of preventing, detecting, and responding to a pandemic. The WHO Emergencies Program is under-resourced and lacks a surge capacity to respond to large-scale emergencies.

The WHO Secretariat's actions are grounded in its duties and responsibilities under IHR. Any evaluation of its performance should consider the limitations of IHR in advancing pandemic prevention, detection, and response and the degree of IHR adherence by member states in their national responses. The COVID-19 experience suggests that WHO lacks sufficient investigative authorities and resources to lead and coordinate coherent international responses to pandemics—in large part because member states are loath to expand those authorities and the budget.

The WHO Secretariat plays a coordinating role and is required to adhere to IHR in its conduct during a novel disease outbreak. It cannot operate in member countries without their permission. WHO lacks independent intelligence-gathering capabilities and cannot compel enforcement of IHR requirements on information sharing and transparency. Although binding on member states, IHR does

not provide the WHO Secretariat with authority to impose sanctions against countries for noncompliance other than publicly cajoling recalcitrant governments. IHR stipulates that it is up to member states to adhere to the regulations, and that the WHO Secretariat could offer assistance, but WHO has limited power, authority, and budget in its own right.

WHO has an expansive global mandate under the WHO constitution but an annual budget of just \$2.4 billion, smaller than some major U.S. hospitals (see figure 5).⁵³ For the 2018–19 biennium, WHO devoted \$554 million—less than \$300 million per year—to implement its core activities in health emergency management and raised 82 percent of that amount from voluntary contributions.⁵⁴ This budget is too modest to carry out all the activities needed to support member states in health emergencies and, at the same time, coordinate a global response to pandemics. The WHO Emergencies Program is currently managing, in addition to the COVID-19 pandemic, the international response to the Ebola epidemic in the Democratic Republic of Congo, health emergencies in Syria and Yemen, and the Rohingya crisis in Bangladesh. The program also responds to hundreds of acute health events globally.

Especially in light of these limited resources, aspects of the WHO response to COVID-19 are worthy of commendation. On December 31, within twenty-four hours of posting press reports of a cluster of pneumonia cases of unknown origin, WHO used that nonstate information to prompt China to issue a notification of the outbreak, in accordance with its IHR authorities. On January 5, WHO published the information it had available on its website and in its first news announcement, and alerted all IHR national focal points of the outbreak. In this regard, IHR worked as designed.

Despite resource limitations, WHO has also successfully supported coordination of many technical aspects of the COVID-19 challenge. On January 9, WHO reported that the mysterious pneumonia illness in China was a novel coronavirus, the same type of pathogen that had caused the early 2000s SARS epidemic. The next day, it issued a comprehensive package of technical guidance with advice to all countries on how to detect, test, and manage potential cases. WHO issued the first situation report on January 21 and since then has updated the latest epidemiological data on a daily basis. On January 23, the organization held an international news conference, confirming a basic picture of the virus that holds up reasonably well today: a novel coronavirus that spreads from person to person, is more transmissible than seasonal

flu, and is much deadlier. Since February 4, WHO Director General Tedros Adhanom Ghebreyesus has provided frequent media briefings. WHO has helped coordinate international research and development for coronavirus vaccines, therapeutics, and diagnostics, including organizing a massive, multicountry “solidarity clinical trial” to assess the most promising treatments.⁵⁵

WHO is advising ministries of health through its country offices and supplying working test kits, masks, and personal protective equipment to low-income countries that request them. When needed, WHO has deployed doctors and scientists as boots-on-the-ground to assess, advise, and implement control strategies in countries with weak health systems, such as Iran and Egypt.

WHO often defers to affected member states in public health crises.

WHO prizes solidarity in responding to emergencies and has been reluctant to criticize member states in order to improve cooperation and IHR compliance. WHO has also been slow to declare public health emergencies of international concern in outbreaks and epidemics over the objections of the directly affected member states.

WHO has always depended on cooperation from governments to compensate for its limited resources and authority. Yet, despite not having any authority to do so, then Director General Gro Harlem Brundtland used naming and shaming in the 2002–2003 SARS outbreak to induce cooperation from China, convincing it to share its data with WHO. She accused China of withholding information, claiming that the outbreak could have been contained “if the WHO had been able to help at an earlier stage” and exhorting the Chinese to “let us come in as quickly as possible!”⁵⁶ Similarly, despite having no formal power to do so, WHO issued advice against traveling to affected areas after SARS spread to Canada, Hong Kong, and Vietnam.

The 2005 IHR revisions were meant to institutionalize the authorities that Brundtland exercised and ground them within a set of rules. Since the adoption of the revised IHR, however, subsequent directors general have tended to prize solidarity, defer to member states

in crises, and exhibit an increasing reluctance to declare a public health emergency of international concern, the highest level of alarm that WHO is authorized to issue under IHR.

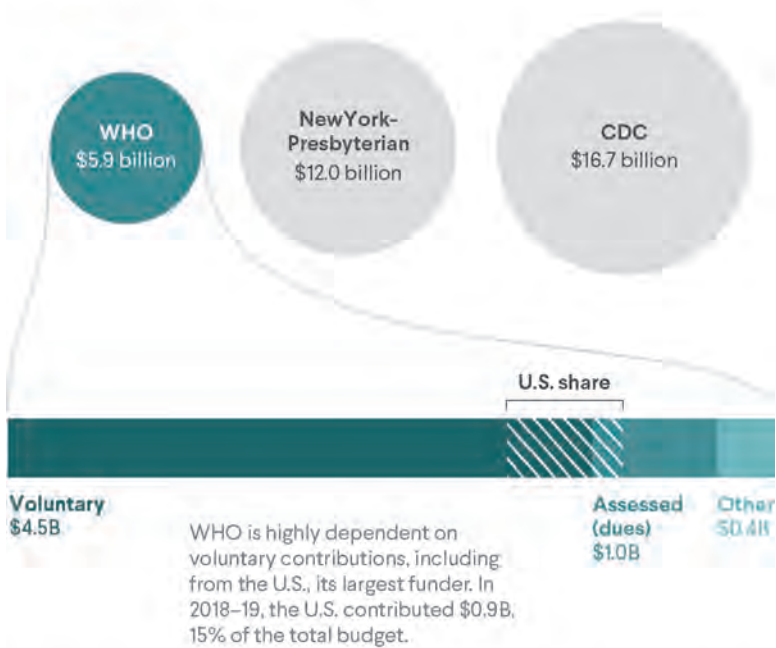
These tendencies are not particular to this pandemic, the current director general, or China. Since the 2009 H1N1 influenza pandemic, in which WHO was criticized for declaring a PHEIC too early, directors general have often been reluctant to declare them. WHO was also criticized in the last two Ebola epidemics for being slow to declare a PHEIC, against the wishes of DRC and the affected West African nations, which are not significant contributors to the WHO budget. In the DRC epidemic, the current director general questioned whether a PHEIC declaration would bring any additional benefits for outbreak response.⁵⁷ During the COVID-19 pandemic, WHO has refrained from calling out any nation by name for failing to comply with IHR or follow WHO guidance—on travel bans or anything else.

In the current emergency, WHO's tendency toward deference has manifested itself in some inconsistent communication, a credulous public stance toward Chinese government claims, and unqualified praise for China's response. Internal WHO emails, later leaked to the press, indicate that officials complained during the week of January 6 that China was sharing "very minimal information," hindering assessment of the virus's spread, its risk to the rest of the world, and proper planning to confront it. Yet, WHO officials did not publicize those concerns and instead continued to portray China in the best light, reportedly in hopes of eliciting better cooperation from China.⁵⁸ For example, Maria Van Kerkhove, acting head of WHO's emerging diseases unit, acknowledged at a January 14 press conference that "it is certainly possible that there is limited human-to-human transmission." Later that day, reportedly concerned about getting ahead of the Chinese government, WHO tweeted, "Preliminary investigations conducted by the Chinese authorities have found no clear evidence of human-to-human transmission" of SARS-CoV-2.

On January 22, the director general convened the IHR Emergency Committee to address the outbreak of COVID-19. At the time of that meeting, many commentators believed the criteria for a PHEIC had been met: a novel coronavirus had spread to six countries, three hundred cases were reported in China and globally, the Chinese government had confirmed human-to-human transmission, and numerous Asian and Pacific countries had begun to impose airport screening measures on travelers from China.⁵⁹ Nevertheless, Emergency Committee members disagreed on whether the outbreak constituted a PHEIC

Figure 5. WHO'S BUDGET IS LIMITED

WHO funding in the 2018–19 funding period compared with NewYork-Presbyterian Hospital and the CDC



Note: NewYork-Presbyterian data is the operating revenue in 2017 and 2018. CDC data is the agency budget authority in 2018 and 2019.

Sources: World Health Organization; ProPublica; U.S. Department of Health and Human Services.

but agreed to reconvene in a matter of days to reexamine the situation. Under IHR, the director general is not required to follow the advice of the Emergency Committee but, as in past epidemics, has consistently done so in this pandemic.

On January 28, the director general traveled to China to assess the situation firsthand. WHO declared the event a PHEIC on January 30. The Emergency Committee reconfirmed human-to-human transmission and recommended comprehensive strategies for country preparedness. The urgency with which member states took action in response to COVID-19 based on the PHEIC designation has varied, both in terms of the timing and the comprehensiveness of public health measures.

Rather than naming and shaming China for delays in sharing information, WHO opted to focus on events after January 20, lauding the extraordinary measures that China took to slow further spread of the outbreak. The “world owes China a great debt,” a WHO official said in late February, suggesting that other nations follow China’s lead in containing the virus.

By late January, the alarms were ringing loudly enough for many Asian nations and territories to move decisively to respond to the coronavirus. Japan, Hong Kong, Singapore, South Korea, Taiwan, and Vietnam all adopted immediate, aggressive public health measures to contain and mitigate the spread of the coronavirus in their communities and health-care systems. Despite having access to the same information, the United States and many European nations responded more slowly, ramping up only after it became apparent that community transmission of the virus was occurring within their borders. The one exception was the issuance of travel restrictions in response to the outbreak in China.

Most WHO member states disregarded WHO guidance on travel restrictions.

Few member states complied with the notification requirements for travel restrictions, and many rejected the WHO Secretariat’s shifting guidance on such restrictions during the pandemic.

The WHO Secretariat issued its first COVID-19–related travel advice on January 10, recommending against nations screening travelers upon entry: “It is generally considered that entry screening offers little benefit, while requiring considerable resources.” The guidance also stated, “From the currently available information, preliminary investigation suggests that there is no significant human-to-human transmission, and no infections among health care workers have occurred.”⁶⁰ On January 24, WHO updated its travel guidance, still advising against entry screening for travelers but noting that “the majority of exported cases were detected through entry screening.” WHO has repeatedly since softened its technical guidance, advising “that measures to limit the risk of exportation or importation of the disease should be implemented, without unnecessary restrictions of international traffic.”⁶¹

President Trump has criticized the issuance of WHO travel guidance as “political gamesmanship,” incorrect on the merits, and responsible for delaying other nations from imposing lifesaving travel restrictions to and from China. However, at least forty-five nations had already imposed restrictions on travel to and from China before the U.S. restriction went into force on February 2.⁶² As outbreaks spread in Europe and the Middle East, states began widening the scope of their travel restrictions. By March 27, the number of nations that had imposed travel restrictions on one or more countries had increased to 136. Most of these nations failed to notify WHO of the public health rationale and scientific justification for their travel measures until mid-March, long past the forty-eight-hour notification requirement under IHR.⁶³

Rules on travel restrictions were included in the revised IHR because, under previous iterations of that agreement, states parties often delayed reporting disease outbreaks to WHO and other nations out of concern that other states would impose unduly strict measures, harming the trade, tourism, and reputation of reporting nations. The new regulations, as revised in 2005, recognize the rights of states parties to implement health-related travel restrictions as long as those measures are based on public health principles and scientific evidence and are not more restrictive of trade and travel than other measures that would achieve the same level of health protection.

Under IHR, the WHO director general can issue guidance on trade and travel measures responding to dangerous disease events and is required to do so after declaring a PHEIC. This guidance is not binding on nations as a matter of international law. However, the widespread adoption of travel restrictions in this pandemic and the failure of member states to notify and explain the reasons for departing from WHO guidance undermines the viability of IHR. If nations do not have confidence that IHR and WHO guidance will restrain nations from imposing unnecessary and unduly strict trade and travel restrictions, those nations could be less likely to report disease outbreaks early in fear of the economic consequences that notification could bring.

Early research and scenario analysis suggest the combination of travel restrictions within China and international travel restrictions against China could have delayed the spread of COVID-19, but were more effective in nations that also used that time to reduce community spread of the virus.⁶⁴ Many nations, however, did not do so. During the 2014 Ebola virus epidemic, WHO discouraged travel bans, in part, because of their potential to create “a false impression of control”—

a misperception that the ban was sufficient to stop the spread of disease.⁶⁵ The most recent literature on the topic finds limited evidence to support that travel bans helped minimize the spread of four other emerging infections earlier this century, including the coronaviruses MERS and SARS.⁶⁶

Nations failed to mobilize a multilateral response.

Much of the responsibility for the weak multilateral response falls on national governments, especially the United States, which often bypassed or ignored WHO and failed to mobilize adequate responses within other critical multilateral forums, including the Group of Twenty (G20), the G7, and the UN Security Council.

Potentially pandemic diseases are a threat to international security, economic prosperity, and global health, but are not treated with sufficient gravity by the multilateral system. There is no established global mechanism charged with coordinating the various diplomatic, economic, health, scientific, security, and surveillance resources needed to mobilize an effective international response to a severe pandemic. What exists instead is a panoply of multilateral institutions, all of which have underperformed in this pandemic, thanks in large part to their member states.

WHO, the ostensible focal point for global health governance, is under siege. Unhappy with its performance, President Trump announced on May 29 that the United States would leave the already beleaguered and resource-strapped agency, depriving it of its most important member and largest funder. Beyond WHO, national governments have failed to use high-level multilateral forums effectively to forge a collective response to COVID-19, due in large part to geopolitical frictions. Strategic rivalry between China and the United States undercut the potential for the G7, G20, and Security Council to provide political direction to the international system, both in orchestrating a robust public health response and in coping with the economic fallout.

The leaders of the G7, representing the world's leading high-income democracies, did not convene until mid-March, in a meeting devoted to little more than information sharing. Later that month, a meeting of G7 foreign ministers dissolved into acrimony amid disputes between the United States and its partners over whether their joint statement should refer to the Chinese origins of the coronavirus. The G20, which comprises the world's most important established and emerging economies, convened to discuss the pandemic for the first time in late March, nearly three months into the crisis, with paltry results. The United States blocked agreement on a joint commitment by the G20 to strengthen WHO's mandate and arm it with additional resources to coordinate the international fight against the disease. The G20 leaders also failed to take several steps that could have expanded global health cooperation, such as lifting export controls on critical medicines, medical supplies, and basic foodstuffs; ending the disruption of supply chains; and agreeing to prioritize the fast disbursement of medicines and vaccines over the rigid protection of intellectual property rights.⁶⁷ In mid-April, the group finally agreed to suspend the debt obligations of low-income nations through the end of the year, but the United States rejected a major expansion of International Monetary Fund (IMF) special drawing rights. A planned G20 leaders' meeting later that month collapsed, however, amid continued U.S.-China rancor over WHO.

Even these lackluster efforts, however, outshone the nonexistent response of the UN Security Council, which was paralyzed by geopolitical maneuvering. In March, the United States insisted that any statement from the body mention the Chinese origins of the virus.⁶⁸ China, which held the Security Council's rotating presidency, blocked it from considering any resolution regarding the pandemic, arguing that public health matters fell outside the council's "geopolitical ambit." The resulting stalemate prevented the Security Council both from issuing a powerful resolution to mobilize UN agencies and the broader multilateral system and from creating a subsidiary body to provide high-level direction, including to help coordinate the international response in fragile and war-torn states. U.S.-Sino competition helped politicize the pandemic and played a major role in derailing the international response to it. Even during the Cold War, the Soviet Union and the United States worked together to fight polio and smallpox.

The poorly coordinated global response to COVID-19 underscores both a fundamental truth and an inescapable reality. The truth is that

multilateral institutions do not spring magically into life during crises. Their success depends on the enlightened leadership of powerful member states, who should be willing to put their differences aside and mobilize these bodies behind a collective effort. The contrast with the global financial crisis of 2008–2009, during which world powers rose to the occasion, is instructive.⁶⁹ The reality is that we live in an age of heightened geopolitical competition that complicates multilateral responses to future pandemics. The return of balance-of-power politics hinders the easy health diplomacy of the immediate post–Cold War years.

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Upholding the World Health Organization

Next Steps for the EU

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Before the COVID-19 pandemic, the European Union (EU) was neither a strong promoter of global health nor a strong supporter of the World Health Organization (WHO). The Global Health Council Conclusions from 2010 were never comprehensively implemented and quickly forgotten. With the pandemic greatly affecting EU member states, the EU is increasingly interested in upholding multilateral cooperation in the global health field. Therefore, the EU should aim for an upgrading of the EU's status in WHO, the establishment of a global health unit in the European External Action Service (EEAS), and an overhaul of the formal relationship between the European Commission and WHO.

The pandemic discloses the discrepancy between the EU advocating for global access to a COVID-19 vaccine while at the same time safeguarding its own access to it. Its refusal to alter patent laws that serve to protect the commercial and innovation interests of pharmaceutical companies based in EU countries can equally be questioned on grounds of global solidarity. A revamped global health strategy is needed to overcome such issues and make the EU a reliable and capable partner on global health that gives WHO a central role.

Global Health Policy Undervalued

As public health policy-making remains mainly a national competence under European legislation, the EU can coordinate and complement the policies of member states.

The Union's global health policy-making lacked visibility in recent decades, although the EU is traditionally a promoter of effective multilateralism. With its Council Conclusions on global health, adopted in 2010, the EU committed itself to stronger global health governance — including supporting WHO and the United Nations (UN) system — focusing on Universal Health Coverage, strengthening health systems, as well as recognising the need for a “Health in All Policies” approach, including in the EU's external actions. However, the Conclusions never received the strong backing of health, development, and foreign ministries of EU member states, as the EU was primarily seen as a development actor rather than a strategic agent in global health. Thus, EU member states decided in an incoherent way on how large a budget that they and the European Commission would make



available for international health priorities, initiatives, and institutions such as WHO. Before the COVID-19 pandemic, global health was not a priority on the European political agenda, and both the health and international development cooperation mandate was reclaimed by EU member states; with some exceptions being issues in fashion, such as anti-microbial resistance and digital health.

COVID-19: The EU's Wake-up Call to Global Health?

The EU has been struggling to respond to the COVID-19 pandemic, as member states primarily followed a national response at the beginning. European and international cooperation were initially placed on the back burner with the introduction of export restrictions on protective equipment such as masks and gloves. Aside from the reluctance of member states to cooperate, the lack of resources and authority of the European Centre for Disease Prevention and Control (ECDC) has hampered a harmonised, evidence-based approach within Europe, and it has impeded the ECDC from proactively engaging in global health policies.

Gradually, a more “Europeanised” effort is now evolving to shore up the effectiveness of Europe’s public health response within the EU as well as in its multilateral commitments to bolster global health. European governments have started to realise that a joint approach is necessary to recover from the pandemic and the socio-economic crises that will follow. In her State of the Union address, Commission President Ursula von der Leyen called for a European Health Union. She announced plans to bolster the ECDC and the European Medicines Agency. An expansion of EU competence in the field of health is to be discussed in the Conference on the Future of Europe, which the European Commission will organise in 2021. She also announced the establishment of a European Biomedical Advanced Research and Development Authority (EU BARDA) to

enhance Europe’s capacity to respond to cross-border threats.

Unfortunately, it is not clear if EU member states also support these ambitions. A proposal for the EU health budget (2021 – 2027) to be increased to 25 times its current size was largely undone by member states deciding to reduce the overall amount of the EU budget. A strong European investment in health systems and monitoring would have made global EU efforts in supporting the resilience of health systems and crisis preparedness more credible. Budgetary lines for global health policies for international cooperation have not been introduced or bolstered yet, which makes the future financing of ambitious EU global health policies in the upcoming EU budget challenging.

The Commission and EU member states were more united in February 2020, when they decided to uphold the international health order by activating financial support for WHO early on. During the pandemic, WHO has moved to the centre of information provision regarding the spread of the disease and the required public health responses. After harshly attacking WHO and accusing the organisation of being too China-friendly, the US administration announced in July 2020 that it would be pulling out of WHO. There are now increased expectations for the EU to fill financial as well as leadership gaps. EU member states such as Germany and France have already stepped in, with the former pledging an unprecedented €500 million to WHO for 2020. France has committed an additional €50 million to WHO as well as a €90 million commitment towards founding a new WHO Academy.

Formal EU and WHO Cooperation

The relationship between WHO and the EU is based on an exchange of letters dating back to 1972. The EU – WHO cooperation is modelled on the work done by WHO and the EU on the global, regional, and national levels. Firstly, the EU and WHO Headquarters in Geneva interact through designated

Figure 1

The EU's web of relations with WHO



staff in the EU delegation and via Senior Official Meetings. Both are mostly concerned with global issues. Secondly, the European Commission as well as the ECDC have a practical partnership with the WHO Regional Office for Europe (WHO EURO) in Copenhagen, which is primarily focused on topics concerning the European region. Thirdly, the EU cooperates through its delegations with WHO country offices at the national level worldwide.

The coordination among EU member states on WHO matters has been prepared by the EU delegation in Geneva since 2010. Despite some initial questions on legitimacy and trust, it is now clearly in the driving seat to bring across a common EU position between European countries on key issues. It is backed by the European Commissions' Directorate-General for Health and Food Safety (DG SANTE) and the EEAS. However, the EU only has an observer status, as only nation-states can join WHO. This prevents the Union from fully participating in WHO governing body meetings. Hitherto, the EU has not made any attempts to change this. However, with the current global climate of retreat from multilateralism, there might be a window of opportunity for the EU to upgrade its status as well as that of other

regional economic integration organisations.

Despite various levels and areas of cooperation and the EU's observer status in WHO's governing bodies, the EU and WHO partnership still feels shaky and less clarified than it is for other partnerships between EU and UN institutions. The EU has, for instance, pushed for an enhanced observer status within the UN General Assembly (UNGA) that gives the Union, among others, the right to speak early in the debate of the UNGA and to be invited to the general debate. Furthermore, WHO is primarily considered a development organisation for public health standard-setting outside the EU. The COVID-19 pandemic may change this misconception for the better, since all countries are dependent on WHO recommendations, followed by many – but not all – EU member states.

The political support and increased joint action could strategically strengthen EU – WHO cooperation at all levels by building on existing collaboration and partnership models (Figure 1). Three aspects are critical in the EU's web of relations with WHO. Firstly, the European Commission does not have formal partnerships with regional WHO offices aside from WHO EURO, which

could enable the EU to engage in global health diplomacy within and outside the European region. Secondly, the cooperation with WHO EURO seems to be primarily focused on European issues, which is understandable. However, the next programmatic partnership between WHO EURO and the European Commission might therefore focus on global priorities that are equally important to both parties, such as projects about the environment and health, gender equity, and the commercial determinants of health. Thirdly, collaborative efforts between EU delegations with WHO country offices could be made more visible, coordinated, and harmonised through shared learning and training sessions.

The EU As a Geopolitical Actor in Global Health

Commission President von der Leyen has expressed a willingness of the Commission to become more geopolitical, which could imply a more proactive and instrumental approach to multilateral organisations, but it also bears the risk of implying an EU-first bias. So far in the COVID-19 crisis, the EU has responded to the challenge of providing equitable access to vaccines, therapeutics, and diagnostics in three international fora.

Firstly, in early May 2020, the EU organised an international pledging conference to raise funds for the development of vaccines, therapeutics, and diagnostics. Later, a second conference was organised. These conferences can be regarded as a double-edged sword: On one side, they provide support for WHO's goal to develop vaccines, therapeutics, and diagnostics as global public goods — goods that should benefit everyone equally. According to von der Leyen, the intention is not to distribute these exclusively among EU member states, but to make them available and affordable worldwide. On the other side, the conferences position the European Commission and the EU as leaders for COVID-19 solidarity, thereby sidelining WHO as the main

platform for global coordination on international health priorities.

The EU pledging conferences are an example of “fast multilateralism”, but their focus is only on the development of vaccines, therapeutics, and diagnostics for one infectious pandemic disease, leaving other pressing health challenges neglected. Questions remain as to how more structural investment in and with WHO can be created to sustain global health multilateralism and create a sustainable impact on people's health.

Secondly, in the first ever virtual World Health Assembly (WHA) — the highest decision-making forum of WHO's member states — the EU led the development of the main resolution, which focused exclusively on the response to the COVID-19 outbreak. Multilateral support for this resolution came from China and the EU leadership, but not from Russia, the United States, or India — with the latter having a large pharmaceutical sector. The resolution includes four main features: the request for a broad UN response; a call to WHO member states to respect the International Health Regulations, the internationally binding set of rules to prevent, detect, and respond to infectious diseases; a call to international organisations to create a voluntary patent pool for the development of a COVID-19 vaccine to ensure affordable access for all; and the request for WHO to establish an impartial, independent, and comprehensive evaluation of the coordinated international health response to COVID-19.

The remuneration of pharmaceuticals is regulated by international patent law. However, since the global and simultaneous demand for COVID-19 diagnostics, vaccines, and therapeutics is so high, conventional patent licensing could make rapid development and large-scale production difficult, which therefore could delay access and distribution of a vaccine. According to the resolution, a COVID-19 technology access pool should be the mechanism to remedy this challenge, ideally based on best practices; one example is the UNITAID-established and supported Medicines Patent Pool.

However, the devil will be in the details, because the implementation of a patent pool requires internationally recognised Trade-Related Aspects of Intellectual Property Rights (TRIPS) flexibilities by the EU and its member states. These flexibilities are not discussed at WHO, but at the World Trade Organization TRIPS Council, where South Africa recently pushed for initiating a resolution with the aim of simplifying the requirements for TRIPS flexibilities, including compulsory licensing of COVID-19 diagnostics, therapeutics, and vaccines. This was proposed in order to legally guarantee access to diagnostics, therapeutics, and vaccines for COVID-19 as a global public good, including in low-income countries. The compulsory licensing of medical products from pharmaceutical and biotech companies can better protect public health and secure access to essential technologies. However, major pharma-producing countries, including from the EU, prioritise voluntary licensing and stress that the current market-based system suffices to guarantee access in low- and middle-income countries.

There seems to be a contradiction between the EU's desire for global vaccine accessibility and EU member states' commercial interests and political will to protect patents, since a lifting of patent restrictions could create a potential precedent for other vaccines and medicines. EU member states prefer to keep control over the licensing of new medical products, and therefore they opt for voluntary licensing via a patent pool. In theory, this could still allow global access, but the international experience with gaining access to medicines for other diseases, such as HIV/AIDS and hepatitis C, would indicate otherwise. The COVID-19 pandemic could potentially provide the momentum for reforming the governance of TRIPS flexibilities, which could have implications on whether universal access to medical products is allowed. The EU would benefit from this in the long term when considering both the economic and public health perspectives.

Thirdly, WHO and the European Commission co-host an "Access to COVID-19 Tools

accelerator" Facilitation Council (COVAX facility), a new multi-stakeholder platform that is intended to guide key strategic, policy, and financial issues during the development of new COVID-19 diagnostics, therapeutics, and vaccines — with commitments by over 180 WHO member states. Still, parallel bilateral initiatives, such as advanced market commitments between the EU and pharmaceutical and biotech companies to secure doses of vaccines for European populations, might run against efforts within the COVAX facility to provide affordable vaccines for all, especially in low- and middle-income countries. However, the EU is now willing to engage in the COVAX facility after having advised its member states to not buy vaccines through COVAX earlier.

What is still missing is an outspoken stance on how WHO should function within the plethora of global health arrangements (World Bank, GAVI, Global Fund, etc.) — vis-à-vis other powerful stakeholders such as philanthropic institutes and the pharmaceutical industry — as an independent watchdog during infectious disease outbreaks (e.g. exposing cover-ups by states where an outbreak has started), as well as what its topics of focus should be and what organisational structure would be most adequate. In the lead-up to the announcement about the US withdrawal from WHO in July 2021, Germany and France allegedly were discussing WHO reform with the US administration, which points to a recognition of the need for changes to the current set-up. However, it is not clear which avenues of reform the European Commission and EU member states prefer. By intensifying cooperation with WHO, the European position on reform and the WHO reform process itself could be accelerated; despite WHO's limitations, the pandemic has illustrated perhaps more than ever how much the organisation is needed. A non-paper presented by Germany and France gives some clues about the felt need for increased funding and a strengthening of the early warning and monitoring systems during epidemics and pandemics. But other issues,

such as the regional structure of WHO and its norm-setting function as well as global health aid and advice to developing countries, were not addressed.

Future Choices for the EU on Global Health

As the COVID-19 pandemic enters a prolonged phase, the EU and its member states are in the position to jointly contain the virus and begin to structurally recover by investing in the development of strong and resilient public health systems. To become a reliable and capable partner for WHO and beyond, the EU could strengthen its capacities in the following areas.

Firstly, the EU could update its Council Conclusions on global health. A new, coherent EU global health strategy should focus on facilitating resilient health systems that are rooted in sustainable development as well as the right to health, in addition to being prepared for external shocks such as health security risks and consequences of climate change. A new global health strategy should offer a broad, more geopolitical, European perspective. Elements that could be included are references to the Union's values (access to health, equality, democracy, accountability); links to the Sustainable Development Goals (SDGs); a health focus in all policies; a bolstering of the implementation of the International Health Regulations; as well as reference to the EU's strategic autonomy with regard to medical supplies and medicines (see also Kickbusch and Franz).

New Council Conclusions should be accompanied by a concrete roadmap and monitoring mechanisms in order to be effective and transparent. Most important is that they be developed and owned by health, development, and foreign policy actors of the EU member states and institutions. Without their commitment, a recurrence of the 2010 Council Conclusions may happen when COVID-19 is behind us.

Secondly, the EU needs to establish strategic global health capacities within EU

institutions and across different sectors — including trade, energy, and the European Semester of economic and fiscal policy coordination — followed by a clear mandate and solid financial global health resources. A strategic unit with financial, personnel, and thematic resources needs to be created within the EEAS that would have the mandate to coordinate several directorates on global health matters. One Commissioner should clearly be responsible on global health vis-à-vis the European Parliament, the European Council, and individual member states. This could either be the High Representative or the Health Commissioner. The unit in the EEAS would have to collaborate closely with experts from the Commissions' DG SANTE and could liaise with WHO and other multilateral partners more strategically. Moreover, it could also have a specific global health diplomacy function as well as active collaboration with EU delegations contributing to its foreign policy.

Thirdly, the EU could strengthen its health competences domestically to be stronger abroad. Giving attention to, and linking, both the internal and external health dimensions of European policy, the EU could promote the internal strengthening of EU global and public health policy. The programme EU4Health 2021 – 2027, whose eventual budgetary allocation is still uncertain, should enhance European competences and coordination by boosting the EU's preparedness for major cross-border health threats, strengthening health systems across the EU in an equitable way, as well as providing agreement on a common vaccine policy. To complement this, the ECDC could be strengthened and given a more prominent role and mandate in the EU's global health policy-making. It is imperative for the EU to become more strategically autonomous with regard to medical supplies, but this should not be to the detriment of global solidarity.

Fourthly, the COVID-19 pandemic has also shown that EU member states have to act more coherently and in concert with EU institutions as well as during exchanges

with civil society actors to avoid duplicating and contradicting (global) health policies. Therefore, a space for communication, coordination, and collaboration between EU institutions, EU member states, the European Parliament, and civil society actors has to be created in order to enhance the EU and member states' abilities to perform more coherently on the international stage and within international partnerships, such as with WHO. The Global Health Policy Forum could be revived and upgraded for this purpose by broadening its functions as well as expanding membership to include the Council, the Parliament (aside from the Commission), the EEAS, and civil society actors.

Lastly, the EU needs to establish a strategic global health budget to pursue an ambitious agenda that is financially backed. The various budgetary channels that are supporting global health policies should be harmonised, or at least mapped. This would offer an overview of European financial resources for global health, making them transparent for the European public and helping with the strategic decision-making as to which partnerships should be financially supported, depending on the global health issue. Support for WHO could then be much more targeted and in coherence with other partnerships.

Recommendations

To strengthen and deepen its cooperation with WHO, the EU needs to increase its work in the following areas:

■ **Upgrade the EU's status at WHO:** The European Commission and EU member states should jointly ask for an upgrading of the EU's status with WHO to increase the EU's visibility as a powerful unified actor and to enable it to speak with one voice. This could be done either through a resolution, a special agreement, or by strengthening WHO's representation at the EU in Brussels, which is already working not only on a European but on a global mandate. In a first step, the EU

could strengthen the partnership by solidifying the cooperation within a Memorandum of Understanding that replaces the exchanging of letters. More and well-coordinated meetings need to take place between senior representatives of WHO, the European Commission, and the EEAS. Consideration could be given to including representatives of EU member states to keep them engaged.

■ **Extend the EU's cooperation with WHO regional offices:** A new roadmap for the partnership between WHO EURO and the European Commission is currently in the making. Now is the time for EU member states to have a strategic debate on WHO EURO and its future relations with the EU. New priorities and programmes should be aligned with achieving the SDGs – in Europe and globally. In line with the EU's Green Deal objectives, projects with WHO promoting environment and health could equally pave the way for new areas of cooperation. A solid monitoring mechanism for the new five-year plan is key to creating a sustainable impact as well as accounting for joint actions. The establishment of formal relations with WHO regional offices outside of Europe, such as WHO AFRO, would put EU efforts at the country level within a broader synergistic and strategic approach.

■ **Increase and sustain WHO's budget:** WHO's financing is mainly based on individual donor interests, leaving WHO highly dependent and vulnerable to the top 15 donors, which contribute more than 80 per cent of all voluntary contributions. An increase of assessed and core voluntary contributions, as demanded by many experts as well as governments, is necessary to ensure WHO's ability to act on its core functions. Financially, the announced US withdrawal could be partly compensated for by the EU, but the EU should also work for sustainable financing and reform of WHO, including ensuring autonomy and the global public legitimacy of the organisation. Sustainable and long-term predictable financing

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leads to sustainable human resources planning with staff that can implement reforms and deliver what is demanded of WHO.

■ **Consider WHO recommendations and the results of the Independent Panel for Pandemic Preparedness and Response (IPPR):** A high level of political support for WHO can be shown by applying WHO norms and standards at home as well as in international global arrangements. This should include unequivocal financial support by the EU and its member states for – as well as the commitment to – WHO's COVAX facility. WHO's role in global health can also be strengthened by referring to and promoting WHO's role as the supreme global health authority. Based on the WHA resolution, WHO has established the IPPR, which evaluates the global COVID-19 response. This initiative is strongly supported by the EU and its member states and can, as an indirect effect, potentially defuse some of the geopolitical tensions around the global governance of the COVID-19 pandemic. The IPPR was launched in July 2020 and is co-chaired by former Prime Minister of New Zealand Helen Clark and former President of Liberia Ellen Johnson Sirleaf. An interim report to the WHA is expected in November 2020. European countries need to properly consider the results of the independent evaluation and further strengthen the autonomy of WHO.

■ **Lead the WHO reform debates:** The EU should have the ambition to reshape multilateral global health structures while establishing WHO at the centre. The EU should provide voice and leadership in an institutional and legitimate reform process of WHO, which was slow and ineffective before the COVID-19 pandemic. The German – French non-paper already provides relevant proposals.

■ **Develop a new EU global health strategy** that addresses WHO reform and is backed by health, development, and foreign affairs stakeholders from EU institutions and member states. Such a global health strategy should include issues regarding WHO's *raison d'être*, its current organisational structure, areas of focus, and independence during outbreaks of infectious diseases. It should also make choices about, or create a balance between, the EU's desire to uphold multilateral arrangements and simultaneously become more strategically autonomous.

A renewed partnership between the EU and WHO during the COVID-19 pandemic – despite nationalistic trends and geopolitical tensions – offers a glimmer of hope. The EU should seize on this opportunity but not outshine WHO, as collective efforts are needed more than ever to secure global public goods and uphold the international health order.

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The Tragedy of Vaccine Nationalism

Only Cooperation Can End the Pandemic

Thomas J. Bollyky and Chad P. Bown

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The Tragedy of Vaccine Nationalism

Only Cooperation Can End the Pandemic

Thomas J. Bollyky and Chad P. Bown

Trump administration officials have compared the global allocation of vaccines against the coronavirus that causes COVID-19 to oxygen masks dropping inside a depressurizing airplane. “You put on your own first, and then we want to help others as quickly as possible,” Peter Marks, a senior official at the U.S. Food and Drug Administration who oversaw the initial phases of vaccine development for the U.S. government, said during a panel discussion in June. The major difference, of course, is that airplane oxygen masks do not drop only in first class—which is the equivalent of what will happen when vaccines eventually become available if governments delay providing access to them to people in other countries.

By early July, there were 160 candidate vaccines against the new coronavirus in development, with 21 in clinical trials. Although it will be months, at least, before one or more of those candidates has been proved to be safe and effective and is ready to be delivered, countries that manufacture vaccines (and wealthy ones that do not) are already competing to lock in early access. And to judge from the way governments have acted during the current pandemic and past outbreaks, it seems highly likely that such behavior will persist. Absent an international, enforceable commitment to distribute vaccines globally in an equitable and rational way, leaders will instead prioritize taking care of their own populations over slowing the

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spread of COVID-19 elsewhere or helping protect essential health-care workers and highly vulnerable populations in other countries.

That sort of “vaccine nationalism,” or a “my country first” approach to allocation, will have profound and far-reaching consequences. Without global coordination, countries may bid against one another, driving up the price of vaccines and related materials. Supplies of proven vaccines will be limited initially even in some rich countries, but the greatest suffering will be in low- and middle-income countries. Such places will be forced to watch as their wealthier counterparts deplete supplies and will have to wait months (or longer) for their replenishment. In the interim, health-care workers and billions of elderly and other high-risk inhabitants in poorer countries will go unprotected, which will extend the pandemic, increase its death toll, and imperil already fragile health-care systems and economies. In their quest to obtain vaccines, countries without access to the initial stock will search for any form of leverage they can find, including blocking exports of critical vaccine components, which will lead to the breakdown of supply chains for raw ingredients, syringes, and vials. Desperate governments may also strike short-term deals for vaccines with adverse consequences for their long-term economic, diplomatic, and strategic interests. The result will be not only needless economic and humanitarian hardship but also intense resentment against vaccine-hoarding countries, which will imperil the kind of international cooperation that will be necessary to tackle future outbreaks—not to mention other pressing challenges, such as climate change and nuclear proliferation.

It is not too late for global cooperation to prevail over global dysfunction, but it will require states and their political leaders to change course. What the world needs is an enforceable COVID-19 vaccine trade and investment agreement that would alleviate the fears of leaders in vaccine-producing countries, who worry that sharing their output would make it harder to look after their own populations. Such an agreement could be forged and fostered by existing institutions and systems. And it would not require any novel enforcement mechanisms: the dynamics of vaccine manufacturing and global trade generally create layers of interdependence, which would encourage participants to live up to their commitments. What it would require, however, is leadership on the part of a majority of vaccine-manufacturing countries—including, ideally, the United States.

WINNERS AND LOSERS

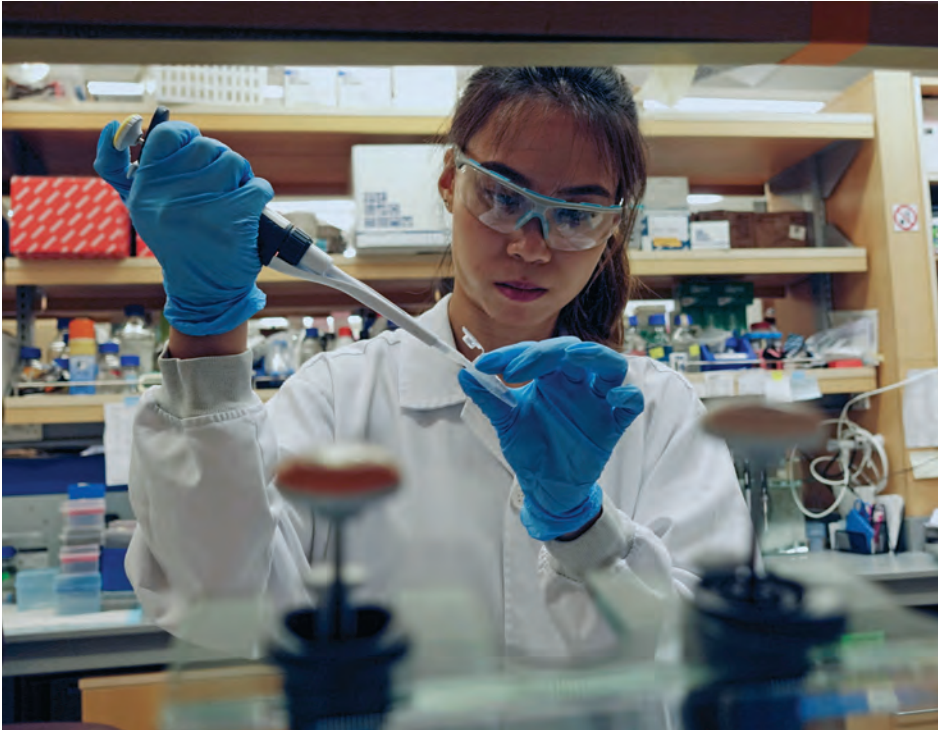
The goal of a vaccine is to raise an immune response so that when a vaccinated person is exposed to the virus, the immune system takes control of the pathogen and the person does not get infected or sick. The vaccine candidates against COVID-19 must be proved to be safe and effective first in animal studies, then in small trials in healthy volunteers, and finally in large trials in representative groups of people, including the elderly, the sick, and the young.

Most of the candidates currently in the pipeline will fail. If one or more vaccines are proved to be safe and effective at preventing infection and a large enough share of a population gets vaccinated, the number of susceptible individuals will fall to the point where the coronavirus will not be able to spread. That population-wide protection, or “herd immunity,” would benefit everyone, whether vaccinated or not.

It is not clear yet whether achieving herd immunity will be possible with this coronavirus. A COVID-19 vaccine may prove to be more like the vaccines that protect against influenza: a critical public health tool that reduces the risk of contracting the disease, experiencing its most severe symptoms, and dying from it, but that does not completely prevent the spread of the virus. Nevertheless, given the potential of vaccines to end or contain the most deadly pandemic in a century, world leaders as varied as French President Emmanuel Macron, Chinese President Xi Jinping, and UN Secretary-General António Guterres have referred to them as global public goods—a resource to be made available to all, with the use of a vaccine in one country not interfering with its use in another.

At least initially, however, that will not be the reality. During the period when global supplies of COVID-19 vaccines remain limited, providing them to some people will necessarily delay access for others. That bottleneck will prevent any vaccine from becoming a truly global public good.

Vaccine manufacturing is an expensive, complex process, in which even subtle changes may alter the purity, safety, or efficacy of the final product. That is why regulators license not just the finished vaccine but each stage of production and each facility where it occurs. Making a vaccine involves purifying raw ingredients; formulating and adding stabilizers, preservatives, and adjuvants (substances that increase the immune response); and packaging doses into vials or syringes. A few dozen companies all over the world can carry out that last step, known as “fill and finish.” And far fewer can handle the quality-controlled



Going viral: a coronavirus researcher in Singapore, March 2020

manufacture of active ingredients—especially for more novel, sophisticated vaccines, whose production has been dominated historically by just four large multinational firms based in the United States, the United Kingdom, and the European Union. Roughly a dozen other companies now have some ability to manufacture such vaccines at scale, including a few large outfits, such as the Serum Institute of India, the world's largest producer of vaccines. But most are small manufacturers that would be unable to produce billions of doses.

Further complicating the picture is that some of today's leading COVID-19 vaccine candidates are based on emerging technologies that have never before been licensed. Scaling up production and ensuring timely approvals for these novel vaccines will be challenging, even for rich countries with experienced regulators. All of this suggests that the manufacture of COVID-19 vaccines will be limited to a handful of countries.

And even after vaccines are ready, a number of factors might delay their availability to nonmanufacturing states. Authorities in producing countries might insist on vaccinating large numbers of people in their own populations before sharing a vaccine with other countries.

There might also turn out to be technical limits on the volume of doses and related vaccine materials that companies can produce each day. And poor countries might not have adequate systems to deliver and administer whatever vaccines they do manage to get.

During that inevitable period of delay, there will be many losers, especially poorer countries. But some rich countries will suffer, too, including those that sought to develop and manufacture their own vaccines but bet exclusively on the wrong candidates. By rejecting cooperation with others, those countries will have gambled their national health on hyped views of their own exceptionalism.

And even “winning” countries will needlessly suffer in the absence of an enforceable scheme to share proven vaccines. If health systems collapse under the strain of the pandemic and foreign consumers are ill or dying, there will be less global demand for export-dependent industries in rich countries, such as aircraft or automobiles. If foreign workers are under lockdown and cannot do their jobs, cross-border supply chains will be disrupted, and even countries with vaccine supplies will be deprived of the imported parts and services they need to keep their economies moving.

PAGING DR. HOBBS

Forecasts project that the coronavirus pandemic could kill 40 million people and reduce global economic output by \$12.5 trillion by the end of 2021. Ending this pandemic as soon as possible is in everyone’s interest. Yet in most capitals, appeals for a global approach have gone unheeded.

In fact, the early months of the pandemic involved a decided shift in the wrong direction. In the face of global shortages, first China; then France, Germany, and the European Union; and finally the United States hoarded supplies of respirators, surgical masks, and gloves for their own hospital workers’ use. Overall, more than 70 countries plus the European Union imposed export controls on local supplies of personal protective equipment, ventilators, or medicines during the first four months of the pandemic. That group includes most of the countries where potential COVID-19 vaccines are being manufactured.

Such hoarding is not new. A vaccine was developed in just seven months for the 2009 pandemic of the influenza A virus H1N1, also known as swine flu, which killed as many as 284,000 people globally. But wealthy countries bought up virtually all the supplies of the vaccine. After the World Health Organization appealed for do-

nations, Australia, Canada, the United States, and six other countries agreed to share ten percent of their vaccines with poorer countries, but only after determining that their remaining supplies would be sufficient to meet domestic needs.

Nongovernmental and nonprofit organizations have adopted two limited strategies to reduce the risk of such vaccine nationalism in the case of COVID-19. First, CEPI (the Coalition for Epidemic Preparedness Innovations) the Bill & Melinda Gates Foundation, the nongovernmental vaccine partnership known as Gavi, and other donors have developed

Vaccine allocation resembles the classic game theory problem known as “the prisoner’s dilemma.”

plans to shorten the queue for vaccines by investing early in the manufacturing and distribution capacity for promising candidates, even before their safety and efficacy have been established. The hope is that doing so will reduce delays in ramping up supplies in poor countries.

This approach is sensible but competes with better-resourced national initiatives to pool scientific expertise and augment manufacturing capacity. What is more, shortening the queue in this manner may exclude middle-income countries such as Pakistan, South Africa, and most Latin American states, which do not meet the criteria for receiving donor assistance. It would also fail to address the fact that the governments of manufacturing countries might seize more vaccine stocks than they need, regardless of the suffering elsewhere.

An alternative approach is to try to eliminate the queue altogether. More than a dozen countries and philanthropies made initial pledges of \$8 billion to the Access to COVID-19 Tools (ACT) Accelerator, an initiative dedicated to the rapid development and equitable deployment of vaccines, therapeutics, and diagnostics for COVID-19. The ACT Accelerator, however, has so far failed to attract major vaccine-manufacturing states, including the United States and India. In the United States, the Trump administration has instead devoted nearly \$10 billion to Operation Warp Speed, a program designed to deliver hundreds of millions of COVID-19 vaccines by January 2021—but only to Americans. Meanwhile, Adar Poonawalla, the chief executive of the Serum Institute of India, has stated that “at least initially,” any vaccine the company produces will go to India’s 1.3 billion people. Other vaccine developers have made similar statements, pledging that host governments or advanced purchasers will get the early doses if supplies are limited.

Given the lack of confidence that any cooperative effort would be able to overcome such obstacles, more and more countries have tried to secure their own supplies. France, Germany, Italy, and the Netherlands formed the Inclusive Vaccine Alliance to jointly negotiate with vaccine developers and producers. That alliance is now part of a larger European Commission effort to negotiate with manufacturers on behalf of EU member states to arrange for advance contracts and to reserve doses of promising candidates. In May, Xi told attendees at the World Health Assembly, the decision-making body of the World Health Organization, that if Beijing succeeds in developing a vaccine, it will share the results with the world, but he did not say when. In June, Anthony Fauci, the director of the U.S. National Institute of Allergy and Infectious Diseases, expressed skepticism about that claim and told *The Wall Street Journal* that he expects that the Chinese government will use its vaccines “predominantly for the very large populace of China.” This summer, the United States bought up virtually all the supplies of remdesivir, one of the first drugs proven to work against COVID-19, leaving none for the United Kingdom, the EU, or most of the rest of the world for three months.

LEARNING THE HARD WAY

Global cooperation on vaccine allocation would be the most efficient way to disrupt the spread of the virus. It would also spur economies, avoid supply chain disruptions, and prevent unnecessary geopolitical conflict. Yet if all other vaccine-manufacturing countries are being nationalists, no one will have an incentive to buck the trend. In this respect, vaccine allocation resembles the classic game theory problem known as “the prisoner’s dilemma”—and countries are very much acting like the proverbial prisoner.

“If we have learned anything from the coronavirus and swine flu H1N1 epidemic of 2009,” said Peter Navarro, the globalization skeptic whom President Donald Trump appointed in March to lead the U.S. supply chain response to COVID-19, “it is that we cannot necessarily depend on other countries, even close allies, to supply us with needed items, from face masks to vaccines.” Navarro has done his best to make sure everyone else learns this lesson, as well: shortly after he made that statement, the White House slapped export restrictions on U.S.-manufactured surgical masks, respirators, and gloves, including to many poor countries.

By failing to develop a plan to coordinate the mass manufacture and distribution of vaccines, many governments—including the U.S. government—are writing off the potential for global cooperation. Such cooperation remains possible, but it would require a large number of countries to make an enforceable commitment to sharing in order to overcome leaders' fears of domestic opposition.

The time horizon for most political leaders is short, especially for those facing an imminent election. Many remain unconvinced that voters would understand that the long-term health and economic consequences of the coronavirus spreading unabated abroad are greater than the immediate threat posed by their or their loved ones' having to wait to be vaccinated at home. And to politicians, the potential for opposition at home may seem like a bigger risk than outrage abroad over their hoarding supplies, especially if it is for a limited time and other countries are seen as likely to do the same.

Fortunately, there are ways to weaken this disincentive to cooperate. First, politicians might be more willing to forgo immunizing their entire populations in order to share vaccines with other countries if there were reliable research indicating the number and allocation of doses needed to achieve critical public health objectives at home—such as protecting health-care workers, military personnel, and nursing home staffs; reducing the spread to the elderly and other vulnerable populations; and breaking transmission chains. Having that information would allow elected leaders to pledge to share vaccine supplies with other countries only if they have enough at home to reach those goals. This type of research has long been part of national planning for immunization campaigns. It has revealed, for example, that because influenza vaccines induce a relatively weak immune response in the elderly, older people are much better protected if the vaccination of children, who are the chief spreaders, is prioritized. Such research does not yet exist for COVID-19 but should be part of the expedited clinical trials that companies are currently conducting for vaccine candidates.

A framework agreement on vaccine sharing would also be more likely to succeed if it were undertaken through an established international forum and linked to preventing the export bans and seizures that have disrupted COVID-19-related medical supply chains. Baby steps toward such an agreement have already been taken by a working group of G-20 trade ministers, but that effort needs to be expanded to include public health officials. The result should be a COVID-19 vaccine trade and in-

vestment agreement, which should include an investment fund to purchase vaccines in advance and allocate them, once they have been proved to be safe and effective, on the basis of public health need rather than the size of any individual country's purse. Governments would pay into the investment fund on a subscription basis, with escalating, nonrefundable payments tied to the number of vaccine doses they secured and other milestones of progress. Participation of the poorest countries should be heavily subsidized or free. Such an agreement could leverage the international organizations that already exist for the purchase and distribution of vaccines and medications for HIV/AIDS, tuberculosis, and malaria. The agreement should include an enforceable commitment on the part of participating countries to not place export restrictions on supplies of vaccines and related materials destined for other participating countries.

The agreement could stipulate that if a minimum number of vaccine-producing countries did not participate, it would not enter into force, reducing the risk to early signatories. Some manufacturers would be hesitant to submit to a global allocation plan unless the participating governments committed to indemnification, allowed the use of product liability insurance, or agreed to a capped injury-compensation program to mitigate the manufacturers' risk. Linking the agreement to existing networks of regulators, such as the International Coalition of Medicines Regulatory Authorities, might help ease such concerns and would also help create a more transparent pathway to the licensing of vaccines, instill global confidence, reduce development costs, and expedite access in less remunerative markets.

WHAT YOU DON'T KNOW CAN HURT (AND HELP) YOU

Even if policymakers can be convinced about the benefits of sharing, cooperation will remain a nonstarter if there is nothing to prevent countries from reneging on an agreement and seizing local supplies of a vaccine once it has been proved to be safe and effective. Cooperation will ensue only when countries are convinced that it can be enforced.

The key thing to understand is that allocating COVID-19 vaccines will not be a one-off experience: multiple safe and effective vaccines may eventually emerge, each with different strengths and benefits. If one country were to deny others access to an early vaccine, those other countries could be expected to reciprocate by withholding potentially more effective vaccines they might develop later. And game theory makes clear that, even for the most selfish players, incentives for co-

operation improve when the game is repeated and players can credibly threaten quick and effective punishment for cheating.

Which vaccine turns out to be most effective may vary by the target patient population and setting. Some may be more suitable for children or for places with limited refrigeration. Yet because the various vaccine candidates still in development require different ingredients and different types of manufacturing facilities, no one country, not even the United States, will be able to build all the facilities that may later prove useful.

Today's vaccine supply chains are also unavoidably global. The country lucky enough to manufacture the first proven vaccine is unlikely to have all the inputs necessary to scale up and sustain produc-

Today's vaccine supply chains are unavoidably global.

tion. For example, a number of vaccine candidates use the same adjuvant, a substance produced from a natural compound extracted from the Chilean soapbark tree. This compound comes mostly from Chile and is processed in

Sweden. Although Chile and Sweden do not manufacture vaccines, they would be able to rely on their control of the limited supply of this input to ensure access to the eventual output. Vaccine supply chains abound with such situations. Because the science has not settled on which vaccine will work best, it is impossible to fully anticipate and thus prepare for all the needed inputs.

The Trump administration, as well as some in Congress, has blamed the United States' failure to produce vast supplies of everything it needs to respond to COVID-19 on "dependency." But when it comes to creating an enforceable international vaccine agreement, complex cross-border supply chains are a feature, not a bug. Even countries without vaccine-manufacturing capacity can credibly threaten to hold up input supplies to the United States or other vaccine-manufacturing countries if they engage in vaccine nationalism.

The Trump administration was reminded of this dynamic in April, when the president invoked the Defense Production Act and threatened to ban exports to Canada and Mexico of respirators made by 3M. Had Trump followed through, Canada could have retaliated by halting exports of hospital-grade pulp that U.S. companies needed to produce surgical masks and gowns. Or Canada could have stopped Canadian nurses and hospital workers from crossing the border into

Michigan, where they were desperately needed to treat American patients. Mexico, for its part, could have cut off the supply of motors and other components that U.S. companies needed to make ventilators. The White House seemed unaware of these potential vulnerabilities. Once it got up to speed, the administration backed off.

Of course, the Trump administration should have already learned that trading partners—even historical allies—are willing and able to swiftly and effectively retaliate against one another if someone breaks an agreement. In early 2018, this was apparently an unknown—at least to Navarro. Explaining why Trump was planning to put tariffs on steel and aluminum, Navarro reassured Americans: “I don’t believe there is any country in the world that is going to retaliate,” he declared. After Trump imposed the duties, Canada, Mexico, and the European Union, along with China, Russia, and Turkey, all immediately retaliated. The EU went through a similar learning experience in March. The European Commission originally imposed a broad set of export restrictions on personal protective equipment. It was forced to quickly scale them back after realizing that cutting off non-EU members, such as Norway and Switzerland, could imperil the flow of parts that companies based in the EU needed to supply the EU’s own member states with medical supplies.

American and European policymakers now understand—or at least should understand—that what they don’t know about cross-border flows can hurt them. Paradoxically, this lack of information may help convince skeptical policymakers to maintain the interdependence needed to fight the pandemic. Not knowing what they don’t know reduces the risk that governments will renege on a deal tomorrow that is in their own best interest to sign on to today.

THE POWER OF FOMO

When the oxygen masks drop in a depressurizing plane, they drop at the same time in every part of the plane because time is of the essence and because that is the best way to ensure the safety of all onboard. The same is true of the global, equitable allocation of safe and effective vaccines against COVID-19.

Vaccine nationalism is not just morally and ethically reprehensible: it is contrary to every country’s economic, strategic, and health interests. If rich, powerful countries choose that path, there will be no winners—ultimately, every country will be a loser. The world is not

doomed to learn this the hard way, however. All the necessary tools exist to forge an agreement that would encourage cooperation and limit the appeal of shortsighted “my country first” approaches.

But time is running out: the closer the world gets to the day when the first proven vaccines emerge, the less time there is to set up an equitable, enforceable system for allocating them. As a first step, a coalition of political leaders from countries representing at least 50 percent of global vaccine-manufacturing capacity must get together and instruct their public health officials and trade ministers to get out of their silos and work together. Combining forces, they should hammer out a short-term agreement that articulates the conditions for sharing, including with the legions of poorer, nonmanufacturing countries, and makes clear what would happen to participants who subsequently reneged and undertook vaccine nationalism. Such a step would get the ball rolling and convince even more of the manufacturing countries to sign on. The fear of missing out on vaccine access, in the event their countries’ own vaccine candidates fail, may be what it takes to pressure even today’s most reluctant leaders to cooperate. 🌐

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Session Four

The Future of Climate Change Beyond the Paris Agreement

WTO Members Must Adopt a Climate Waiver

Author: [James Bacchus](#)

December 17, 2018

Ocean freighter carrying cargo containers

The world is heading towards a collision between the two legal frameworks that support trade and address climate change: The World Trade Organization (WTO) agreements and the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC). The WTO agreements encompass the rules that govern international trade, while the Paris Agreement sets out ways in which countries can mitigate climate change through domestic actions. The complex connections between trade and climate change must be addressed by the WTO and the Conference of the Parties to the UNFCCC. If they are not addressed, a clash will soon occur and the world's efforts to continue global trade and fight against climate change will both be put at significant risk.

Unavoidably, actions to slow down climate change will restrict or affect trade. As countries everywhere begin to increase the number of actions to mitigate climate change issues with how to do this and adhere to the rules of the WTO will emerge. Actions that affect the flow of trade, even if they are taken to mitigate climate change, will surely lead to dispute settlement in the WTO. So, what are countries to do?

To minimize the political and economic risks of a collision between the WTO rules and the Paris Agreement, the WTO members must adopt a climate waiver. Among the options available under WTO law, a climate waiver that allows countries to take domestic measures to advance the global struggle against climate change while not altering the trade rules generally would do the most to help slow climate change while posing the least risk to the basic rules of the world trading system.

To further carbon pricing and to facilitate the transition to a green global economy, the core of the content of a WTO climate waiver should allow a country to restrict trade in favor of climate change. Countries could discriminate based on the amount of carbon and other greenhouse gases used or emitted in the making of a product, but in doing so they must be consistent with the Paris Agreement and not discriminate in an arbitrary or unjustifiable way that impacts international trade.

For this waiver to work, climate negotiators must agree on how to measure greenhouse gas emissions, and they must also agree on a definition of a climate response measure. Moreover, the wording of a WTO climate waiver will need to be precise in setting out these requirements so that the availability of the waiver can be confined to true climate response measures.

Developed countries will be tempted to employ a climate waiver as a cloak for merely protectionist measures. In turn, developing countries will be rightly apprehensive that they will do so and unduly restrict trade under an argument that certain goods do not meet higher environmental standards. But, if carefully crafted and if scrupulously limited only to measures that meet these requirements, a WTO climate waiver will, indeed, do the most toward addressing climate change while risking the least to the multilateral trading system. A WTO climate waiver will enable the continuation of the flow of trade while also imposing a price on trade when it is fueled by the emission of carbon and other greenhouse gases.

A climate waiver will allow certain trade restrictions but contain them to legitimate mitigation efforts only. A climate waiver will also give WTO judges the legal tool to be able to distinguish a justifiable climate measure from one that is not in the event that a clash between trade and climate is taken up at the WTO through dispute settlement. In the absence of a climate waiver WTO judges are left largely to draw the lines themselves when one country claims there is a WTO violation and another country insists the violation is justified.

The adoption of a WTO climate waiver will not alone prevent a collision between trade and climate change. A climate waiver should be accompanied by other WTO actions to clarify and reinforce the consistency of WTO rules with ambitious efforts globally to mitigate and adapt to climate change. Furthermore, a climate waiver should be the first of many ways in which the WTO revises rules in accordance with the global objectives of sustainable development. A successful conclusion to the negotiations on an agreement to eliminate duties on environmental goods would be a good start—but only a start. The objectives of sustainable development include but also extend much beyond the challenge of climate change to encompass all the global economic, environmental, and social objectives that have been agreed by the members of the United Nations in the UN Sustainable Development Goals for 2030.

This article originally appeared in [Law360](#).

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What Is a Climate Response Measure?

Breaking the Trade Taboo in Confronting Climate Change

James Bacchus

CIGI Masthead

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Executive Summary

Trade has become a taboo topic in climate negotiations on the implementation of the Paris climate agreement. This must change. The nexus between trade and climate change must be addressed in the climate regime. In particular, a definition is needed that will clarify the meaning of a climate “response measure.” Without a definition provided by climate negotiators, the task of defining which national climate measures are permissible and which are not when they restrict trade while pursuing climate mitigation and adaptation will be left to the judges of the World Trade Organization (WTO). To avoid a collision between the climate and trade regimes that will potentially be harmful to both, the ongoing deliberation on response measures in the climate regime must be reframed by ending the climate taboo on trade. In the line-drawing that will be unavoidable in securing a consensus among developed and developing countries on a definition of a response measure, several crucial questions must be asked and answered. To support more ambitious climate actions, the national measures included within the definition of a response measure should not be limited only to those measures taken in furtherance of the fulfilment of countries’ current voluntary “nationally determined contributions” (NDCs) to climate mitigation and adaptation under the Paris Agreement. For the same reason, the kinds of national measures included within the definition of a response measure must not be limited to a specific list, but rather could be identified in an illustrative and non-exhaustive list that would allow for unforeseen innovation in national responses to climate change. National measures that address climate change but also restrict trade should not be excluded from the definition of a response measure if they are truly intended to address climate change. Certain kinds of discriminatory trade effects should be permitted in a response measure if those effects are indeed part of a national measure to mitigate climate change. However, trade protection in the guise of climate mitigation should not be included within the definition of a response measure if the climate mitigation in the measure is only a guise — if it is cloaked in a climate disguise and if the genuine aim of the measure is only trade protection. In exchange for their agreement to a definition of a response measure that includes measures that

apply restrictions on trade, developing countries apprehensive of “green protectionism” should be offered increased and accelerated climate finance, technology transfer, and capacity building for mitigating and adapting to climate change, and also additional concessions in agricultural and other sectors of trade that will enable them to maximize their gains from their comparative advantages in the global marketplace. The best approach to reframing climate work on response measures would be for the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) to work in concert with the members of the WTO in crafting a definition of a response measure that could be agreed by the COP. The WTO could then recognize and use that definition in the trade regime through reliance in dispute settlement, adoption of an amendment to the trade rules, a legal interpretation of trade rules or, ideally, incorporation of the definition in a WTO climate waiver. Reaching agreement on the definition of a climate response measure must be placed at the top of the agenda of the climate forum entrusted with dealing with the impacts of national measures taken in response to climate change.

Introduction

Speaking at the twenty-fourth Conference of the Parties (COP24) in Katowice, Poland, in December 2018, Senior Economic Officer Alexey Vikhlyayev of the United Nations Conference on Trade and Development (UNCTAD) summed up succinctly a global challenge confronting both the international climate and trade regimes that has been largely ignored in international deliberations: “Both trade and climate are central to the 2030 Agenda of the United Nations. But trade has become a taboo subject when talking about climate change. This should not be the case.”¹

National measures taken to mitigate climate change can have impacts that cross national borders. These impacts can be “social, economic or environmental,” and they can have “a strong

1 UNCTAD, “Tackling trade in trying times” (19 December 2018), online: <<https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1966>>.

connection to sustainable development.”² These transnational consequences of national efforts to combat climate change can be desirable, providing such “co-benefits” from addressing climate change as cleaner air, improved health, enhanced technology and green growth in productivity. They can be part of the green transition urgently needed to shift the world away from a global economy heavily dependent on the fossil fuels that are causing global warming and toward sustainable energy sources.

These impacts can also be undesirable. In particular, because of the interconnected nature of the global economy, national measures that regulate, restrict or prohibit certain economic actions and that encourage or support others, for the purpose of mitigating climate change, can have negative economic effects on other countries and especially on the developing countries that are much in need of sustainable development. National measures that alter the mix of energy that goes into the making of products by imposing a price on the use of carbon will also alter the relative prices of those products in global markets. This change in relative prices will have negative effects on the international competitiveness of those countries that have put either a lower price or no price on the use of carbon in production. These negative effects may also frustrate access for developing countries to foreign markets and, as a result, affect trade.

Producers in developed countries are reluctant to support national climate action, in part, because they fear they will be disadvantaged in trade by “carbon leakage.” They fear that if a price is put domestically on the use of carbon in making their products, then their products will be displaced both at home and abroad by cheaper products from countries that have not done so. Developed countries worry that both domestic and foreign sales of their products may be displaced by lower-priced, higher-carbon products from other, mostly developing, countries.

This concern is especially widespread among “energy-intensive, trade exposed” industries such as steel, aluminium, cement, pulp and paper, metal casting, glass and chemicals. These heavy-manufacturing industries use energy-intensive production processes and compete

with foreign products at home and abroad. So, they are apprehensive about the displacement of their carbon-priced exports in other markets and the competition from cheaper, higher-carbon imports in their home markets.

This fear of carbon leakage in developed countries can influence the character and the content of national measures enacted and implemented by those countries under the rubric of confronting climate change. The political price for securing the necessary domestic support to enact such measures may sometimes be a concession to domestic interests fearful of carbon leakage in the form of trade restrictions that have the effect of discriminating against foreign products in the domestic market. Thus, national measures ostensibly taken in response to climate change may also sometimes contain elements of protectionism.

Producers in developing countries fear the impacts on the competitiveness of their products from actions taken in developed countries to prevent carbon leakage. Many developing countries are concerned that measures ostensibly taken by developed countries to reduce greenhouse gas emissions will instead be protectionist measures taken to restrict imports. Thus, for some time, “most developing countries...have been voicing their concern in relevant multilateral fora about the possible implementation of response measures linked to trade that may be detrimental to their exports.”³ In the view of many developing countries, when developed countries enact climate measures that contain trade restrictions, they “seek...to transfer the costs of implementing their environmental obligations...to developing countries, and thereby not lose competitiveness vis-à-vis these countries. In this context, these measures have a greater impact on exports from developing countries.”⁴ For this reason, developing countries see these actions by developed countries as green protectionism.⁵

2 Andrei Marcu & Wijnand Stoefs, *The Role of Response Measures in Ensuring the Sustainable Transition to a Low-GHG Economy* (Geneva: International Centre for Trade and Sustainable Development, 2017) at 3.

3 Maria Victoria Lottici, Carlos Galperin & Julia Hoppstock, “‘Green Trade Protectionism’: An Analysis of Three New Issues that Affect Developing Countries” (2014) 2:2 Chinese J Urban & Envtl Stud 1 at 13.

4 *Ibid* at 2.

5 *Ibid*.

The Coming Collision of Trade and Climate Change

In the climate regime, the discussion of climate response measures has generally been limited to the narrow context of the adverse extraterritorial effects of domestic climate policies adopted by developed countries. Although this discussion has continued for many years, it has not yet led to any agreed resolution. Furthermore, although the topic of trade has often been a part of this climate discussion, there has long been a hesitancy among climate negotiators to grapple more broadly with the international legal implications of the connections between national responses to climate change and trade and trade law.

But international trade law exists, it applies to much that is likely to happen in climate action and, without any change in the current rules of the multilateral trading system based in the WTO, the contrasting views of developed and developing countries on the merits of the trade effects of national measures that are labelled as climate response measures will soon become legal arguments in international trade disputes in WTO dispute settlement. For example, where national measures restrict or otherwise affect trade while attempting to mitigate climate change, they fall within the jurisdictional scope of the WTO treaty and they raise some fundamental questions under international trade law.

As Peter Govindasamy writes, “The inter-linkages between response measures and the WTO will become more pronounced as parties implement their pre-2020 climate actions and post-2020 nationally determined contributions” under the Paris climate agreement.⁶ “Trade disputes are more likely in a world of uncoordinated and conflicting national responses to climate challenges.”⁷ Foreseeing the coming collision between the international trade and climate change regimes, climate scientists on the Intergovernmental Panel on Climate Change

(IPCC), in their Fifth Assessment Report in 2014, called for “pre-emptive cooperation” between the trade and climate regimes, noting that “there are numerous and diverse explored opportunities for greater international cooperation in trade-climate interactions. While mutually destructive conflicts between the two systems have thus far been largely avoided, pre-emptive cooperation could protect against such developments in the future.”⁸

Trade restrictions that are claimed to relate to climate concerns may take many forms, touching on many different WTO rules. They may be in the form of carbon taxes, other border carbon adjustments, cap-and-trade systems, technical regulations, standards, labelling requirements, import emissions allowances and more. An analysis of the current national climate pledges under the Paris Agreement shows that, already, 18 refer to regulating trade based on climate grounds, 17 anticipate using standards or labelling requirements, 10 refer to fossil fuel subsidy reform and one mentions the possibility of introducing border carbon adjustments.⁹ As Clara Brandi reported, “[t]rade-related elements feature prominently in climate contributions under the Paris Agreement,” and “around 45 percent of all climate contributions include a direct reference to trade or trade measures.”¹⁰ With climate change accelerating, countries are being urged to increase their climate ambitions. Many are preparing to “ratchet up” their climate contributions by 2020 and in the following years. As they do so, the scope for climate-trade interactions will likely broaden. Without further clarification of the climate-trade relationship or the issue of response measures, a collision between the climate and trade regimes will occur sooner than many expect.¹¹

The climate regime does not provide a dispute settlement system to deal with this approaching collision. Article 14 of the UNFCCC contemplates the resolution of disputes through negotiation, submission to the International Court of Justice,

6 Peter Govindasamy, “Economic Development and Climate Protection: Coloring, Texturing and Shading of Response Measures in Sustainable Development” (2015) 2:2 Chinese J Urban & Envtl Stud 1 at 5.

7 *Ibid.*

8 IPCC, *Climate Change 2014: Mitigation of Climate Change*, Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (New York: Cambridge University Press, 2014), ch 13 (International Cooperation: Agreements & Instruments).

9 Clara Brandi, “Trade Elements in Countries’ Climate Contributions under the Paris Agreement” (2017) Geneva: International Centre for Trade and Sustainable Development at vii.

10 *Ibid.*

11 James Bacchus, “The Case for a WTO Climate Waiver” CIGI, Special Report, 2 November 2017 at 1–4 [Bacchus, “The Case”].

arbitration or conciliation.¹² Article 14.2(b) of the UNFCCC envisages “[a]rbitration with procedures to be adopted by the Conference of the Parties as soon as practicable, in an annex on arbitration.”¹³ However, nearly three decades after the agreement on the UNFCCC in 1992, an annex on arbitration has yet to be adopted by the COP.

Article 24 of the Paris Agreement specifies, “The provisions of Article 14 of the Convention on settlement of disputes shall apply mutatis mutandis to this Agreement.”¹⁴ Because the COP has taken no action to give effect to article 14, this article in the Paris Agreement is, at least for now, rendered meaningless. With all else that was on the table in Paris, the negotiation of a separate climate dispute settlement system under the Paris Agreement was widely seen as reaching too high. Instead, the Paris climate regime has been “lightly legalized” and has “generally adopted a managerial rather than an enforcement approach to compliance.”¹⁵

Specifically, the implementation of and compliance with the Paris Agreement by parties to the agreement is to be assured by a “facilitative” and “non-punitive” committee. This will be done in a non-adversarial setting that will little resemble the adversarial litigation in the WTO.¹⁶ Thus, should a conflict arise between parties to the Paris Agreement about the impacts of the implementation of domestic climate policies on trade, there is no binding enforcement mechanism within the UNFCCC to resolve such a dispute.

Such a dispute would therefore most likely be resolved in the WTO. After all, 164 of the 195 parties to the UNFCCC are also members of the WTO. Therefore, when a dispute arises between a party implementing a trade-restrictive climate measure and a party suffering from the trade restriction, the WTO will have jurisdiction over the dispute if both

parties are also WTO members.¹⁷ In such a dispute, WTO judges will doubtless rely on a definition by the climate regime of a legitimate climate response measure — if there is one. If, however, there is not an agreed definition, then, to do their job of resolving the dispute before them, the WTO judges will have to decide for themselves, based on the case before them at the time, whether a challenged measure is in fact a climate response measure. Thus, one of the principal tasks of the climate regime will be fulfilled by the trade regime — a less than ideal result for both climate and trade governance.

Climate Negotiations on Response Measures

The UNFCCC of 1992, the 1997 Kyoto Protocol to the UNFCCC and the Paris Agreement concluded at COP21 in 2015 all contain some general provisions on the cross-border impacts of so-called climate response measures, including on trade. But these international agreements are all silent on the definition of a climate response measure. They do little to delineate the relationship between climate measures and trade in anything approaching definitive terms.

Despite the absence of legal clarification, there is, among the parties to the Paris Agreement, a broad recognition that climate measures should not constitute arbitrary or unjustifiable discrimination or a disguised restriction on trade. Moreover, there is broad agreement that countries should aim to reduce any negative economic and social impacts of climate measures as much as possible. These views have existed and persisted since the outset of the climate regime at the Rio Earth Summit in 1992.

Yet, for more than a quarter century since, climate deliberations on the impacts of climate response measures have been highly contentious, controversial and even more politicized than most other divisive climate issues. Also, these deliberations have long been more procedural than substantive. They have yet to delve deeply into the complex substantive nuances of the nexus between trade and climate change. Although there has been

12 UNFCCC, 9 May 1992, 1771 UNTS 107, 31 ILM 849, art 14 (entered into force 21 March 1994).

13 *Ibid*, art 14.2(b).

14 *Paris Agreement*, Dec CP.21, UNFCCC, 21st Sess, UN Doc FCCC/CP/2015/L.9 (2015), art 24.

15 The author owes this phrasing and this observation to his CIGI colleague Géraud de Lassus Saint-Geniès. For an examination of the cultural reasons in the climate regime as to why such an approach has been preferred, see Daniel Bodansky, “The role of the ICJ in addressing climate change: some preliminary reflections” (2017) 49 *Ariz St LJ* 689.

16 *Paris Agreement*, *supra* note 14, art 15.

17 Bacchus, “The Case”, *supra* note 11 at 1–4.

a growing recognition of the connections between climate response measures and international trade, the questions of the inclusion of trade restrictions in measures taken to mitigate climate change, and of the legitimacy and legality of such restrictions, have not been answered in the climate talks.

The tendency in the ongoing deliberations on response measures has been to defer the hard decisions that must be made on the question of trade restrictions in national climate measures. As an example, at COP18 in Doha in 2012, some developing countries suggested the inclusion of the following language in the conference outcome document: “Decides that developed country Parties shall not resort to any form of unilateral measures against goods and services from developing country Parties on any grounds related to climate change, including protection and stabilization of the climate, emissions leakage and/or the cost of environmental compliance.”¹⁸

This language was rejected by developed countries as going beyond the terms of the UNFCCC and, in the absence of a consensus, it was not included in the COP18 outcome document. Yet the divide over this issue lingers between developed and developing countries, lurking just below the surface of the continuing climate deliberations on response measures. The countries in the COP remain perfectly free to raise the issue of the impact of unilateral trade measures as part of national climate measures, but the taboo on trade in climate talks has taken hold.

In no small part, this is due to the uncertainty of climate negotiators on the jurisdictional issue of whether the nexus between trade and climate change — including the issue of trade restrictions in climate response measures — is the legal terrain of the climate regime or the trade regime. National climate negotiators have tried to steer clear of any discussions that might give pause to their trade ministries or to their delegates to the WTO. Meanwhile, trade negotiators have been waiting for the climate regime to answer the difficult questions they would rather not have to answer themselves about the connections between trade and climate change. Generally overlooked by both international regimes has been the possibility that the two of them could work together to resolve these issues.

Yet, difficult as it may be to achieve after nearly three decades of failure, the potential for mutual resolution of these issues exists. As Nicholas Chan put it, “the dominance of this dichotomous deadlock — an either/or choice between the UNFCCC and the WTO — does not mean that subtler options do not exist to harmonize action and carefully delineate responsibilities and competencies between the two regimes. Rather, these have been drowned out by efforts that favour one outright over another.”¹⁹

In the first two decades of the climate regime following the establishment of the UNFCCC in 1992, the issue of climate response measures was driven mainly by major oil-exporting developing countries seeking compensation for lost economic opportunities anticipated from prospective climate measures by developed countries that threatened to reduce their oil exports. Over time, a larger group of developing countries became interested in the topic and, in 2010, COP set up a dedicated forum to discuss the impacts of the implementation of response measures. Deliberations in the forum, however, have largely centred on the adverse impacts of climate change on developing countries. They have focused much less on the impacts of the implementation of climate response measures. As seen at COP18 in 2012, attempts to broaden the scope of the forum to include substantive consideration of the overall nexus between climate response measures and trade have had limited success.

Due to divisions between developed and developing countries about the purpose and function of the forum, parties were unable to renew the forum’s mandate after it lapsed at the end of 2013. But, given the importance of the issue of response measures to many countries, breaking the two-year stalemate became critical to securing the conclusion of the Paris Agreement in 2015. In the run-up to the Paris climate conference, the issue of response measures became a key priority for many developing countries, and its ultimate inclusion

18 Ad Hoc Working Group on Long-term Cooperative Action under the Convention, *Informal Overview Text by the Chair*, UNFCCC, 15th Sess, UN Doc FCCC/AWG/LCA/2012/CRP.3 (2012) at 23.

19 Nicholas Chan, “The ‘New’ Impacts of the Implementation of Climate Change Response Measures” (2016) 25:2 RECIEL 228 at 233. Chan cites James Bacchus, *Global Rules for Mutually Supportive and Reinforcing Trade and Climate Regimes*, E15 Expert Group on Measures to Address Climate Change and the Trade System – Policy Options Paper (Geneva: International Centre for Trade and Sustainable Development and World Economic Forum, 2016).

in the new climate accord was critical in forging a consensus in favour of the overall agreement.²⁰

In Paris, the parties agreed to continue the forum and to improve it by having it serve the Paris Agreement. For the forum's work program running from 2016 to 2018, the parties decided to focus on two items — economic diversification and transformation — and a just transition of the workforce and the creation of decent work and quality jobs.²¹ These continue to be the two priorities of the forum following COP24 in Poland in December 2018. A committee of experts was charged at COP24 with developing and recommending a six-year work plan on response measures to the subsidiary bodies of the UNFCCC at their session in Bonn in June 2019.

These two themes show how much the issue of response measures has evolved during the past two decades. Gradually, the emphasis has shifted from the compensation argument advanced by oil-rich developing countries to dealing instead with the economic and social impacts of the transition toward a low-carbon economy. Parties are looking at the issue much more now through the lens of sustainable development. The debate is no longer driven primarily by oil-exporting developing countries or developing countries more generally. Rather, the debate is among all countries over issues facing both developed and developing countries, albeit in different ways. Developed countries have become primarily concerned with the impacts that climate measures could have on their international competitiveness. Equally, competitiveness is a consideration for developing countries, but they are generally more focused on the effects of response measures on their vulnerability, resilience, economic transformation and standards of living.²²

To advance work on the technical aspects of these two items on the work program of the improved forum in the context of sustainable development, parties agreed at COP22 in Marrakesh in 2016

to establish an ad hoc technical expert group.²³ The work of this expert group is under way, but attempts to make the group permanent have not, thus far, been successful. Efforts at getting the technical expert group going continued at COP24 in Poland in December 2018. Also, among the lengthy list of topics identified for future consideration by the forum at COP24 was the “impacts of the implementation of response measures on economic development in relation to trade.”²⁴ This general statement, however, was as far as the forum would go in official actions of the latest global climate conference.

In the past few years, there have been several discussions and workshops on the two areas of the work program of the improved climate response forum, as well as deliberations on the ways in which the forum will best serve the purposes of the Paris Agreement. These discussions have demonstrated the growing importance of the issue of response measures as part of the overall effort to forestall and fight back against climate change.

And yet, although parties have increasingly engaged on the issue of response measures, and the tacit meaning of the term has evolved to focus on achieving a sustainable transition for all countries, no attempt has been made by the UNFCCC to define a climate response measure. The absence of an agreement on the definition of a response measure poses a real risk to the success of the Paris climate regime, as a growing number of countries begin to implement increasingly ambitious and diverse response measures to climate change, including measures that will affect international trade.

The sum of countries' current self-declared climate targets falls significantly short of the emissions cuts needed to reach the 2°C goal. According to the UN Environment Programme (UNEP), even full implementation of current NDCs (countries' individual climate action pledges) will deliver only one-third of the emissions cuts needed to keep global warming below the 2°C limit. Without deeper emissions

20 Chan, *supra* note 19 at 232–35.

21 *Improved forum and work programme: Revised draft conclusions proposed by the Chairs*, UNFCCC, 44th Sess, UN Doc FCCC/SB/2016/L.2/Rev. 1 (2016).

22 Marcu & Stoefs, *supra* note 2 at 20.

23 *Report of the Subsidiary Body for Scientific and Technical Advice on its forty-fifth session, held in Marrakesh from 7 to 15 November 2016*, UNFCCC, 45th Sess, UN Doc FCCC/SBSTA/2016/4 (2017) at para 61.

24 “Summary of the Katowice Climate Change Conference: 2–15 December 2018” (2018) 12:747 *Earth Negotiations Bull* 1 at 27.

cuts, this puts the world on a path toward a 3°C increase from pre-industrial levels by 2100.²⁵

Meanwhile, climate scientists are now saying that limiting temperature increases by 2100 to 2°C above pre-industrial levels will not be enough to avoid the worst effects of climate change. Rather, we should be aiming for the loftier Paris goal of limiting temperature increases by the end of the century to 1.5°C.²⁶ Already, the IPCC is reporting with high confidence that “[h]uman activities are estimated to have caused approximately 1.0C of global warming above pre-industrial levels, with a *likely* range of 0.8C to 1.2C. Global warming is *likely* to reach 1.5C between 2030 and 2052 if it continues to increase at the current rate.”²⁷ Thus, urgently needed are real transformational changes driven by impactful climate measures that will help speed up the necessary transition to a low-carbon and eventually a no-carbon world.

But when these response measures restrict trade and therefore challenge existing trade rules, how can it be determined if they are legitimate measures that truly are intended to address climate change when there is no agreed definition of a climate response measure? And without a definition of a response measure, how can countries be given adequate policy space and enough legal certainty to implement ambitious climate measures that may restrict trade without undermining more than 70 years of success in building a global trading system that has helped lift hundreds of millions of people out of poverty?

Climate Law on Response Measures

Although climate negotiators have long largely avoided the taboo of trade in climate deliberations, the potential of climate measures to affect trade has been acknowledged by the climate regime since its beginning in 1992 in the treaty text of the UNFCCC.

In conscious echo of the language in article XX of the General Agreement on Tariffs and Trade (GATT) that sets out the conditions that can justify environmental and other general exceptions to compliance with international trade rules, article 3.5 of the UNFCCC provides: “The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable growth and development in all Parties, particularly developing country parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”²⁸

Among the commitments in the UNFCCC are several that relate to the nexus of response measures and trade.

Article 4.8 of the UNFCCC states that, in implementing their convention commitments, “Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures.”²⁹

According to Farhama Yahmin and Joanna Depledge, the expression “impact of climate measures” generally refers in the climate vernacular to “the negative economic impacts resulting from the implementation of climate mitigation policies.”³⁰ The language in article 4.8 of the UNFCCC clearly reflects a call by developing countries for help to cope not only with the adverse effects of climate change, but also with any negative impacts arising from the implementation of climate measures. It seems clear that climate mitigation policies can include trade restrictions and that the negative economic impact of such policies can include the harms caused by trade restrictions.

25 UNEP, *Emissions Gap Report 2018* (Nairobi, Kenya: UNEP, 2018).

26 IPCC, “Summary for Policymakers” in *Global Warming of 1.5°C* (2018).

27 *Ibid* at 10 [emphasis in original].

28 UNFCCC, *supra* note 12, art 3.6.

29 *Ibid*, art 4.8.

30 Farhama Yahmin & Joanna Depledge, *The International Climate Regime: A Guide to Rules, Institutions and Procedures* (Cambridge, UK: Cambridge University Press, 2004) at 247.

As Chan has explained, “What is crucial about Article 4.8...is the linked recognition of giving consideration to the needs and concerns of developing countries for both the ‘adverse effects of climate change’ and the ‘impact of the implementation of response measures.’ The former addresses the consequences of climate change for developing countries, normally expressed as climate impacts and hence requiring adaptation action; the latter address the consequences of countries’ responses to climate change, hence requiring remedy to these responses. In practical terms, these two themes concern very different substantive matters.”³¹

In 1992, article 4.8 was, in part, a bargaining chip to secure the participation of fossil fuel-producing developing countries that otherwise may not have agreed then to become parties to the UNFCCC. The provision was largely incorporated due to the concerns of those countries about prospective disruptions to their trade and, thus, their economies, that could be caused by climate mitigation measures by developed countries. This is stated specifically in article 4.8(h), which notes the importance of considering “[c]ountries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products.”³²

Article 4.10 of the convention reiterates this point, underscoring the need for parties to “take into consideration in the implementation of the commitments of the Convention the situation of Parties, particularly developing country Parties, with economies that are vulnerable to the adverse effects of the implementation of measures to respond to climate change,” thus stressing again the potential of adverse impacts arising from response measures. The same article further emphasizes that “[t]his applies notably to Parties with economies that are highly dependent on income generated from the production, processing and export, and/or consumption of fossil fuels and associated energy-intensive products and/or the use of fossil fuels for which such Parties have serious difficulties in switching to alternatives.”³³

Yet article 4.8 is in no way limited to the concerns of fossil fuel-producing developing countries. More broadly, it states that the consideration of the “adverse effects of climate change and/or the implementation of response measures” must include:

- small island countries;
- countries with low-lying coastal areas;
- countries with arid and semi-arid areas, forested areas and areas liable to forest decay;
- countries with areas prone to natural disasters;
- countries with areas liable to drought and desertification;
- countries with areas of high urban atmospheric pollution;
- countries with areas of fragile ecosystems, including mountainous ecosystems;
- countries whose economies are highly dependent on income generated from the production, processing and export, and/or consumption of fossil fuels and associated energy-intensive products; and
- landlocked and transit countries.³⁴

As Chan has noted, this long list is “broad enough to conceivably include any developing country.”³⁵

What is more, it is emphasized in article 4.9 of the UNFCCC that, in fulfilling their commitments, “The Parties shall take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology.”³⁶ Presumably, this obligation to stress the needs of the least developing countries applies also in the context of climate response measures.

Climate response measures were addressed next in the Kyoto Protocol to the UNFCCC³⁷ (the 1997 agreement that set emissions reduction

³¹ Chan, *supra* note 19 at 229.

³² UNFCCC, *supra* note 12, art 4.8.

³³ *Ibid*, art 4.10.

³⁴ *Ibid*, art 4.8(a)–(i).

³⁵ Chan, *supra* note 19 at 229, n 5.

³⁶ UNFCCC, *supra* note 12, art 4.9.

³⁷ Kyoto Protocol to the United Nations Framework Convention on Climate Change, 11 December 1997, 2303 UNTS 148, 37 ILM 22 (1998), art 2.3 (entered into force 16 February 2005) [Kyoto Protocol].

targets for developed countries that were parties to the protocol, but required no emissions cuts by developing countries). Article 2.3 of the Kyoto Protocol stipulates that, in implementing climate policies and measures, parties should “minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties.”³⁸

There is no specific mention of trade in the Paris Agreement concluded at COP21 in 2015. Moreover, there is no consensus on whether the underlying obligation on trade in article 3.5 of the UNFCCC continues to apply with respect to all actions taken under the Paris Agreement, including those relating to response measures. This lack of consensus is due to the lack of consensus also on the question of the legal relationship between the UNFCCC and the Paris Agreement. The nature of the legal relationship between the UNFCCC and the Paris Agreement and, thus, the extent to which the principles in the UNFCCC apply to the Paris Agreement, are controversial questions left unresolved by the climate negotiators at COP21.

The decision adopting the Paris Agreement states that the parties to it have decided to “adopt the Paris Agreement *under* the United Nations Framework Convention on Climate Change.”³⁹ The preamble to the Paris Agreement notes that the parties to the agreement are also parties to the UNFCCC and that they are acting “*in pursuit of* the objective of the Convention” and are “*guided by* its principles.”⁴⁰ Article 21 of the Paris Agreement characterizes it as “*enhancing the implementation of* the Convention, including its objective.”⁴¹ But those who negotiated it stopped short of identifying and characterizing the Paris Agreement as a formal legal protocol of the UNFCCC. Thus, the legal relationship between the Paris Agreement and the UNFCCC remains a matter for legal debate.

As a result, so too does the relationship between the trade provisions in article 3.5 of the UNFCCC and the Paris Agreement. Accordingly, so also does the question raised by developing countries at COP18 in 2012 of the legality of unilateral

restrictions on imports that may be imposed by developed countries for climate reasons. If article 3.5 of the UNFCCC applies to the Paris Agreement, then “[m]easures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”⁴² However, if article 3.5 of the UNFCCC does *not* apply to the Paris Agreement, then it can be argued that measures taken by countries “to combat climate change, including unilateral ones,” can “constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”

If viewed solely from a climate perspective, this may not seem like a significant concern. From an exclusively climate perspective, addressing climate change is a transcending concern, and precisely how it may be addressed in any given national measure is less so. The means are less important than the transcending end. But if seen also from a trade perspective, the notion that unilateral climate measures that limit trade can “constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade” is a significant concern indeed. Given the uncertainty about the legal relationship between the UNFCCC and the Paris Agreement, a climate measure that is imposed in a way that constitutes “arbitrary or unjustifiable discrimination or a disguised restriction on international trade” may or may not be illegal because of the application of article 3.5 of the UNFCCC to the Paris Agreement.

However, for the 164 parties to the Paris Agreement that are also members of the WTO, this may not matter. The language in article 3.5 of the UNFCCC constraining the application of trade restrictions is borrowed from the WTO treaty, and all WTO members are bound by their obligations in the WTO treaty. In the absence of any action by the climate regime defining what is a legitimate climate response measure, the legal uncertainty about the relationship between the UNFCCC and the Paris Agreement may well turn out to be one of the contributing causes of a collision between the trade and climate regimes.

Despite the omission of trade from the text of the Paris Agreement, the importance of response measures, including those that may affect trade, is reflected in several places in the agreement. It is

38 *Ibid.*

39 *Adoption of the Paris Agreement*, Dec 1/CP.21, UNFCCC, UN Doc FCCC/CP/2015/10/Add. 1 (2016), Preamble [emphasis added].

40 *Paris Agreement*, *supra* note 14, Preamble [emphasis added].

41 *Ibid.*, art 21 [emphasis added].

42 UNFCCC, *supra* note 12, art 3.5.

acknowledged in the preamble to the agreement “that Parties may be affected not only by climate change, but also by the impacts of the measures taken in response to it.”⁴³ Article 4.2 of the agreement provides, “Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of” their NDCs.⁴⁴ Article 4.15 of the Paris accord urges parties to “take into consideration in the implementation of this Agreement the concerns of Parties with economies most affected by the impacts of response measures, particularly developing country Parties.”⁴⁵ Reinforcing these treaty provisions, the preamble of the decision adopting the Paris Agreement also refers to the issue of response measures, “acknowledging the specific needs and concerns of developing country Parties arising from the impact of the implementation of response measures.”⁴⁶

In the decision accompanying adoption of the treaty, the parties agreed also to continue the response measures forum and to have it serve the Paris Agreement, thus anchoring the forum in the new climate regime.⁴⁷ More specifically, they concurred that the forum shall enhance “cooperation amongst Parties on understanding the impacts of mitigation actions under the Agreement and the exchange of information, experiences, and best practices amongst Parties to raise their resilience to these impacts.”⁴⁸ The forum on response measures is therefore intended to improve countries’ understanding of the impacts of response measures and increase their resilience to them. In addition, the Paris decision requests parties to consider “[i]nformation on the social and economic impact of response measures” when developing the accounting modalities under the transparency framework.⁴⁹

The issue of response measures is therefore firmly integrated into the new climate regime under the Paris Agreement. Parties to the climate agreement clearly have recognized the growing importance of dealing with the impacts of the implementation

of response measures to ensure a sustainable transition to a low-carbon global economy.

And yet, despite the continued application of the term “response measures” throughout the UNFCCC agreements, and the expansion of the scope of the term to underscore the need for a transition to global sustainable development, in the absence of a definition of a climate response measure, it remains unclear which consequences of countries’ actions taken in response to climate change must be accepted, given the overriding urgency of national climate responses and, in particular, which such governmental actions can be considered legitimate climate measures if they restrict or otherwise affect trade.

Overlap with Trade Law

Without efforts to find solutions to reconcile the climate and trade regimes, the absence of a definition of a response measure in climate law risks causing not only a confrontation between the two regimes, but also a “chilling effect” on the enactment of the ambitious national climate measures that are needed immediately. Uncertain of whether climate measures that may restrict trade will pass muster in WTO dispute settlement or, instead, expose them to expensive trade sanctions by the WTO, some parties to the Paris Agreement may choose to rein in their climate ambitions. Constraints on climate ambitions, including those due to legal uncertainty, are in no one’s interest at a time of climate urgency.

Where parties to the Paris Agreement do enact climate measures that restrict or otherwise affect trade, the measures may be inconsistent with the current WTO rules. As previously noted, of the 195 countries that are parties to the Paris Agreement, 164 are members of the WTO and thus are parties to the WTO Agreement.⁵⁰ In the dispute settlement understanding that is part of this agreement, WTO members have agreed to take all their disputes with other members relating to matters falling within the scope of the agreement to WTO

43 *Paris Agreement*, *supra* note 14, Preamble.

44 *Ibid*, art 4.2.

45 *Ibid*, art 4.15.

46 *Adoption of the Paris Agreement*, *supra* note 39, Preamble.

47 *Ibid* at para 33.

48 *Ibid* at para 34.

49 *Ibid* at para 95(f).

50 *Agreement Establishing the World Trade Organization*, 15 April 1994, 1867 UNTS 154, 33 ILM 1144 (1994) [Marrakesh Agreement].

dispute settlement for resolution.⁵¹ Generally, all measures affecting trade, including any restrictions on trade, are within the jurisdictional scope of the WTO Agreement and thus subject to mandatory and binding WTO dispute settlement.

Post-Paris-Agreement, in pursuit of their climate goals, countries will implement increasingly ambitious and diverse climate measures, ranging from carbon taxes, cap-and-trade programs, import emissions allowances, performance standards, and technical regulations to border measures and product bans. Some of these response measures may be taken not only to pursue national climate goals but also to address domestic fears about loss of competitiveness or carbon leakage — a situation where emissions simply move to countries with less ambitious climate measures and hence global emissions are not reduced but simply shifted somewhere else. Such measures may restrict trade and thus be subject to WTO dispute settlement, and the trade restrictions in these measures may be suspect under the current trade rules of the WTO.

How can countries justify such measures as legitimate climate response measures that should not be ruled inconsistent with their WTO obligations if climate response measures have not been defined by the COP to clarify their meaning?

In the run-up to COP21 and the conclusion of the Paris Agreement in 2015, developing countries, reminiscent of their rejected proposal at COP18 in 2012, tried to protect themselves against unilateral measures from developed countries that may affect trade. However, a provision in a preliminary draft of the agreement that “developed country parties shall not resort to any form of unilateral measures against goods and services from developing country parties on any grounds related to climate change” was ultimately seen as too restrictive and so was dropped from the final text. China, India, Pakistan, Saudi Arabia and Sudan were among the parties that supported the language; the United States and the European Union were among those that opposed it.⁵²

The omission from the final text of the more restrictive draft paragraph on the use of unilateral trade-restrictive climate measures can be viewed

as indicating a tacit recognition by the parties that the Paris Agreement will likely result in some forms of trade-restrictive unilateral climate response measures. The still unanswered question is: what forms must such climate response measures take to be regarded as legitimate national actions enacted and applied to mitigate or adapt to climate change?

In answering this question, it will be necessary to reframe the debate over response measures. No longer should the topic of trade be taboo in climate negotiations over how best to respond to climate change. Starting now, trade must be at the centre of the debate about response measures, and trade must especially be at the centre of the debate about how to define response measures.

What Should Be Included in the Definition of a Climate Response Measure?

The task of defining a response measure in ongoing climate negotiations will necessarily require a legal line that will include some measures, but not others, within the definition. The location of this line will be determined by the outcome of a debate between developed and developing countries. Unavoidably, this debate will be driven on both sides by competitiveness concerns as much as by climate concerns. A consensus will be reached on the definition of a response measure only if the competitiveness concerns of both sides are sufficiently addressed. In achieving this consensus, a line “in between” must be identified that will do the most to mitigate climate change while doing the least to hinder the continuing endeavour to liberalize trade that is fundamental to the hopes of all those in the world searching for sustainable global prosperity.

In this line-drawing, several crucial questions will have to be asked and answered by the parties to the COP.

⁵¹ *Ibid*, Annex 2, art 23 (Understanding on Rules and Procedures Governing the Settlement of Disputes).

⁵² “Summary of the Bonn Climate Change Talks: 10–14 August 2009” (2009) 12:427 *Earth Negotiations Bull*.

Should the national measures included within the definition of a response measure be limited only to measures taken in furtherance of the fulfilment of countries' current voluntary NDCs to climate mitigation and adaptation under the Paris Agreement?⁵³

Because of their apprehension about how green protectionism could affect their trade and their overall economies, many developing countries may be of the view that the definition of a response measure should be limited to measures taken in fulfilment of countries' NDCs. The current NDCs are, however, merely the start of what must become vastly more ambitious national commitments of climate action. Even assuming they are kept, the existing national climate pledges will fall far short of achieving the emissions reductions needed to meet the goals of the Paris Agreement for limiting global warming. As of December 2018, "[t]he unconditional pledges and targets that governments have made...would limit warming to about 3.0C above pre-industrial levels"⁵⁴ — about twice as much warming as the 1.5°C increase in global temperatures since the beginning of industrialization that climate scientists are now saying should be our priority goal.⁵⁵

Clearly, considerably more aggressive national climate actions are essential to combatting climate change. Under the Paris Agreement, additional climate commitments to reduce greenhouse gas emissions are anticipated in 2020 and are supposed to ratchet up rapidly afterwards.⁵⁶ In the face of ever more dire warnings from climate scientists, countries are already being urged to pursue more ambitious actions over and above their existing national climate pledges. They should not be deterred from doing so for fear that trade restrictions that may result from those actions will run afoul of WTO rules. For these reasons, the national measures included within the definition of a response measure should *not* be limited only to those measures relating to current national climate pledges.

Narrowly, response measures could be viewed as equivalent to "domestic mitigation

measures" taken with the aim of pursuing the objectives of NDCs under article 4.2 of the Paris Agreement. More broadly, response measures could be seen as equivalent to "measures... to combat climate change" in article 3.5 of the UNFCCC. The broader view will accomplish the most in achieving climate ambitions.

Should the kinds of national measures included within the definition of a response measure be limited to a specific list?

In defining a response measure, most developed countries are likely to seek a broad scope for acceptable measures, while most developing countries are likely to seek a narrow scope. Thus, most developed countries will likely favour a non-exhaustive and open-ended list of permitted measures, while most developing countries are likely to favour an exhaustive and closed list.

To do the most to counter climate change, a list of the kinds of measures falling within the definition of a response measure must not be exhaustive; it must not be closed. Having a closed list will not account for the fact that the future cannot be foreseen. National measures not yet envisaged may prove to be the most effective kinds of response measures to climate change. A closed list will inhibit legislative and regulatory innovation. It will perpetuate the chilling effect that already exists due to legal uncertainty.

A model may be the "Illustrative List of Export Subsidies" in Annex I to the WTO Agreement on Subsidies and Countervailing Measures.⁵⁷ Because it is "illustrative," this list of the export subsidies that are prohibited under the WTO subsidies rules is non-exhaustive and open-ended. Thus, subsidies that are not on the list can nevertheless be export subsidies so long as they are "contingent, in law and in fact, whether solely or as one of several other conditions, upon export performance."⁵⁸ In the WTO subsidies rules, WTO members have agreed on a list of *some* of the kinds of export subsidies that are prohibited, but they have not tried to identify *all* the kinds of prohibited export subsidies. They have not attempted to foresee the future.

The same approach could be used in defining a response measure. An illustrative list of the

53 Paris Agreement, *supra* note 14, art 4.2.

54 Climate Action Tracker, "Temperatures" (December 2018), online: <<https://climateactiontracker.org/global/temperatures/>>.

55 IPCC, "Global Warming of 1.5°C" (2018), online: <www.ipcc.ch/sr15/>.

56 Paris Agreement, *supra* note 14, art 4.

57 WTO, *Agreement on Subsidies and Countervailing Measures*, Annex I (Illustrative List of Export Subsidies).

58 *Ibid*, art 3.1(a).

kinds of national measures included within the definition of a response measure could be agreed. Conceivably, this list could include carbon taxes, other border carbon adjustments, cap-and-trade systems, technical regulations, standards, labelling requirements, import emission allowances and more. And it could be made clear in agreeing on such a list that it would not be exhaustive or closed. The definition of a response measure should not preclude the future. It should include the creative approaches to mitigating climate change through legislation and regulation that have not yet been conceived or devised but that may become keys to reducing greenhouse gas emissions and to meeting “the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures.”⁵⁹

Should the intent of countries in enacting national measures that address climate change but also restrict trade be considered in crafting the definition of a response measure?

Countries often have many reasons for what they do. There is not always only one aim of a national measure. This is likely to be true of many national measures taken under the rubric of addressing climate change. If one motivation of a national climate measure is to keep domestic products from being disadvantaged in competition with like foreign products because of the added costs of compliance with domestic emissions reduction requirements imposed by the measure, should that competitiveness motivation prevent that measure from falling within the definition of a response measure if the measure is also truly intended to address climate change?

No, it should not — not if the measure truly is intended also to address climate change. Certain kinds of discriminatory trade effects should be permitted in response measures if those effects are indeed part of a national measure to mitigate climate change. However, trade protection in the guise of climate mitigation should not be included within the definition of a response measure if the climate mitigation in the measure is only a guise — if it is cloaked in a climate disguise and if the genuine aim of the measure is only trade protection.

To survive legal scrutiny when disputes arise about their trade impacts in the WTO, climate response measures, including unilateral measures, must not “constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”⁶⁰ This is a legal commitment in identical words in both article 3.5 of the UNFCCC and in the chapeau of article XX of the GATT. There is an abundance of WTO jurisprudence clarifying what this phrase means with respect to other kinds of national measures affecting trade. There is, however, no WTO jurisprudence to date clarifying what this phrase means with respect to national climate measures that affect trade.

In defining a climate response measure, the meaning of this obligation in both the UNFCCC and the GATT should be clarified for measures taken to address climate change. Discrimination between and among traded products should be permitted unless that discrimination is “arbitrary or unjustifiable” — a disqualifying phrase that has been the subject of much jurisprudence in WTO dispute settlement and depends on a case-by-case analysis of the specific national measures, legal claims and proven facts in each individual case. Trade discrimination that is part of a measure that is genuinely taken for the purpose of mitigating climate change should not be seen as “unjustifiable.” And so long as there is a rational basis for the distinctions made between and among trade products resulting from the trade discrimination in a genuine climate measure, that discrimination should not be seen as “arbitrary.” Equally, a climate response measure must not be merely “a disguised restriction on international trade.” It must, in fact, be a measure enacted to address climate change and not merely an act of protectionism.

In the definition of a climate response measure, should a distinction be made between measures taken by developed countries and measures taken by developing countries?

No. There should not be one definition of a climate response measure for measures taken by developed countries and another definition for measures taken by developing countries. It is certainly the case that almost all the focus of the climate regime so far has been on the impact on developing

⁵⁹ UNFCCC, *supra* note 12, art 4.8.

⁶⁰ GATT, 30 October 1947, 55 UNTS 194, TIAS 1700, art XX (entered into force 1 January 1948); UNFCCC, *supra* note 12, art 3.5.

countries of response measures taken by developed countries. It is also reasonable to anticipate that, in the near term, most of the response measures containing trade restrictions will be applied by developed countries to imports from developing countries. But the shape of the world is changing for both trade and climate change.

Increasingly, developing countries are not interested only in ensuring access for their products to the markets of developed countries; increasingly, they are interested also in maintaining domestic markets for their domestic production in the face of growing competition from the products of *other developing countries*. And some of these other developing countries will have lower climate ambitions and thus their traded products may have lower prices and therefore a competitive advantage in the marketplace. For these reasons, one of the changes likely to emerge sooner or later in the realms of both trade and climate change will be some developing countries imposing trade restrictions on imports from other developing countries as a feature of their climate response measures.

Increasingly, too, developed countries may be imposing trade restrictions on imports from other developed countries as part of climate response measures. (How will the European Union respond if US President Donald Trump fulfills his announced intention of pulling the United States out of the Paris Agreement and halts all national action to reduce carbon and other greenhouse gas emissions?) Soon, too, developing countries may be imposing trade restrictions on imports from developed countries as part of climate response measures. (How will China respond if the United States continues with all of President Trump's plans for abandoning climate action while China continues to enhance its own climate action?)

In sum, the long-entrenched battle lines between developed and developing countries over trade restrictions as a part of climate response measures will likely soon be blurred and may be eventually erased. The definition of a climate response measure must reflect this sea change in terms of the global struggle to confront climate change.

Should developing countries apprehensive of green protectionism be offered something in exchange for their agreement to a definition of a response measure that includes measures that apply restrictions on trade?

Yes. Unquestionably, something should be offered to developing countries in exchange for their agreement on a definition of a response measure that is broad enough to include measures that apply restrictions on international trade.

First, justice demands it. Unfair trade barriers abound as obstacles to the pursuit by developing countries of their comparative advantages in many parts of the global economy. In agriculture and all too many other sectors, developing countries are still denied non-discriminatory access to the markets of developed countries. Climate-related trade restrictions will add to the trade barriers they already face. Developing countries are right to expect something in return for their agreement to a broad definition of a response measure that sanctions climate-related trade restrictions.

In addition, while some developing countries are now major producers of greenhouse gases, this has not always been so. Developed countries were the first to employ fossil fuels on a significant and ever-increasing scale in fuelling industrialization for higher production in advanced economies. This history is not erased by the fact that some developing countries have now caught up and even surpassed many developed countries in the extent of their emissions.

Furthermore, while all countries are now confronting the arrival and acceleration of climate change, many of the developing countries that have contributed the least to causing climate change are the countries that are suffering the most from it. The small island countries and subtropical coastal and inland countries that have been the sources of only small amounts of emissions are now on the frontlines in the fight against climate change. Some islands are being inundated by rising sea levels. Some coastlines are shrinking. With increased frequency and intensity, storms worsened by climate change batter millions of people who have the fewest means of saving their homes, their livelihoods and their very lives.

Second, as a practical matter, there will be no agreement on a definition of a response measure unless developing countries are offered something

in exchange for agreeing to a definition. The UNFCCC climate regime moves forward only by consensus. Developing countries will not join in a consensus on a broad definition of a response measure that will do the most to counter climate change unless they are offered something in return. This is a simple and inescapable matter of global climate politics. A consensus can be forged only when all joining in the consensus feel they are getting something in return.

What, then, should developing countries be offered in return for agreeing to a definition of a climate response measure that includes restrictions on trade?

What they should be offered is mainly what they have already been promised in the outcome of the climate negotiations culminating in the conclusion of the Paris Agreement. At COP16 in Cancun in 2010, an agreed statement on response measures urged developed countries to “implement policies and measures to respond to climate change in such a way as to avoid negative social and economic consequences for developing country Parties...and to assist these Parties to address such consequences by providing support, including financial resources, transfer of technology and capacity-building.”⁶¹ If we are now to sanction in a definition of response measures trade restrictions that could have “social and economic consequences” for developing countries, then there is all the more reason for developed countries to provide those developing countries with climate finance, technology transfer and capacity building.

On *climate finance*, the Paris Agreement provides that “[d]eveloped country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.”⁶² Moreover, under the agreement, although “developed country Parties should continue to take the lead in mobilizing climate finance,”⁶³ “[o]ther Parties are encouraged to provide or continue to provide such support voluntarily.”⁶⁴ (On this

last provision, read “China.”) No specific sum of climate finance to assist developing countries with climate mitigation and adaptation is mentioned in the text of the Paris Agreement itself. However, in the decision accompanying the agreement, the COP “*decides that...prior to 2025, the Conference of Parties serving as the meeting of the Parties to the Paris Agreement shall set a new collective quantified goal from a floor of USD 100 billion per year, taking into account the needs and priorities of developing countries.*”⁶⁵

The “floor” of \$100 billion annually in climate finance is a reiteration of a commitment first made by developed countries at COP15 in Copenhagen in 2009, with the aim then of achieving the \$100 billion annual goal by 2020. Now, on the eve of 2020, the fulfilment of this commitment of financial assistance to developing countries by developed countries in addressing climate change is nowhere on the horizon. For example, with respect to the United States, the Obama administration pledged to commit \$3 billion over four years to the Green Climate Fund in November 2014. The United States then made two contributions of \$500 million each to the fund: the first on March 18, 2016, and the second on January 17, 2017 — just a few days before Donald Trump was inaugurated as president. No additional contributions have been made since then by the United States, and President Trump has vowed not to make any more.⁶⁶

At COP24 in Katowice in December 2018, developed countries were urged to scale up their thus far meagre financial support and provide a concrete road map to achieve the goal of mobilizing \$100 billion by 2020. In the meantime, the costs to developing countries of combatting and adjusting to climate change are rapidly mounting. In exchange for the agreement by developing countries to a definition of a response measure that would include unilateral restrictions on trade, developed countries should provide the promised \$100 billion annually and should move forward toward early agreement on this sum as merely the “floor” of much more in an annual commitment of climate finance to assist developing countries with climate mitigation and climate adaptation in furtherance of the goals of the Paris Agreement.

61 *The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention*, Dec 1/CP.16, UNFCCC, UN Doc FCCC/CP/2010/7/Add.1 (2011) at para 89.

62 *Paris Agreement*, *supra* note 14, art 9.1.

63 *Ibid*, art 9.3.

64 *Ibid*, art 9.2.

65 *Adoption of the Paris Agreement*, *supra* note 39 at para 54.

66 Richard K Lattanzio, *Paris Agreement: U.S. Climate Finance Commitments* (Congressional Research Service, 2017), online: <<https://fas.org/sgp/crs/row/R44870.pdf>>.

On *technology transfer*, in the Paris Agreement, the parties state that they “share a long-term vision on the importance of fully realizing technology development and transfer to improve resilience to climate change and to reduce greenhouse gas emissions.”⁶⁷ Toward this end, the technology mechanism under the UNFCCC is to serve the Paris Agreement,⁶⁸ and a “technology framework” has been established under the Paris Agreement to guide the technology mechanism “in promoting and facilitating enhanced action on technology development and transfer.”⁶⁹ The decision accompanying the Paris Agreement reinforces this commitment by endorsing further work on “[t]he enhancement of enabling environments for and the addressing of barriers to the development and transfer of socially and environmentally sound technologies.”⁷⁰ Implementation of these provisions of the Paris Agreement is under way. At COP24, parties proceeded on several fronts on technology issues. Making early technology transfer an even higher priority in the ongoing implementation of the Paris Agreement should be part of what developing countries are offered in exchange for their support of including trade restrictions within the definition of a response measure.

The Paris Agreement states that *capacity building* under the agreement “should enhance the capacity and ability of developing-country Parties, in particular countries with the least capacity, such as the least developed countries, and those that are particularly vulnerable to the adverse effects of climate change, such as small island developing States, to take effective climate change action, including, inter alia, to implement adaptation and mitigation actions, and should facilitate technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness, and the transparent, timely and accurate communication of information.”⁷¹

In addition, the Paris Agreement goes on to say of capacity building, “All Parties should cooperate to enhance the capacity of developing country Parties to implement this Agreement. Developed country

Parties should enhance support for capacity-building actions in developing country Parties.”⁷² These capacity-building efforts “shall be enhanced through appropriate institutional arrangements to support the implementation of this Agreement.”⁷³ At COP24 in Katowice, a focus of the discussions was on framing a decision at COP25 in November 2019 in Chile on the initial institutional arrangements for capacity building under the agreement. In exchange for agreement by developing countries on a definition of response measures that will include trade restrictions, these capacity-building endeavours under the Paris Agreement should be accelerated and significantly enhanced.

While the climate regime is fulfilling these unfulfilled commitments to developing countries, the trade regime could also make *trade concessions* to developing countries on matters where they have long been denied the benefits of their comparative advantages. Foremost among these matters is agricultural trade, where markets for developing countries have been distorted by the agricultural subsidies granted by developed countries to their farm producers and by other market barriers to free agricultural trade. Also, developed countries could address the increasing concern of developing countries that supposedly voluntary standards are being employed as if they were binding governmental regulations in ways that raise unfair barriers to developing country trade. Further, on technology transfer, with respect to the least developed countries, developed country members should keep their mandatory obligation under the WTO intellectual property rules to “provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base.”⁷⁴

What approaches are available as options for agreeing on a definition of a response measure?

Once these critical questions in the line-drawing of defining a response measure are asked and answered, several policy options are available for adopting a definition of a response measure to

67 Paris Agreement, *supra* note 14, art 10.1.

68 *Ibid*, art 10.3.

69 *Ibid*, art 10.4.

70 *Adoption of the Paris Agreement*, *supra* note 39 at para 68(d).

71 Paris Agreement, *supra* note 14, art 11.1.

72 *Ibid*, art 11.3.

73 *Ibid*, art 11.5.

74 *Agreement on Trade-Related Aspects of Intellectual Property Rights*, 15 April 1994, art 66.2 (entered into force 1 January 1995).

help prevent a collision between the international trade and climate rules and regimes. In considering possible approaches, it must be conceded upfront that, apart from simply relying on the WTO Appellate Body to get it right, none of the available options is currently achievable in the prevailing political context. Indeed, even in relying on the sound judgment of the Appellate Body, it is assumed that there will continue to be an Appellate Body. Also assumed is the continued viability of the Paris climate regime. Both of these assumptions are being challenged by President Trump, who seems bent on destroying the Appellate Body by stonewalling the appointment of new judges and thereby shrinking the tribunal out of existence, and who has pledged to pull the United States out of the Paris Agreement. Yet, all this conceded, those who seek a better world have a duty of optimism — a duty that includes identifying how a better world can be achieved if sufficient political willingness is summoned to achieve it.⁷⁵

The first question is: what policy options are available for defining a climate response measure?

Option one: the status quo (no definition)

One option is simply to continue with the current work of the UNFCCC forum on response measures without focusing on the need for a definition of a response measure. This will minimize controversy and contention within the forum, but it will leave it to WTO judges to define a response measure when they are confronted with the need to do so to resolve a dispute pitting climate against trade concerns in WTO dispute settlement. Based on their record, during the more than two decades of WTO dispute settlement, of not automatically putting trade before environmental concerns, the WTO judges may well be up to this task. But the interim of a year or two between when they are presented with such a dispute and when they produce final recommendations and rulings to resolve it will be fraught with tensions within both the trade and climate regimes. Furthermore, in a world of “alternative facts,” the disinformation throughout the world about what the WTO is doing in dispute settlement, and what it is not, is likely to feed no end of political and societal confrontation. In addition, even if the WTO judges render a judgment that accords due respect in defining

a response measure to the task of addressing climate change, that judgment will, technically, apply only to that one measure in that one dispute. There will be only the most circumscribed of definitions, so the legal uncertainty will continue.

Option two: definition by the climate COP

A second option is for the UNFCCC forum on response measures to get serious about defining them and to do so on its own. The climate COP could agree on a definition of a response measure and then present it to the WTO. Politically, it is of course much easier for the climate negotiators *not* to do so. It is much easier for them to continue with their current course, on which no definition appears up ahead. Yet it is difficult to see how even their current agenda can be negotiated without their knowing, first, what it is they are negotiating about. The impacts of response measures cannot be understood or reacted to appropriately without an agreement on what the response measures are. Defining a climate response measure should not only be placed on the agenda of the UNFCCC forum; it should be placed at the top of the list. A downside of the COP defining a response measure on its own, however, would be that it would do so without the benefit of the insight and the input of the WTO, which could have unfortunate consequences later in trying to reconcile the climate and trade regimes in a way that would best help to achieve the goals of both.

Option three: definition by the climate COP in consultation with the WTO

Certainly, the UNFCCC forum on response measures and the COP are fully capable of defining climate response measures if they set their minds to it. And, certainly, WTO judges would rely on that definition if the COP agreed on one. Yet, where response measures affect trade, they fall within the scope of the WTO treaty and thus the jurisdiction of WTO dispute settlement. Also, irrespective of whether, strictly speaking, it applies as a legal obligation of the Paris Agreement, article 3.5 of the UNFCCC cautions the COP about taking unilateral and other measures to combat climate change that affect trade. For these reasons, the best approach would be for the parties to the COP to work in concert with the members of the WTO toward a definition of a response measure by the COP. This international institutional cooperation would more clearly identify the nexus between trade and climate concerns and would therefore help the

75 The phrase “duty of optimism” is, of course, that of Sir Karl Popper.

drafters of the definition to draw the right legal line addressing both. Several alternatives are available. The COP and the WTO could jointly agree on a definition. The COP could consult with the WTO and then agree on a definition and present it to the WTO. Or the COP could craft the outlines of a potential definition of a response measure, consult with the WTO on that potential definition, take the views received from the WTO into account in turning the potential definition into a final agreed definition, and then present the final definition to the WTO. Of these three alternatives, the last seems the best because it gives full consideration to the views of the trade regime while leaving the ultimate decision about the meaning of a crucial climate term to the climate regime.

The second question is: what procedural options are available to the trade regime for recognizing and using a definition of a response measure agreed by the climate regime?

Once the climate COP has agreed on a definition of a response measure, the next question will be: what procedural options will be available to the WTO for recognizing and using that definition?

Option one: no rule making by the WTO

One option would be for the members of the WTO to refrain from making any changes or other accommodations in WTO rules to acknowledge the many connections between trade and climate change. Instead, the members of the WTO could wait and, as legislators often do, “let the judges decide.” They could wait until a collision occurs between trade and climate change in WTO dispute settlement and rely on WTO judges to find a way within the existing rules to soften the impact. This approach has the always appealing advantage of avoiding any real engagement by the members of the WTO on what is a highly contentious trade issue. Yet it has the disadvantage of being a procrastination that only postpones an inevitable trade reckoning with the reality of climate change, and that amounts to a high-stakes wager betting on the ability of WTO judges somehow to find a solution satisfying to all somewhere within the lines of the current trade rules. WTO judges will undoubtedly rely in their judgments on a COP definition of a response measure. But will this be sufficient to further both climate and trade ambitions without additional action by the WTO to adjust the operation of WTO rules at the nexus of trade and climate change?

Option two: an amendment by the members of the WTO

A second option would be for the members of the WTO to incorporate the COP definition of a climate response measure into an amendment to the WTO treaty, providing an exception from what would otherwise be the illegal application of trade-restrictive national measures for national measures that:

- discriminate based on the amount of carbon and other greenhouse gases consumed or emitted in making a product;
- fit the definition of a climate response measure as defined by the climate COP; and
- do not discriminate in a manner that constitutes a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.⁷⁶

A process exists for amendments to the trade rules to be adopted by a two-thirds majority of the members of the WTO.⁷⁷ Given, however, that after more than a decade of trying, the members of the WTO were unable to conclude any of the amendments contemplated in the Doha Development Round of multilateral trade negotiations, they are unlikely at this time to summon the requisite support for amendments to the existing WTO rules to respond to the urgency of assisting in enabling action to address climate change. In the long term, adopting amendments to the WTO rules to reimagine trade rules in the light of climate change and other aspects of sustainable development is the best option; in the short term, however, it is not a practical political option.

Option three: a legal interpretation by the members of the WTO

A third option would be for the members of the WTO to incorporate the COP definition of a climate response measure by adopting the same provision as a legal interpretation of relevant rules in the WTO treaty. The exclusive authority to adopt interpretations of the existing trade rules resides in the Ministerial Conference of the General Council of the WTO, which can adopt

⁷⁶ James Bacchus, “The Content of a WTO Climate Waiver” CIGI, CIGI Papers No 204, 4 December 2018 at 7 [Bacchus, “The Content”].

⁷⁷ Marrakesh Agreement, *supra* note 50, art X.

an interpretation by decision of a three-fourths majority of the WTO members. But, if it will be difficult at this time to muster a two-thirds majority of the WTO membership to amend WTO rules to reconcile trade with climate change, it will be even more difficult to assemble a three-fourths majority to interpret existing WTO rules to do so. Like an amendment, an interpretation is not now a practical political option.

Despite the difficulty, however, in order to facilitate the carbon pricing needed to spur the needed transition away from a carbon economy, WTO members should approve a legal interpretation now that would eliminate the current uncertainty about whether carbon taxes are eligible for a border tax adjustment under the current WTO rules.⁷⁸ A legal interpretation should clarify that a tax on inputs — such as fossil fuels — that are not incorporated physically into a final product is a tax *on a product* that is eligible for a border tax adjustment. The same legal interpretation should also clarify that a tax on the greenhouse gases consumed or emitted in making a product is an *indirect* tax that may be adjusted at the border.⁷⁹

Option four: incorporation by reference in a WTO climate waiver

A fourth option would be for the members of the WTO to incorporate the COP definition of a climate response measure by adopting the same provision as part of a WTO climate waiver.⁸⁰ Waivers are permissible under WTO rules,⁸¹ and they have frequently been granted by WTO members. Although most waivers have been for narrow purposes, waivers can be granted for broad purposes in “exceptional circumstances,” as has been done with compulsory licensing of medicines and the suppression of trade in conflict diamonds.⁸² Moreover, although most waivers have waived the obligations of just one WTO member, collective waivers for groups of WTO members or for all WTO members are permissible.⁸³ The

rules provide that a decision to grant a waiver shall be taken by three-fourths of the WTO members.⁸⁴ In practice, however, although a vote was taken on a handful of waivers soon after the establishment of the WTO in 1995, all WTO waivers since then have been adopted by consensus.

At first glance, the process for adopting a climate waiver may seem to present as imposing a hurdle as the processes for adopting an interpretation or an amendment. However, a waiver may be more palatable to WTO members than an amendment or an interpretation of existing WTO rules. A waiver does not change WTO rules; it only waives the application of WTO rules for certain kinds of carefully described and delimited measures. Moreover, a waiver is not permanent. It is temporary and subject to annual review. A climate waiver could be structured in the same way as the waiver for compulsory licensing of medicines, which states that it will terminate only on the date when an amendment replacing the provisions of the waiver takes effect. Even then, a waiver would be more politically appealing than other available options for reconciling trade rules with climate necessities in that it would provide an opportunity for practical experimentation within the overlap of trade and climate change. The members of the WTO are inclined toward practical experimentation.

Conclusion

Again, if agreeing on the definition of a response measure were easy, it would already have been done. It is a sad commentary on the history of the climate regime that, so far, it has not been done. But past failures need not prevent future successes. Rather, learning from failure can lead to success. Nearly three decades of climate negotiations should have revealed by now that the debate over climate response measures can only be resolved if the legitimate concerns of developed and developing countries alike are acknowledged and addressed. That is the only way the climate regime can ever agree on a definition of a response measure. Furthermore, the lesson should have been learned by now that, no matter how much the topic of trade is considered a taboo in climate negotiations,

78 *General Agreement on Tariffs and Trade*, 30 October 1947, 55 UNTS 194, art II:2(a) (entered into force 1 January 1948).

79 For a more extensive discussion of this issue, see Bacchus, “The Content”, *supra* note 76 at 12–13.

80 *Ibid.*

81 *Marrakesh Agreement*, *supra* note 50, art IX:3.

82 *Ibid.*, art IX:4.

83 Bacchus, “The Case”, *supra* note 11 at 23.

84 *Marrakesh Agreement*, *supra* note 50, art IX:3.

the nexus of trade and climate change can only be ignored at the world's peril. For even more difficult than agreeing on a definition of a response measure will be agreeing on how to deal with the ultimate consequences for both the trade and climate regimes if there is no agreement on a definition.

Some in the climate regime may worry that defining a response measure may disrupt the delicate balance reflected in the Paris Agreement. It was possible to conclude the Paris Agreement only because wide latitude was given to the parties to the agreement in crafting their NDCs and in deciding how to make those contributions to the common global challenge of cutting carbon and other greenhouse gas emissions. Will not the act of defining a response measure reduce the discretion of the parties to the agreement in deciding how to keep the promises they have made in furtherance of the agreement? Does not defining what actions are permissible also imply that some actions are not permissible?

The answer to both questions is “yes.” But national discretion under the Paris Agreement need not be total, and some actions should not be permissible, even if those taking them claim that these actions are pursuant to the Paris Agreement. What is more, these answers and these questions must be considered in light of the alternative for both the climate and trade regimes. If the climate regime does not define a response measure, then the trade regime will, sooner or later, provide its own definition. Trade jurists may or may not get the definition right, but this much is clear: the definition will not be written by the climate regime. The chances of reconciling the legal frameworks of the two regimes will disappear. The trade and climate regimes will collide — with no good outcome in sight for either one.

Agreement on the definition of a climate response measure is only one of the tasks confronting climate negotiators in implementing and fulfilling the objectives of the Paris Agreement. It is, however, a central task. Without a definition, it will be impossible to know which measures taken by parties to the climate agreement are legitimate climate measures and which are not. Without a definition, it will be impossible to know when restrictions on trade are permissible for climate reasons and when they are not. And, without a definition, it will be more difficult to avoid a coming collision between the trade and climate regimes over the borderline

between acceptable and unacceptable trade-restricting national climate measures. Achieving a definition of a climate response measure by the climate regime must therefore be at the top of both the climate and trade agendas.

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The Paris Agreement and the inherent inconsistency of climate policymaking

Oliver Geden*

Edited by Mike Hulme, Domain Editor and Editor-in-Chief

Since the adoption of the Paris Agreement, the actual meaning of many crucial aspects of that agreement still remains fairly unclear. This has led to extensive framing efforts, for example on the 5-year review mechanism. What has been largely overlooked, however, are the decisions on quantified climate stabilization targets. Until now, there has been no serious questioning of the intention to limit the temperature increase to 2 or even 1.5 °C. Not that many in the climate research community seem to grasp the political rationalities behind the setting of long-term policy targets. Even the mainstream policy discourse assumes consistency between talk, decisions, and actions. Accordingly, a decision on a certain climate target is presented and perceived as an act of deliberate choice, that will be followed up with the deployment of appropriate measures. In real-world policymaking, however, many decisions are viewed as independent organizational products, not necessarily requiring appropriate action. Despite the cultural norm of consistency, inconsistency is an inherent and inevitable feature of policymaking. This is particularly problematic in public domains with a deliberately transformative agenda like climate policy, which is characterized by long-term planning and a high demand for scientific advice. But if consistency of talk, decisions, and actions cannot be assumed, then concepts like *evidence-based policymaking* become essentially devoid of meaning. Simply delivering the best available knowledge to policymakers might even have counterintuitive effects. In the future, policy-driven climate researchers and advisors must critically assess how their work is actually being interpreted and used in policymaking processes.

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INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) describes its main goal as ‘providing policy-relevant but not policy-prescriptive information.’¹ However, in the everyday practice of advising

policymakers the IPCC’s standard formula proves to be fairly ambiguous, allowing for a range of different interpretations. This includes, somewhat surprisingly, policymaking itself. What is it that makes knowledge ‘policy-relevant’? Up to now, the fact that policymakers (a vaguely defined category) consider this knowledge relevant appears to suffice—no matter whether they treat the research as directly relevant to their decisions whether they use it to draft policy programs or speeches, or whether they see it merely as a (potentially important) contribution to basic research.

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In the light of two recent developments, the importance of ‘policy relevance’ as a central task of climate research will have to be examined closely in the years to come. First, the new IPCC chair Hoesung Lee stated explicitly that the panel’s focus should shift toward solutions.² Second, the Paris Agreement appears to confirm hopes that after more than 20 years of talking, the age of appropriate action in international climate policy has finally come. Taken together, these developments will increase pressure and incentives to make climate research even more policy-relevant, and will keep a high level of attention on climate science and may guarantee more research funding.

At the same time, this could also cause problematic shifts in the process of knowledge production. Since the everyday business of policymakers is primarily focused on *solutions* rather than *problems*,^{3,4} this could accelerate a shift from basic to applied research. In the (now potentially approaching) age of climate policy action, the inconsistencies between talk, decisions, and action will become starkly apparent as intrinsic elements of policymaking. This will make it necessary for policy-oriented climate researchers to ask how they can continue to guarantee adherence to the principle of intellectual consistency in future knowledge production. If climate researchers and particularly scientific policy advisors want to avoid drifting into dangerous waters, they will have to reconsider their relationship with policymakers. This will demand a process of self-reflection, whose logical starting point is to seek a better understanding of the rules that govern real-world climate policymaking.

AMBIGUITY IN THE PARIS AGREEMENT

The 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) found a surprisingly happy ending when delegates from 195 countries adopted a set of COP decisions and the so-called Paris Agreement. As usual in complex diplomatic negotiations, the final document contains vague language on numerous crucial aspects. But this kind of ‘constructive ambiguity’⁵ is often the only way to get a deal done—all the more so if a summit is already in overtime, as has become almost standard procedure at COPs in recent years. Thus, the actual meanings of many paragraphs of the Paris outcome will only become clear over time.

Unsurprisingly, efforts to frame potential outcomes were already launched during COP21, in discussions over each draft of the agreement and focusing on the most contentious and thus intangible paragraphs, such as those on the new mitigation goal for the second half of this century or the 5-year review mechanism that is presented as guaranteeing accelerated action over time. As the history of international climate politics clearly shows, the actual meaning of the Paris outcome will not emerge as a consequence of the most sophisticated interpretations but as a result of ongoing power struggles.⁶ Or in the words of sociologists Peter Berger and Thomas Luckmann: ‘He who has the bigger stick has the better chance of imposing his definitions of reality.’⁷ Also with ambiguous UN climate agreements, it is usually not the most progressive reading that prevails—and almost everybody in the game is well aware of that fact.

It is quite remarkable that only a few significant efforts have been undertaken to critically examine the quantified temperature targets of the Paris Agreement.^{8,9} COP21’s ambitious target decisions seem to constitute the most important success of the Paris summit, not only for policymakers and the wider public but also for many prominent climate scientists.^{10,11} This once shows again that global climate stabilization targets serve as powerful *boundary objects*, allowing networks of diverse actors to communicate and interact.^{12,13} To be able to fulfill that function productively, some level of ambiguity is essential.

The widely reported Article 2¹ of the Paris Agreement states that it aims to strengthen the global response to the threat of climate change by ‘holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.’¹⁴

Worldwide, there has been almost no questioning of the parties’ intention to hold the temperature increase to below 2 or 1.5 °C. After all, this is the clearly articulated will of 195 governments. They even requested an IPCC Special Report on 1.5 °C by 2018, which should then inform the first of many review cycles to progressively strengthen national mitigation pledges. This has been part of the official climate policy narrative since Paris. But if the climate researchers take this representation of a rational policy cycle for granted, they might fall victim to the cultural norm of consistency¹⁵ in policymaking—once again.

INCONSISTENCY IN CLIMATE POLICYMAKING

While the consistency norm can be found nearly in every field of policymaking, its effects are particularly problematic in public domains with a deliberately transformative agenda such as energy and climate policy. Here we have long-term policy targets that are often embedded in a broader societal and formal political consensus and accompanied by complex plans for implementation.

Not that many in the climate research community seem to grasp the political rationalities behind the setting of long-term climate policy targets. The mainstream discourse assumes consistency between talk, decisions, and actions. Accordingly, a decision on a certain climate target is presented and perceived as an act of deliberate *choice* between different possible end states, to be accompanied by assessments of proper sub-targets and instruments and followed up with the deployment of appropriate measures. In the end, it might not work out as originally planned, but this would simply be considered an implementation failure. Policymakers and researchers might even be able to learn from it, and this would enable them to perform better during the next policy cycle.

The trouble with international climate policy, however, is that things for the most part do not work out as planned. There is no such thing as a policy cycle driven by comprehensive rationality. In real-world policymaking, talk, decisions, and actions are not consistently derived from agreed descriptions of a given problem. Policymakers do not specialize in solving problems but merely in dealing with them. They view talk, decisions, and actions as independent organizational products, and do not see decisions as necessarily requiring appropriate action. In policymaking, many decisions live a life of their own.¹⁶

In global climate policy, we can identify numerous instances of disconnect between decisions and actions. Usually, policymakers—a professional group whose membership is particularly fluid over time—are able to get away with this disconnect. For example, after Paris, media outlets and think tanks lauded the decision of the Parties ‘to reach global peaking of greenhouse gas emissions as soon as possible.’¹⁴ Presenting this particular quote in a positive light ignores the fact that every single COP since Copenhagen 2009 has adopted such a decision,¹⁶ and downplays that the Paris COP formally adopted a system of essentially voluntary mitigation pledges (now called ‘nationally determined contributions’ or

NDCs) that are expected to lead to a further increase in global greenhouse gas emissions by 2030, then reaching 55 gigatonnes (Gt) CO₂-eq.¹⁷

A similar disconnect can be observed with the 2 °C target. It had already been formally adopted at COP16 in Cancun 2010, but action has been insufficient ever since, contrary to climate economists’ recommendations based on mitigation scenarios, which are in high demand from policymakers. Ironically, scientific advisors are already relaxing the requirements for meeting the 2 °C limit and have started moving goalposts to save the target from being declared infeasible, most notably in the annual UNEP Emissions Gap Reports.¹⁸ In its 2013 report, UNEP stated that the maximum global emissions levels to be compatible with a 2 °C trajectory would be 44 Gt in 2020 and 35 Gt in 2030. In their latest report, these values are about 20% higher, now at 52 Gt (2020) and 42 Gt (2030).^{19,20}

Paradigm Shift

Introducing a system of voluntary mitigation pledges marks a paradigm shift in UN climate policy, slowly replacing a top-down approach with a bottom-up model. We are observing the rise of a genuinely political mode of climate diplomacy, in which concepts of strict emissions limits are being pushed into the background. This new, actor-centered paradigm is no longer focused on long-term goals for climate stabilization, but on the possibilities and limits of the negotiation process, particularly on securing broad participation. The focus is no longer on the environmentally desirable, but on the politically feasible. This will probably help to overcome diplomatic gridlock and policy inaction,²¹ but it will also exacerbate the inconsistency between talk, decisions, and actions, since almost nobody wants to admit this paradigm shift openly.

Such an admission would not only signify the failure of first 20 years of UN climate policy; it would also stand in direct contradiction to the 2 °C target. Climate diplomats and NGOs therefore discuss the bottom-up approach not as a break with the top-down paradigm, but rather as a pragmatic supplement that accommodates the major emitters while also creating a framework for the climate initiatives of sub-national actors such as large cities and corporations. The new, much more pragmatic regime is being treated as if it could seriously deliver the emissions cuts necessary to meet the 2 °C target.

Furthermore, the top-down approach is now widely presented as entailing little more than a strong

UN role and the existence of legally binding reduction targets. But in contrast to widespread assumptions, what truly defines the top-down approach to mitigating climate change is not the chosen political arena (the UN system) but the overarching policy goal (limiting global warming to 2 °C or even 1.5 °C), from which all further steps are rigorously derived.^{22,23} While the top-down paradigm has not been abandoned as a political ideal, it is effectively being eroded and replaced by the more practical bottom-up approach. The only way to alleviate the inherent contradiction between top-down and bottom-up is to create a narrative in which voluntary bottom-up actions are able to deliver top-down climate stabilization targets.

That's what makes the 5-year review cycles in the Paris Agreement so important. They hold the promise of bringing the world onto a 2 °C path by securing gradual increases in mitigation ambitions over subsequent years. Aggregated voluntary pledges are projected to lead to 55 Gt of greenhouse gas emissions in 2030, while one of the COP21 decisions explicitly states that a 2 °C trajectory would require 'reducing emissions to 40 gigatonnes'¹⁴ by 2030. This effectively means that significant strengthening of pledges (and actions) has to occur by 2030, and everything world leaders, climate diplomats, and NGOs were saying during and after COP21 suggested the Paris Agreement would secure exactly that.

Ironically, the European Union (EU), a long-standing leader in global climate policy, has been the first to publicly call attention to a major loophole in the outcome of COP21. Hidden in COP decision 24 accompanying the Paris Agreement, the UNFCCC requires that parties which have already delivered intended nationally determined contributions (INDCs) with a time frame up to 2030 'to communicate or update by 2020 these contributions and to do so every five years thereafter.' This means, as the EU Commission pointed out as early as March 2016,²⁴ that it is perfectly legitimate for the EU to only communicate the existent INDC (NDC under the new regime) by 2020, not changing the EU's already existing 2030 mitigation target. The Commission, with the support of many EU member states, has advised that only after the first *global stocktake* in 2023 should the EU consider progressively more ambitious action 'for the period beyond 2030.'¹⁷

If even one of the leading forces in global climate policy says that its 2030 mitigation pledge does not need to be strengthened in light of the Paris Agreement, other parties are very likely to follow

suit. At least up to 2030, the review mechanism is designed to fulfill the same function as those in earlier climate agreements: to conceal disappointing negotiation outcomes and to keep hopes of more ambitious policies alive. In that sense, COP21 managed to adopt a 3 °C agreement (if pledges are met)²⁵ with a 1.5 °C label.

Creating *Carbon Debt* with No Apparent Plan for Repayment

The outcome of the Paris COP21 is likely to confirm the *modus operandi* of more than 20 years of UN climate policy, which, as John Vogler described it, consists in 'kicking the can down the road in order to delay potentially difficult and costly decisions.'⁶ It is somehow surprising that this is even possible in a policy field where decisions are meant to be informed by—or even based on—the best available science. But there is one major feature in climate research that allows for masking the growing inconsistency between political talk, decisions, and actions: the introduction of *negative emissions* into carbon budgets during the IPCC's fifth assessment cycle.

Most Integrated Assessment Models (IAM) assume that carbon dioxide removal (CDR) can be achieved primarily by using a combination of fast-growing bioenergy plus carbon capture and storage (BECCS), a still unproven technology. Some models also include afforestation, but to a far smaller extent than BECCS.^{26–29} Negative emissions allow economists to considerably extend the carbon budget originally set by natural scientists. Both types of budgets work with the same net amount, but the economists' gross carbon budgets often effectively double the remaining emissions quota, establishing a kind of *carbon debt* to be paid back later in the century. Also while that is the hope, the policy action this would entail is nowhere in sight.^{18,30} To be clear: This is not a problem that automatically arises when designing a global carbon budget for a given temperature target. Rather, it is one that is rooted in the now firmly established approach of *budgeting with CDR*, which essentially means circumventing the original constraints on global emissions.⁸ When accounting for all dimensions of feasibility (technological, economic, social, and political) it is hard to imagine that the total amount of CDR needed to meet 2 °C or even 1.5 °C can be realized during the 21st century. Estimates stand currently at 500–800 Gt,³¹ equaling 15–20 years of current annual CO₂ emissions. Based on terrestrial CDR only, this would require

500 million or more hectares of additional land,^{27,32} equaling at least 1.5 times the landmass of India. This is obviously a political no-go and the main reason why negative emissions have not been part of UN climate negotiations so far, with no reference to them whatsoever in the Paris Agreement. This is despite the fact that CDR has been discussed seriously in the IPCC since 2007³³ and is an integral part of RCP2.6, the set of IPCC scenarios consistent with 2 °C.³⁴ Up to now, the introduction of CDR technologies has mainly had the effect of masking political inaction. A strategic discussion of how to use CDR within a broader portfolio of climate policy measures has still not taken place. Most policymakers do not even know the difference between net and gross negative emissions and think of CDR as an option for the distant future. For a 2 °C limit to be realistic, the world should cross the line into *net negative* around 2080, when negative emissions are higher than the residual (positive) emissions from fossil fuels and land use. But carbon removal technologies as such will have to be phased in and thus deliver *gross negative* emissions far earlier, with some IAM scenarios foreseeing a starting point as early as 2030.

Intentions Versus Results

So, if limiting the temperature increase to well below 2 °C is already based on a kind of magical thinking about massive amounts of future negative emissions, and if the original carbon budget (without CDR) for 1.5 °C might be consumed as early as 2021, why did diplomats decide to put these targets in a legally binding UN agreement? Obviously these decisions were not about choosing between discrete sets of appropriate actions. Based on the work of organizational theorist Nils Brunsson,^{15,35} it is possible to detect other functions of the ambitious temperature target decisions in Paris: (1) creating legitimacy for policymakers and the negotiation process; (2) claiming responsibility for saving the planet; (3) mobilizing short-term action within the negotiation process; and (4) creating a potential benchmark for *loss and damage* claims.

Whichever function was dominant in Paris, they all share one thing in common: actual target implementation is not necessary for the targets to fulfill these functions. What is indispensable, however, is adherence to the cultural norm of consistency, and that is why any major decision in climate policy will lead to a multitude of implementation studies, including the IPCC Special Report on 1.5 °C.¹⁰ But since policymaking is not governed by any comprehensive

and consistent rationality, scientists cannot expect appropriate action even if they produce vast assessments with diverse options for meeting a given target.³⁶

Inconsistency in policymaking stems from the simple fact that political organizations—like the UN, the EU, national governments, and political parties—need to constantly secure external support, but are confronted with inconsistent demands by different stakeholders. The most convenient way of dealing with this challenge is to address some stakeholder groups through talk, some through decisions, and some through actions. From a praxeological perspective,³⁷ focusing on the practical logic behind policymakers' behavior, this is perfectly consistent while it inevitably leads to vast intellectual inconsistencies. Apparently, in climate policy, most governments choose a more progressive stance in their talk and decisions but a more cautious one in their actions. The easiest way for them to deal with impending inconsistency is *hypocrisy*—exemplified by talking and deciding about the distant future, where the need for immediate action is relatively limited. Unsurprisingly, climate policy has been much more about intentions than results, and the policy relevance of climate science has been restricted mainly to talk and decisions. And so far, setting ambitious long-term global climate targets has not been a prerequisite but a substitute for appropriate action.³⁸

CO-PRODUCTION OF IRRESPONSIBILITY

In treating the Paris Agreement's mitigation targets as if they were intended as a deliberate choice between different possible end states, climate researchers are stabilizing the cultural norm of consistency in climate policymaking: IAMs can indeed be seen as integral to maintaining the illusion that such consistency exists.^{39,40} Unfortunately, there is not much learning taking place in the climate policy and research community. The usual response to failure is 'more of the same.' The Paris Agreement will bring about three mitigation targets that are legally binding under international law: two temperature limits and a net-zero emissions goal. These targets are likely to remain in place for years if not decades, and this will probably lead to a whole new cycle of implementation studies that will have to answer policymakers' favorite question: Are UN climate targets still feasible? Researchers' answers will be positive in general, but in the absence of swift and drastic

emissions reductions, these will be based on ever more heroic assumptions, particularly about the vast amounts of negative emissions that are necessary to compensate for initially overshooting the original carbon budgets, betting on unproven technologies.

Of course, researchers are not concealing their assumptions, but these assumptions are still far from easy for policymakers, the media, or the broader public to grasp. Since policymakers are generally interested in the core message of feasibility, they are largely ignoring the fine print. Also because climate economists do not see it as their task to educate the public about the thinking behind negative emissions and do not want to reflect on political feasibility, they have been repeating the same basic message about the feasibility of ambitious temperature targets for years now despite growing levels of greenhouse gas emissions. Like climate policymakers, they have been more concerned with declared intentions than with actual results. And by complying with policymakers' demands to deliver scenarios that are compatible with 2 °C during the IPCC's fifth assessment cycle, they have helped to undermine the original idea of global carbon budgets—putting non-negotiable constraints on emissions.^{13,18} By establishing the idea of negative emissions, climate researchers have helped, unintentionally, to mask the lack of effective political mitigation action.

CONCLUSION

If consistency of talk, decisions, and actions cannot be assumed, then concepts like *evidence-based policymaking* become essentially devoid of meaning.^{41,42} Where does this leave climate researchers and particularly scientific policy advisors? There is no easy answer. But since these advisors' job is to provide the best available knowledge to climate policymakers, they might start by seeking a better understanding of how governments and politicians are dealing with new knowledge, and why they constantly ask for more feasibility studies despite having ignored most of them in the past. If climate policy advisors really want to help make the world a better place, they will have to deal with the political world as it is,^{43–46} not with policymakers' idealized self-representations and even less with the oversimplified assumptions about political action used in textbooks and models.

One of the trickier problems is the lack of guidance offered by the social science literature on international climate policy, which is not particularly helpful in understanding what is going on within and between real-world governments—not

the least caused by a shortage in empirical studies, most notably ethnographies. The mainstream literature is dominated instead by a *functionalist* approach that focuses on the climate regime itself and assumes, based on the international community's repeated declarations, that the key actors' primary interest lies in improving the performance of global climate policy.⁶ This is the same narrow logic that usually guides scientists' recommendations for climate policy targets and instruments. The result is what could be described as a paternalistic advisory approach, offering policymakers a helping hand since they cannot get the job done on their own. By taking this approach, researchers and scientific advisors ignore the fact that climate policymakers are a fairly marginalized group within their respective governments, and that most of the people we tend to call 'policymakers'—a rather ambiguous term itself—have little real influence over key economic policy decisions. At the same time, researchers and scientific advisors do not know much about how high-level decision makers such as ministers or heads of state and government act on a regular basis or, for example, how much consideration they give to international power politics or domestic electoral markets.

This does not mean, however, that there are no appropriate approaches at all. There is a vast body of research literature on the role of scientific policy advisors.⁴⁷ The problem, though, is that scientific advisors and policymakers resolutely ignore most of it. When they do pay attention to researchers studying the science/policy interface, they tend to regard them as spectators watching from the sidelines, commenting on the quality of the game despite having never stood on the playing field themselves. For scientific climate policy advisors, this kind of narrative may serve as a way of dealing with cognitive dissonance in a world where policymakers' demand for scientific assessments is constantly high.

Against this backdrop, the most challenging task ahead for policy-driven researchers and scientific advisors is that of critical self-reflection. In a world of inherently inconsistent climate policymaking, simply delivering the best available knowledge to policymakers might have counterintuitive effects. This means that those providing expertise cannot rely solely on their good intentions but also have to consider results. They must critically assess how their work is actually being interpreted and used in policymaking processes. This is not to say that researchers and scientific advisors should try to actively influence policymaking, as occasionally suggested,⁴⁸ since that

would almost inevitably lead to more inconsistency in experts' knowledge production as a result of an increased politicization of climate research.^{18,49}

Climate researchers and scientific advisors should resist the temptation to act like political entrepreneurs⁴ peddling their advice, for example, by exaggerating how easy it is to transform the world

economy. It is by no means their task to spread optimism about the future achievements of climate policy. Instead, to provide high-quality expertise,⁵⁰ it is sufficient to critically analyze the risks and benefits of political efforts and contribute empirically sound—and sometimes unwelcome—perspectives to the global climate policy discourse.

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Additional information

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COMMENTARY:

Catalysing a political shift from low to negative carbon

Glen P. Peters* and Oliver Geden

Policymakers are beginning to understand the scale of carbon dioxide removal that is required to keep global warming “well below 2 °C”. This understanding must now be translated into policies that give business the incentive to research, develop and deploy the required technologies.

Following the publication of the IPCC's Fifth Assessment Report, ‘negative emissions’ came under intense scrutiny. The criticism mainly focused on the conceptual use of immature carbon dioxide removal (CDR) technologies to meet the 2 °C target in Integrated Assessment Models (IAMs), and on the potential risks of deploying CDR technologies at scale^{1–5}. Most attention has been placed on bioenergy combined with carbon capture and storage (BECCS), a technology that both produces energy and removes carbon, and which is the CDR technology dominant in most IAMs.

The political implications of large-scale CDR have remained largely out of the debate. In principle, the governments that signed and ratified the Paris Agreement accept the IPCC consensus that CDR cannot be avoided if ambitious climate targets like 1.5 °C or 2 °C are to be met. But so far, there is no debate on the one issue that usually dominates UN climate negotiations — differentiation and burden sharing. Which countries are going to start CDR first? Which countries will deliver the bulk of the CDR? Currently, no countries have mentioned BECCS in their Nationally Determined Contributions, and only about a dozen even mention the key ingredient of carbon capture and storage.

Entering negative territory

In Paris, governments not only agreed on limiting temperature increase to “well below 2 °C” and possibly even to 1.5 °C, they also set a target of reaching a balance between emission sources and sinks in the second half of the century⁶. Officials are now learning that even if they only strive for a balance between sources and sinks, they need CDR to counteract residual emissions in hard-to-mitigate sectors, such as industrial and transport subsectors and CH₄ from agriculture. Since we have emitted so much already, CDR is also required to offset some earlier or ongoing carbon emissions. According to IAMs, CDR starts as early as 2020, reaches 10–20 GtCO₂ per year in 2100 (25–50% of current annual emissions), and cumulatively removes 400–800 GtCO₂ by 2100, a size comparable to the remaining carbon budget⁷. Most policymakers, heads of state and governments seem to be unaware of the broader political implications⁸.

In policymaking, mitigation efforts are often referenced to the percentage reductions from a given base year. The (net) zero line — or reducing emissions by 100% — has been the conceptual reference point. Because UN climate negotiations are generally based on the principle of ‘common but differentiated responsibilities’ (CBDR), it could be expected that industrialized countries will reach the zero line earlier than emerging economies

and developing countries. Aiming at net negative emissions — emission reductions of more than 100% — would probably perpetuate CBDR, both in the timing of net zero and the scale of negative emissions. New or prolonged conflicts about global burden sharing would be inevitable. Emerging and developing countries are likely to demand that industrialized countries invest more in CDR, whilst they themselves might not even reduce their own emissions to zero.

Country and sectoral distribution

Most, if not all, discussions of CDR have been at the global level. This is an unhelpful abstraction, as individual actors must deliver CDR. The next simplest form of abstraction, useful for climate policy negotiations, is the country level. To assess the potential political conflicts, we compared the output from four cost-optimal IAMs^{9,10} (Fig. 1). China, the USA, the EU28 and India take the lead in ramping-up BECCS until 2050, with cumulative values of 5–10 GtCO₂ up until 2050 (median outcomes: China, 10 GtCO₂; the US and EU, 7.5 GtCO₂; and India, 6 GtCO₂). These countries also provide the largest cumulative contributions over the twenty-first century (median outcomes: China, 80 GtCO₂; the US, 60 GtCO₂; India and the EU, 50 GtCO₂; Brazil, 40 GtCO₂; and Russia, 30 GtCO₂), but they still represent less than half of the cumulative global CDR total.

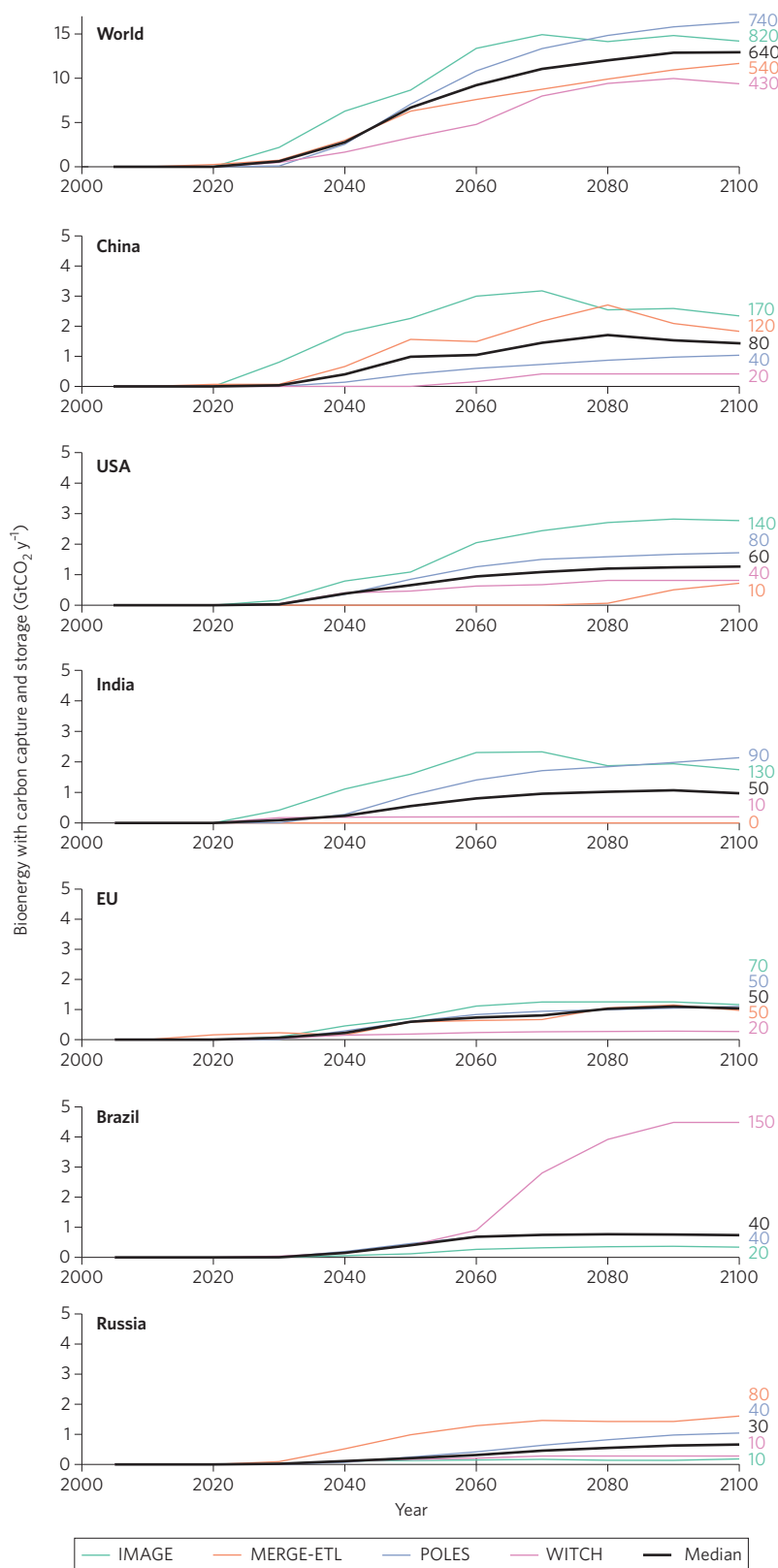


Figure 1 | The scale of bioenergy with carbon capture and storage (BECCS) across different cost-optimal integrated assessment models (IAMs) with globally harmonized climate policies starting in 2010 (refs 9,10). Different colours represent different IAMs and the black line is the median. The numbers to the right of the axis are cumulative values in 2100. Here we only intend to show the scale of the BECCS, and how it varies by country and IAM, to form the basis of policy discussions.

The output from the IAMs gives an indication of cost-optimal pathways, but these may deviate substantially from the politically optimal pathways incorporating CBDR. Even if an operational global carbon-trading system could feasibly transfer costs between countries to make it politically palatable, it is likely that countries such as India would not see it as fair. India and others would rightly argue that they should not provide BECCS at a scale similar to the EU and the US, countries that have a much larger historical contribution to current climate change¹¹. Furthermore since different IAMs lead to a variety of BECCS outcomes (Fig. 1), in a political negotiation on BECCS commitments it is likely that countries will put forward modelling results that suit their strategic objectives.

Several aspects compound the distribution concerns even further. At the sector level, scenarios indicate that the power generation will provide most, if not all, the BECCS. While some sectors will continue with positive emissions, only electricity generation has net negative emissions¹² and reaches zero far earlier than at the national level. To meet the global scale required, countries that are the biggest electricity consumers must provide the bulk of the BECCS, as they have the largest capacity to remove CO₂. Countries with the largest potential to produce bioenergy, which may differ to the largest energy consumers, would experience large impacts on their land sector, further exacerbating CBDR issues.

Division of labour

The regional distribution of CDR as indicated by IAMs informs cost-optimal pathways to meet the global demand for CDR. The realized CDR will depend on how climate policies incentivize business to develop and deploy the necessary technologies¹³. Within an IAM, investment decisions are made with long-term, stable, and high carbon prices, perfect knowledge of technology costs, and perfect coordination along the international supply chain, leading to zero risk of investments failing. In practice, investment decisions are made under deep uncertainty, capturing a combination of geopolitical uncertainties, technological uncertainties, and social acceptance. Generous government support in the late 2000s was not sufficient to propel large-scale carbon capture and storage¹⁴, with carbon prices being too low and unstable, and public opposition too high. Bioenergy has also been controversial, and compounds the risks of BECCS even further³.

BECCS has additional complexities, since the BECCS supply chain may span several countries, requiring some harmonization in policies between countries to get incentives correct¹⁵. It could be that biomass harvested in Cameroon would be exported to the

UK for combustion and CO₂ capture, and then the captured CO₂ exported to Norway for permanent storage. The current method of reporting does not connect the bioenergy use in the UK with the biomass harvest in Cameroon, making it difficult to assess carbon neutrality¹⁵. The CO₂ from bioenergy use, currently reported as a memo in the official GHG inventories under the UNFCCC, would need some form of payment to incentivize its capture. But this payment, perhaps from the UK government or a carbon trading system, would need a guarantee that Norway has permanently stored the carbon. An entity also needs to take the liability for a potential leakage from the geological reservoir, or if the biomass is not carbon neutral.

The simple BECCS supply chain outlined here would require a detailed carbon accounting system¹³ spanning three countries, over a potential period of decades (biomass growth and permanent storage). This accounting system would need to be coupled to a system of financial transfers to incentivize behaviour¹⁶. The entire system would require independent measurement, reporting, and verification. The accounting and financial system would have to be robustly applied across countries with vastly different motives and governance levels. Putting aside the technical and socio-political acceptability of BECCS, the governance challenges to incentivize BECCS would require resolving accounting and financial issues that remain sticking points in existing negotiations.

Political conversations

It has become clear that staying “well below 2 °C” will require the large-scale application of CDR. If this is ever to become part of a feasible climate-policy strategy, then questions of differentiated responsibilities among countries and economic sectors will be equally as important as hedging environmental side effects or bending cost curves. We suggest it is necessary to catalyse a political conversation about CDR, covering three key areas.

First, before the next round of updates to the Nationally Determined Contributions, starting with the UNFCCC’s ‘facilitative dialogue’ in 2018, countries should begin negotiating differentiated CDR responsibilities, to indicate potential pathways to net-zero emissions and volumes of CDR that may be achieved. This can be supported by scientific studies more clearly outlining the potential scale of country-level CDR³.

Second, develop a detailed and functional system of accounting, supported by measurement, reporting, and verification, to track carbon and financial flows along the international CDR value chain to allow governments to incentivize business to research, develop and deploy the necessary technologies.

Third, develop policy portfolios capable of incentivizing CDR, necessarily taking into account support measures that facilitate differentiated responsibilities both across sectors within countries and across

countries. Policy portfolios need to go beyond encouraging boutique applications to support the necessary gigatonne scale of CDR required. □

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COMMENTARY:

Climate risks across borders and scales

Andrew J. Challinor*, W. Neil Adger and Tim G. Benton

Changing climates are outpacing some components of our food systems. Risk assessments need to account for these rates of change. Assessing risk transmission mechanisms across sectors and international boundaries and coordinating policies across governments are key steps in addressing this challenge.

Changing climates are projected to result in novel conditions that challenge our ability to adapt. Change is already beginning to outpace the process of breeding crops and having them used by farmers¹. The rate of change may begin to

outpace other components of food systems. We already know that, without mitigation, current rates of change will significantly affect populations across the planet². Keeping pace with risks in changing climates requires research and policy to have sufficient

lead time to scan for and act on specific future risks.

National-level assessments of climate-change impacts and adaptation options seek to identify gaps between current policy and the policies needed to minimize

Define limits for temperature overshoot targets

Temperature overshoot scenarios that make the 1.5 °C climate target feasible could turn into sources of political flexibility. Climate scientists must provide clear constraints on overshoot magnitude, duration and timing, to ensure accountability.

Oliver Geden and Andreas Löschel

To the surprise of many, achieving consensus between industrialized nations, emerging economies and developing countries did not result in weakening the targets for global climate stabilization at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). Instead, in Paris in 2015, the previously envisaged target to keep warming “below 2 °C” was tightened to “well below 2 °C”, and supplemented with an aspirational goal of limiting the temperature increase to 1.5 °C.

Here, we argue that, although hailed as an important progressive step, the implementation of this extraordinarily ambitious target could, paradoxically, lead to a weakening of climate policy in the long term. With the focus on a temperature target that is highly unlikely to be met without a temporary period of overshoot¹, the risk is high that temperature targets will no longer be seen as strict upper limits. In the context of real-world United Nations climate policy, such a normalization of the overshoot idea introduces the possibility that political accountability will be lost. We suggest that climate scientists must define clear constraints for temperature overshoot pathways to avoid a ‘slippery slope’ effect.

Unexpected target

The Paris decision to focus on 1.5 °C as a temperature target caught the climate science community on the wrong foot. Research, including the 2013/2014 Assessment Report from the Intergovernmental Panel on Climate Change (IPCC), had focussed on investigating the hitherto prominent 2 °C target. Neither mitigation pathways towards stricter targets nor impacts that occur between 1.5 °C and 2 °C had been analysed in any depth. Nevertheless, climate scientists knew that aiming for no more than 1.5 °C warming above pre-industrial levels will involve a considerable degree of temperature overshoot^{2,3} (Fig. 1); that is, an exceedance of the threshold before bringing global mean temperature back below the intended level (for example, for 50 years by up to

0.3 °C, peaking at 1.8 °C)⁴. But there was — and still is — insufficient knowledge about the geophysical climate responses to such pathways. For example, it is unclear what the overshoot effects would be on issues such as sea-level rise, ice-sheet loss or thawing permafrost, and whether such impacts might be reversible when global mean surface temperature falls below the threshold again⁵.

The basic concept of overshoot is, of course, not new. Long before Paris, some emissions scenarios consistent with 2 °C already allowed for deliberate overshoot of atmospheric concentrations of greenhouse gases, with no or only minimal and short exceedance of the ultimate objective before 2100⁶. But, by accepting the UNFCCC’s invitation to produce the Special Report on 1.5 °C, the IPCC — and the climate science community — has accepted temperature overshoot scenarios as a new normality. This consequence of the more ambitious target has not reached broad appreciation among the public and policymakers. Specifically, the Paris Agreement does not contain any wording on temporary temperature overshoot, or on its maximum duration or magnitude. Nor does it provide a target time by which warming must be brought back below 1.5 °C, which is a key constraint in terms of achieving accountability.

Implied negative emissions

There are many instances where policymakers take the policy-relevant assumptions agreed upon by the scientific community for granted, but refuse to acknowledge or highlight them politically. The most prominent example is the inclusion of carbon dioxide removal from the atmosphere — also termed ‘negative emissions’ — in integrated assessment models that allowed for emissions pathways compatible with low stabilization targets. It thus helped policymakers to communicate that reaching 2 °C is still feasible, despite rising emissions.

But the same policymakers refrain from any political commitment⁶ to developing and deploying negative emissions

technologies at the assumed scale of 670–810 gigatonnes by 2100⁷. The assumptions in current integrated assessment models regarding carbon dioxide removal volumes already constitute a bold bet on the future⁸. Temperature overshoot pathways require aggressive decarbonization to limit the magnitude of temperature rise, as well as massive amounts of net negative emissions to bring temperature down again rapidly after they peak⁹ (Fig. 1).

Slippery slope

A deliberate overshoot as part of the temperature targets has the potential to shift their meaning significantly, at least in the realm of climate politics¹⁰. Because temperature targets have politically been communicated as representing exact (and scientifically defined) thresholds¹¹, introducing deliberate overshoot carries the risk of change in perception from strict upper limits to mere benchmarks that can be crossed for extended periods of time. Almost inevitably, in the eyes of policymakers and even more so heads of state and government, the basic parameters of overshoot — duration and magnitude — would turn into potential sources of political flexibility. In the discussion of 2 °C pathways, negligible quantities of temperature overshoot were not noted by policymakers or the public, and they certainly did not influence the political debate. In contrast, with a target of 1.5 °C, overshoot would gain a high profile.

Clear definitions for 1.5 °C are lacking among scientists, policymakers and the media, for example regarding baseline pre-industrial temperature or how many years would, on average, need to be above 1.5 °C in order to be considered as exceedance of the threshold^{12,13}. Despite — or exactly because of — these inadequacies, the coming decades will see more and more articles and media reports stating that the 1.5 °C line has been crossed already¹⁴. Public claims that this does not mean that 1.5 °C is lost forever, particularly because the world is working on bringing temperature into decline, will probably help to move the overshoot concept into mainstream thinking.

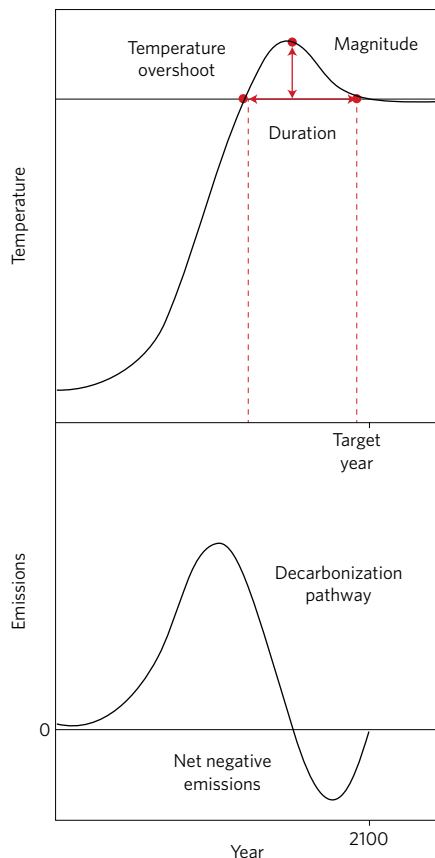


Fig. 1 | Schematic for policy-relevant parameters of temperature overshoot targets. Temperatures will continue to rise for some time after emissions have ceased to rise, and are likely to overshoot a 1.5 °C temperature threshold. Climate scientists should challenge themselves to define firm limits on the duration, magnitude and time limit of such an overshoot, to avoid a ‘slippery slope’ effect. Figure adapted from ref. ¹⁷, Wiley.

Missing accountability

Taking the patterns of real-world climate politics into account^{4,6,10}, it is unlikely that in this situation the international community will fight harder to move back below the threshold. It seems that a more likely outcome will be leniency and inconsistencies between talk, decisions and actions within governments. Without clearly defined constraints to overshoot, politicians cannot fail and thus cannot be held accountable for insufficient action. Whatever emissions pathways governments actually follow, they still could state that they are deeply committed to achieve the 1.5 °C target.

When there is no accelerated mitigation beyond the global pathway started with the national pledges made under the Paris Agreement, which brings the world on a track for 3.2 °C by 2100 (with a >66%

probability)⁷, parties to the UNFCCC would probably be interested to see the relevant timeframe extended beyond 2100 and temperature overshoot also applied to the 2 °C target.

But rather than openly demanding such a lightened mitigation, climate diplomats would probably prefer to motivate scientists to change the relevant assumptions. Such a request could come in the guise of policymakers’ standard question under which circumstances it is still possible to achieve the politically agreed climate targets. Subsequently, policymakers tend to cherry-pick from the scientific answers. For example, although the community of integrated assessment modellers is highlighting that meeting the 1.5 °C target means reaching net zero emissions by 2050 at the latest, as well as massive amounts of carbon dioxide removal afterwards, almost every policymaker in favour of 1.5 °C talks only about ‘zero emissions by 2050’. The politically uncomfortable necessity of net negative emissions is usually omitted.

To avoid such a scenario, climate scientists need to define constraints for overshoot. Otherwise, climate policymakers, and even more so other branches of governments, could easily miss the urgent need for drastic mitigation, because they are under the impression that even inadequate action will never result in political failure.

Establish standards

Ensuring that mitigation targets — including overshoot pathways — are precise, evaluable and attainable, so that they can fulfill their intended function to regulate action towards goal achievement¹⁵, is a task for all three Working Groups of the IPCC. These issues should be considered in the full Sixth Assessment Report, not just the Special Report on 1.5 °C.

We present five recommendations for the most policy-relevant parameters where standards have to be established and results must be communicated as unambiguously as possible: (1) there should be an agreement to keep the minimum probability level for not crossing a temperature threshold at the well-established 66%, at least in reports targeted at policymakers. Scenarios with lower probabilities and comparably larger carbon budgets — from the >66% dominant in 2 °C scenarios to the >50% still prevalent in 1.5 °C scenarios (or, in IPCC jargon, from ‘likely’ to ‘more likely than not’) — seem unjustified, if not misleading; (2) the year 2100 should be retained as a date by which any temperature target has to be met, and hence by which any overshoot must end. If targets agreed upon in 2015 cannot be met by 2100 then

it should be called failure; (3) climate scientists should provide clear constraints on magnitude and duration of overshoot, taking into account the geophysical impacts and the specific adaptation requirements of different overshoot profiles; (4) there should be an agreement to exclude any temperature overshoot scenario for 2 °C in future IPCC reports. This would be an easy way to communicate restrictions stemming from the Paris Agreement’s intention to strengthen the upper limit to ‘well below’ 2 °C; (5) and finally, requirements for net negative emissions after reaching the net zero line must be specified, scrutinized for feasibility^{8,16} and should become an essential part of any science communication on ambitious mitigation pathways.

These qualifications would strengthen the possibilities to evaluate contributions towards goal achievement politically and help hold governments accountable for insufficient action, even in the case of overshoot targets. Then — and only then — might the Paris Agreement’s global climate stabilization targets be able to steer ambitious mitigation action. □

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Europe's "Green China" Challenge

Oct 7, 2020 | **DANIEL GROS**

BERLIN – At the recent United Nations General Assembly, Chinese President Xi Jinping declared that his country will strive to become carbon neutral by 2060. It was a potentially highly consequential announcement, and it deserves more attention – not least from the European Union.

China produces nearly 30% of global carbon dioxide emissions from fossil fuels – about twice the share of the United States and three times that of the EU. Moreover, China's emissions are likely to continue increasing – Xi promised only that they would peak by 2030 – whereas the EU already has plans to cut its emissions by another 30 percentage points. This means that, by 2030, China's emissions might be 4-5 times the EU level. For this reason, China's achievement of carbon neutrality would have a much larger climate impact than Europe's efforts.

For the time being, a carbon-neutral China remains a vague political aspiration. The next step would be a formal commitment by China under the Paris climate agreement, followed by a clear and credible plan, with concrete milestones, for fulfilling that commitment.

China is likely to take these steps. After all, climate action is the one policy area where China genuinely can become a global leader in the near future, and the promise of carbon neutrality plays to China's strengths – namely, the government's ability to marshal vast amounts of investment in pursuit of an ambitious long-term goal.

Furthermore, though China's saving rate has diminished somewhat in recent years, it still saves much more than Europe or the US. This implies that it can afford to invest in capital-intensive renewables like photovoltaic and wind, and to upgrade its housing stock. China can also afford to lose the resources that have been – and will be – spent on coal-fired power plants that will soon be rendered useless.

It helps that the costs of renewables have fallen to levels that enable them to compete with fossil fuels. And as experience – for example, with batteries – has shown, when production is increased significantly, unit costs will fall further and faster. Given the sheer size of its market, China's adoption of such technologies will have far-reaching implications for the green transition globally.

In fact, the Chinese market is already shaping sectors that are essential to the green transition – including energy and automobiles – though often in complicated ways. China is the world's largest market for cars with internal combustion engines, as well as for electric vehicles. The electricity needed to power the EVs still comes from coal-fired power plants, which not only emit greenhouse gases, but also pollute the local environment. But China also invests more in renewables than any other country.

If China commits fully to a green transition, technologies like EVs and renewables are likely to become cheaper and more accessible than ever, with practical implications for Europe. For starters, China's commitment would render the carbon border tax – a central element of the European Commission's climate strategy – unworkable.

The Paris climate agreement, like the Kyoto Protocol that preceded it, is based on the principle of differential treatment of emerging economies, which have contributed far less to climate change than today's developed countries. It would be very difficult for the EU to justify a carbon border tax on imports from a country like China, which despite being much poorer than the EU, has made a similar zero-emissions pledge.

Moreover, a carbon border tax can be defended only on the grounds that foreign production is much more carbon-intensive than European production. And while that may be partly true in China today, it will not remain so for much longer. The most modern and efficient steel-production facilities are being built in China, not Europe (where producers balk at the cost of refurbishing their old mills).

If China implements its long-planned emissions-trading system, and extends its coverage to industry, the EU's justification for imposing a carbon tax on Chinese imports would be eviscerated (after all, the EU's own Emissions Trading System is a sensible market-led approach, at least for industry and power generation). In that case, among the EU's major trading partners, only the US would still be subject to a EU carbon border tax.

China's green transition creates another conundrum for the EU: the technologies on which it rests are often developed and produced with support from the Chinese government. What should the EU do when such state-supported technologies arrive at its borders?

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This dilemma is not new. In 2013, the EU imposed anti-dumping and anti-subsidy duties on Chinese solar panels. But the measures were gradually reduced, and eliminated in 2018. As much as the EU wanted to protect local producers of solar panels, getting renewables to world market prices was vital to support progress toward sustainability goals.

How the EU responds to the future arrival of green technologies from China remains to be seen. What already seems clear is that China's dual role – recognized by the European Commission – as a competitor and a partner will shape the ongoing green transition, with China's efforts both facilitating and challenging the EU's own plans and policies in unanticipated ways.

DANIEL GROS

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Comment



BRANDON THIBODEAUX/NY7/REDUX/EYEVINE

Government support for wind farms, such as this one in Texas, could help to create thousands of green jobs after the pandemic.

After COVID-19, green investment must deliver jobs to get political traction

Ryan Hanna, Yangyang Xu & David G. Victor

Analysis of past recoveries shows a low-carbon reboot matters more for climate than does the brief emissions crash.

The most precipitous contraction of the global economy in a century has seen carbon emissions plummet. By the end of this year, emissions are likely to be 8% less than in 2019 (ref. 1) – the largest annual percentage drop since the Second World War (see go.nature.com/3gej8th).

To avert a global recession, governments are injecting trillions of dollars into stimulating their economies. The International Monetary Fund anticipates economic recovery by the end of this year, provided there are no further

large outbreaks of disease². If nothing else changes, then emissions will tick upwards once more, as they have after each recession since the first oil shock of the early 1970s. The analysis we present here examines past recoveries to find lessons that help to plot a low-carbon path out of this one.

Breaking the historical iron law that links economic growth to carbon emissions requires energy supplies to be decarbonized, and is essential to stop global warming. But we must be honest. Nothing in history suggests

that emissions can drop fast enough to limit warming to 1.5 °C above pre-industrial levels – an aspirational goal of the Paris agreement, which is up for review over the next few years. This would mean cutting emissions by an amount similar to that delivered by the current economic catastrophe every year for the next decade³. We need more pragmatic goals.

The way in which governments spend stimulus monies now will dictate how global warming plays out. Views differ. Some political analysts hope that the COVID-19 pandemic will be a wake-up call that catalyses political action⁴ – a blunt reminder that the largest threats to prosperity, such as climate change, require respect for science and global engagement. Others see the opposite: national governments turning inwards, narrowing their focus to immediate concerns such as securing health, jobs and the economy, rather than the planet.

So far, the latter approach seems to be winning⁵. Rather than boosting green investment, in the past ten weeks, the United States, Mexico, South Africa and other nations have relaxed laws controlling pollution and standards for vehicle energy efficiency. The US rollback on fuel economy rules, finalized in March, will commit the nation to higher transport emissions – now the largest source of warming gases in the United States – for a decade or more. That's worrisome. Because carbon dioxide lingers in the atmosphere for more than a century, the long-term trajectory of emissions over many years determines how much CO₂ stock accumulates. A brief lull is instructive, but we must urgently build on it to limit long-term warming.

In this crisis, any climate-mitigation plan must deliver on the public's immediate needs or it will not fly. Luckily, there are sweet spots that can deliver and save hundreds of thousands of jobs⁶ – such as investing in renewables and energy efficiency, and preserving the existing fleet of zero-emission nuclear power plants.

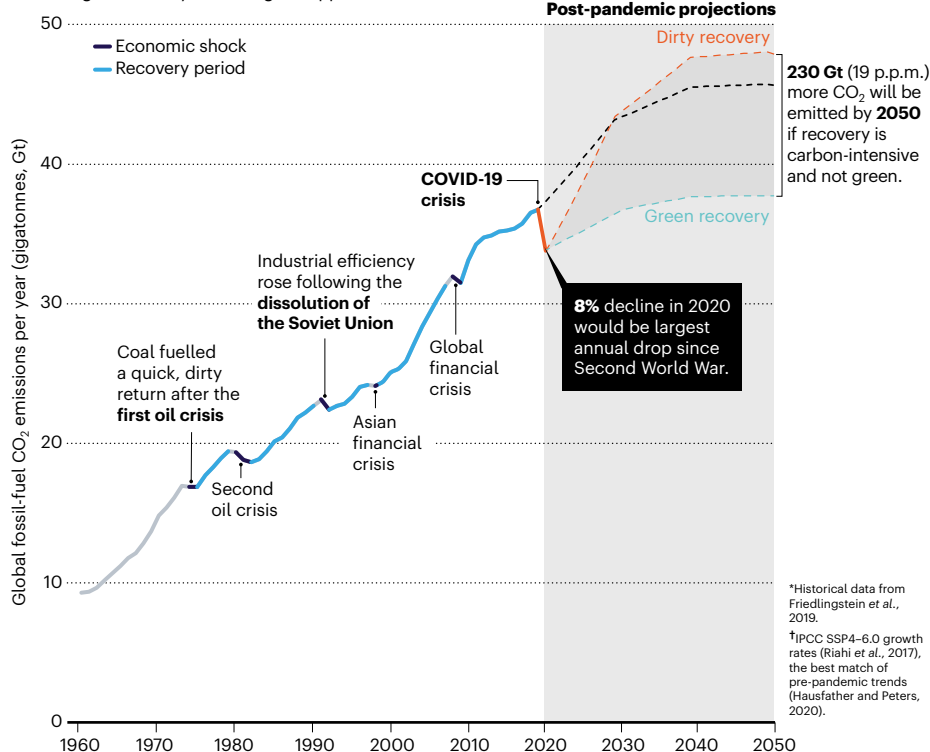
Climate activists and analysts recognize that massive government spending can be channelled to their favoured causes, as happened in the economic stimulus after the financial crisis of 2008 (ref. 7). What they have not grasped is just how severely the politics have shifted – away from long-term aspirations, such as protecting the climate for the decades ahead, and towards restoring jobs and wealth right now. Without political realism, this opportunity for green recovery will be squandered.

Rhymes of history

In terms of scale, the ongoing recession already exceeds any we've seen in modern times. Unemployment in the United States,

SHOCK AND RECOVERY

Emissions* from fossil fuels dip during recessions as the world economy slows. The rate of growth during recovery depends on whether green or dirty technologies supplant old infrastructure.



hard to measure because it is soaring so quickly, was 16% last month and is still rising. (About one-quarter of the US workforce didn't have jobs at the peak of the Great Depression in the 1930s.)

History doesn't repeat itself, but, as many have said, it often rhymes. The world has experienced five major economic shocks

"Any climate-mitigation plan must deliver on the public's immediate needs or it will not fly."

since the first oil crisis, which began in late 1973 (see 'Shock and recovery'). Four of these slowed the rise of emissions. For example, our analysis shows that during the recovery from the second oil crisis, which began in 1979, emissions growth fell by one-third. They went from 3.6% per year during 1976–79 to 2.4% per year during 1983–90. The next big recession was triggered by the break-up of the Soviet Union in 1991. It saw the trajectory flatten by another one-third, to 1.6% per year during 1994–97.

The 1998 Asian financial crisis was the exception. After a short recession, emissions growth doubled during a decade of rapid industrial expansion. This was the period of the phenomenal rise of China, which promoted heavy manufacturing and exports, all fuelled by coal. History's rhythm skipped as the global economic order shifted. It returned with the next shock: after the global financial crash of 2008, emissions growth halved to 1.6% per year over the next decade.

Indeed, the past decade has seen the longest period of flattened emissions since the Second World War. This era coincided with sustained economic growth. It is politically easier for governments to focus on long-term goals such as climate change (as many governments did) when economies are expanding. Furthermore, up to 15% of the global stimulus funding injected after the 2008 financial crisis went into developing and deploying green technologies⁷.

The United States invested in smart meters and launched programmes to innovate in batteries, renewables and carbon capture. China and others did the same, strengthening their commitment to wind and solar technologies (which tumbled in cost by roughly 70%

and 90%, respectively, in the decade after; see go.nature.com/2u2jres). It also helped that economies shifted towards services such as digitization – these generate a lot more value using much less energy and emit less.

Shocks, although painful, are political and industrial turning points if they come with incentives for low-carbon infrastructure. For example, emissions fell by 15% in the decade following the reunification of West and East Germany. This was because East Germany was exposed to Western technology and investment, along with incentives for efficiency. After the 1973 and 1979 oil shocks, high energy prices encouraged companies to invest in more-efficient production. Such change is not guaranteed. The oil crises also led governments to find local fuels to replace imported oil. That was a boon for coal: its extra emissions partly offset the gains from energy efficiency.

Choices ahead

When economies rise from the current shock, which rhyme will they follow, if any? Will stimuli defend old practices, or boost even dirtier ones? Or will this opportunity tilt the emissions curve downwards, once and for all?

The record 2020 emissions crash, by itself, will ameliorate future warming. In our analysis, even if economies restart next year on their pre-pandemic emissions trajectories, then by 2050, the shock will have prevented a cumulative 128 gigatonnes of CO₂ (GtCO₂) from reaching the atmosphere – equal to about three years of emissions at 2018 levels. That would yield lower CO₂ concentrations in the atmosphere – about 10 parts per million (p.p.m.) less than had no pandemic occurred. (For a 6% drop in emissions, as predicted by the World Meteorological Organization, the figures are 101 GtCO₂ and 8 p.p.m..)

Even more important than the drop in emissions, however, is the shape of recovery. Economies rarely bounce right back to their pre-shock state. Instead, they follow greener or dirtier paths. For example, a dirty recovery fuelled with coal, as happened in the wake of the Asian financial crisis, would quickly re-inflate CO₂ emissions so that they surpass the pre-pandemic trajectory. A greener path, similar to the searches for efficiency after the Soviet collapse or for green recovery after the 2008 crisis, would build on the carbon glitch that the pandemic has given us.

According to our analysis, whether the forthcoming recovery follows the historically green or dirty pathway amounts to a difference of 230 GtCO₂ entering the atmosphere by 2050, equivalent to a change of about 19 p.p.m. in atmospheric concentration – about twice the potential impact of the shock alone. With serious investment in decarbonization, the actual trajectory could be much lower; indeed,

bending down the emissions curve requires charting a totally new course.

Pressing realities

How can we put ourselves on the lower emissions path? First, by getting realistic about which climate projects can be delivered promptly. Political leaders – and climate activists who want to help them succeed – need to filter policy actions by what is politically viable⁶. In short, that means coming up with projects that deliver jobs and revenues quickly.

What's in? Incentives to boost the pipeline of wind and solar power plants. At the start of this year, more than 250,000 people worked in solar energy in the United States. The pandemic has since wiped out five years of job growth in this sector – jobs that will return quickly if credible

“Economies rarely bounce right back to their pre-shock state.”

investment incentives are in place.

Keeping the existing fleet of nuclear reactors⁵ open would protect tens of thousands of high-paying, highly skilled jobs. Infrastructure construction, such as erecting power lines and conducting energy retrofits for buildings and public transportation, is another large potential employer. Green infrastructure is crucial because it keeps giving the gift of lower emissions even after the crisis recedes.

What's out for the time being? Policies such as carbon taxes and technology mandates that impose new costs on customers who are already struggling financially. Also out are costly investments in abstract technologies and infrastructures that might prove transformative but which can't be scaled up quickly – such as carbon capture and hydrogen power. Progress is still possible in places where the spadework has largely been done, such as for the hydrogen demonstration network at Teesside in the United Kingdom. It is also possible where incentives are already on the books – such as a US subsidy scheme for carbon capture⁸. Research and development have a role, particularly where they are able to prime technologies for commercialization.

The European Green Deal is a good model for stimulus packages. It is a massive, €1-trillion (US\$1.1-trillion) decade-long investment plan that combines industrial growth with deep decarbonization and efficiency. So far, it has retained political support because most European governments remain committed to climate action, even in the face of the pandemic. It will need tailoring to stay focused on areas that deliver jobs rapidly.

The new realpolitik requires rethinking attitudes to existing companies. Gone are dreamy visions of demolishing old, dirty

industries and replacing them with a green nirvana of sustainable businesses. Existing firms will need to be involved in the recovery – they are ready to restart and politically powerful. A savvy political strategy would isolate only those companies whose actions egregiously undermine climate goals – conventional coal is a leading candidate – and would ensure their workers are treated justly and retrained in new areas of employment.

It will be easier to pick political and climate winners sector by sector⁹. The actions needed for steel and cement production – in which new technological systems must be tested at scale – are different from the power sector, in which the technologies are more mature. Front-loading the design and deployment of the first few zero-emissions steel mills and cement plants can help to generate employment. In the power sector, expansion of renewable technologies and power lines can absorb investment quickly. A sectoral approach can also aid cooperation across international borders, which is essential to addressing climate change, yet has suffered badly in recent years.

The world stands today at another crucial juncture for climate policy. The trillions devoted to stimulus have, so far, sought to stabilize economies and workers. With a fresh focus that looks further into the future, the next waves of spending must also help to protect the climate.

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We Have Climate Leaders. Now We Need Followers.

To win over more nations, we need fixes with tangible benefits, like reducing local air pollution and cutting energy costs.

By David G. Victor

Dr. Victor is a professor of international relations at the University of California, San Diego.

Dec. 13, 2019

As the United Nations' annual climate conference in Madrid winds to a close, it has become clear that climate summits are stuck in a rut. The job of cutting global emissions is actually getting harder, and not just because the planet keeps warming.

Climate summits have become festivals at which leaders talk about leadership. But leadership doesn't matter without followership. And that's the problem in addressing the climate crisis. There aren't enough followers.

In 1990, when the United Nations first began diplomatic talks on climate change, the countries, cities, states and provinces poised to become leaders in climate policy accounted for about 34 percent of global emissions of carbon dioxide from burning fossil fuels and industrial operations, according to my research. That group included essentially all of today's Europe (minus Poland, which is heavily powered with coal and seems keen to stick with it), about one-third of the states in the United States, most of Canada's provinces, Japan, Korea and a few other countries. Those leaders mattered because through their own actions, they could make a big dent in the climate problem.

Today, reliable climate leaders account for just about 20 percent of global emissions, a share that keeps shrinking as they make further cuts while emissions from the rest of the world keep growing. The more the leaders lead, the less direct relevance they have to the climate problem. Worse, emissions from countries that have often blocked action on climate change — Russia, plus Saudi Arabia and other members of OPEC, the oil exporting cartel, now stand at 12.4 percent and are rising. The rest of the world's carbon dioxide emissions, two-thirds of the total, come from countries that may care about climate change but care a lot more about other issues, like poverty and local air pollution.

Thus, the leaders are being out-emitted by the countries that either would just as soon see the Paris Agreement on climate change become unglued or are wary of entangling their national policy in global schemes to manage the climate. But leaders can fix this by evaluating everything they do through the lens of whether it increases the chances of followership.

Aggressive programs to convert whole economies to renewable power at a breakneck pace probably fail that test, because the expense and difficulty of quickly replacing the last 20 percent or 30 percent of an electric grid's remaining fossil-fuel-generating capacity with unreliable wind and solar power is a cost that no society but the most zealous will bear. We'll still need those fossil fuel plants to anchor most grids so that electricity will be dependable and affordable. For that flexible generation, there are other ways to offset or eliminate emissions, which is what matters most for the planet.

By contrast, demonstrating how to solve hard problems, like decarbonizing high-heat applications in refining, steel and cement production, and other processes at reasonable cost, passes the followership test. All economies will need those fixes because emissions from those applications are rising quickly, and proven solutions don't exist. All economies will also benefit from practical demonstrations by leaders of programs that make big increases in energy efficiency, which can lower energy costs and also cut emissions.

Solutions that help protect the climate while also yielding more tangible benefits, like reducing local air pollution, are particularly effective ways for leaders to inspire followership. One example is cutting noxious soot emissions from diesel engines, because soot doesn't just kill people directly but is also a substantial cause of climate warming. Such strategies are a way to get started, and some efforts are already underway, but they only go so far in bending down the global emissions curve.

Leaders can also work directly with followers to help speed the diffusion of ideas — as Denmark has done, for example, by passing on to China's electric grid operators what it has learned about how to operate a grid with lots of variable wind power. When tiny Denmark uses more wind, the impact on global emissions is minuscule; when China does, the effect can be enormous.

Almost everything serious about achieving deep cuts in greenhouse gas emissions — like developing new technologies to eliminate them in the manufacture of steel and plastics, or switching to electric aircraft that yield no emissions — is fraught with industrial uncertainty, cost, risk and contention. Demonstrating solutions is a task ideally suited for leaders willing to spend heavily to find solutions.

The governments and industries truly willing to lead are a relatively small and well-aligned group. In diplomatic settings, they can work in small groups to coordinate their actions. Keeping these groups aligned requires breaking the big climate problem down into smaller, manageable units because each industrial sector has different politics, technological potentials and policy needs.

In Madrid, I was part of a team that released a study showing what is needed in each economic sector to reduce emissions and how leaders can make a difference. As we did our work, we were struck and disturbed by how little political and industrial effort has been mobilized to deeply decarbonize economies, despite three decades of international talks on climate change. To change that, we offered two broad recommendations.

The first is that countries need to go beyond simply putting a price on carbon or adopting bold emissions goals. What's required is a more strategic approach to policymaking aimed at reconfiguring technologies, business models, infrastructure and markets in each country's greenhouse-gas-emitting economic sectors to reduce emissions. In an earlier era, that was called industrial policy, an approach that has fallen out of favor in many countries but, done smartly, is what's needed now.

The second is that, though formal climate diplomacy tends to be organized around countries, the real focus both for governments and industries should be on coordinating actions in economic sectors to reduce emissions. Of course, governments must be actively involved to increase incentives for investment and economies of scale for promising technologies, and to level playing fields so that early adopters of new green technologies are not held back by the constraints of competitiveness.

Climate summits will always have an air of despair because it is easy for nations to agree on ambitious collective goals even as, individually, governments are much more reluctant to promise robust action. Action will always fall behind ambition. Structurally, climate diplomacy has become like some religions: brimming with detailed information about our individual failure to do what's needed yet somehow optimistic about the collective goal of salvation.

The real test of leadership isn't "stronger ambition," a favorite phrase in the Madrid hallways, but the swifter diffusion of new technologies and approaches that will reduce emissions rapidly. It is the followers who will determine the fate of the planet.

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FOREIGN AFFAIRS

The Paths to Net Zero

How Technology Can Save the Planet

By

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For 30 years, diplomats and policymakers have called for decisive action on climate change—and for 30 years, the climate crisis has grown worse. There are a multitude of reasons for this failure. The benefits of climate action lie mostly in the future, they are diffuse and hard to pin down, and they will

accrue above all to poor populations that do not have much of a voice in politics, whether in those countries that emit most of the world's warming pollution or at the global level. The costs of climate action, on the other hand, are evident here and now, and they fall on well-organized interest groups with real political power. In a multipolar world without a responsible hegemon, any collective effort is difficult to organize. And the profound uncertainty about what lies ahead makes it hard to move decisively.

These political hurdles are formidable. The good news is that technological progress can make it much easier to clear them by driving down the costs of action. In the decades to come, innovation could make severe cuts in emissions, also known as “deep decarbonization,” achievable at reasonable costs. That will mean reshaping about ten sectors in the global economy—including electric power, transportation, and parts of agriculture—by reinforcing positive change where it is already happening and investing heavily wherever it isn't.

In a few sectors, especially electric power, a major transformation is already underway, and low-emission technologies are quickly becoming more widespread, at least in China, India, and most Western countries. The right policy interventions in wind, solar, and nuclear power, among other technologies, could soon make countries' power grids far less dependent on conventional fossil fuels and radically reduce emissions in the process.

Technological progress in clean electricity has already set off a virtuous circle, with each new innovation creating more political will to do even more. Replicating this symbiosis of technology and politics in other sectors is essential. In most other high-emission industries, however, deep decarbonization has been much slower to arrive. In sectors such as transportation, steel, cement, and plastics, companies will continue to

resist profound change unless they are convinced that decarbonization represents not only costs and risks for investors but also an opportunity to increase value and revenue. Only a handful have grasped the need for action and begun to test zero-emission technologies at the appropriate scale. Unless governments and businesses come together now to change that—not simply with bold-sounding international agreements and marginal tweaks such as mild carbon taxes but also with a comprehensive industrial policy—there will be little hope of reaching net-zero emissions before it's too late.

THE FUTURE IS ELECTRIC

From today's vantage point, no single domain offers greater opportunities for deep decarbonization than electric power. The use of electricity does not increase or reduce emissions in itself; electricity delivers energy that may or may not be clean depending on how it was generated. An electric car, for instance, doesn't do much good against global warming if all the electricity comes from conventional coal plants. Still, electrifying the economy—in other words, designing more processes to run on electricity rather than the direct combustion of fuels—is essential. This is because, compared with trying to reduce emissions in millions of places where they might occur, it is far easier and more efficient to reduce emissions at a modest number of power plants before distributing the clean electricity by wire. Today, Western economies convert about 30 percent of their energy into electric power. If they want to get serious about decarbonization, that fraction will need to double or more.

No single domain offers greater opportunities for decarbonization than electric power.

Getting there will require progress on two fronts. The first is the electrification of tasks that use vast amounts of energy but still rely on fossil

fuels, such as transportation and heating. Overall, transportation accounts for 27 percent of global energy use, and nearly all of it relies on oil. The car industry has had some success in changing this: the latest electric vehicles rival high-end conventional cars in performance and cost, and electric cars now make up around eight percent of new sales in California (although only 1.3 percent nationwide) and nearly 56 percent in Norway, where the government offers massive subsidies to buyers. With improved batteries, heavier-duty vehicles, including buses and trucks, could soon follow. In fact, China already fields a fleet of over 420,000 electric buses. By contrast, aviation—which makes up only two percent of global emissions but is growing rapidly and creates condensation trails in the sky that double its warming effect—presents a tougher challenge. A modern battery can store only two percent of the energy contained in a comparable weight of jet fuel, meaning that any electric airplane would need to carry an extremely heavy load in batteries to travel any reasonable distance. Even in the best-case scenario, commercial electric aviation at significant scale is likely decades away, at least for long-haul flights. Long-distance shipping also faces challenges so daunting that electrification is unlikely to be the best route. And in each of these areas, electrification is all the more difficult because it requires not only changing the conveyances but also building new charging infrastructures.

Besides transportation, the most important electrification frontier is heating—not just in buildings but as part of industrial production, too. All told, heating consumes about half the raw energy that people and firms around the world use. Of that fraction, some 50 percent goes into industrial processes that require very high temperatures, such as the production of cement and steel and the refining of oil (including for plastics). These sectors will continue to rely on on-site fossil fuel combustion for the foreseeable future, since electricity cannot match the temperature and

flexibility of direct fuel combustion. Yet in other areas, such as lower-temperature industrial processes and space heating for buildings, electrification is more practical. Heat pumps are a case in point: whereas conventional heaters work by heating up indoor air, heat pumps act like reversible air conditioners, moving heat (or, if necessary, cold) indoors or outdoors—a far more efficient approach.

Electrification, of course, will not on its own reduce emissions by much unless the power grid that generates and distributes the electricity gets cleaner, too. Ironically, some countries have made modest progress on this front even as they have doubled down on fossil fuels. China, for instance, has swapped out aging coal plants with newer, more efficient ones, cutting emission rates in the process. (The country's most efficient coal plants now emit less carbon dioxide per unit of electricity than comparable U.S. plants.) The United States, for its part, has cut down on its emissions thanks to innovations in horizontal drilling and fracking that have made it economically viable to extract shale gas. In 2005, when this technology first became commercially relevant, coal accounted for half of all the electricity produced in the United States; today, coal's share is down to one-quarter, with much cleaner and inexpensive natural gas and renewables making up the difference.

A blast furnace at a steel factory in Duisburg, Germany, January 2020
Wolfgang Rattay / Reuters

In theory, fossil fuels could still become much cleaner, even nearly emission free. This could be possible with the help of so-called carbon capture and storage (CCS) technologies, which capture the carbon dioxide emissions created by industrial processes and pump it safely underground. In practice, investors have remained wary of this approach, but in both the United

States and some European countries, recently introduced subsidies are expected to unleash a wave of new CCS projects in the years ahead. One CCS scheme, currently being tested by a group of engineering and energy firms, completely rethinks the design of power plants, efficiently generating electricity from natural gas while capturing nearly all the carbon dioxide produced in the process at little extra cost. In regions where natural gas is cheap and abundant, this technology could be a game changer.

For now, improved fossil fuel technology has amounted to shallow decarbonization: it has reduced emissions enough to slow the rate of climate change—in the United States, emissions from the power sector have dropped by 29 percent since 2005 thanks mainly to the shale gas revolution and growth of renewables—but not enough to stop it. To prevent the world from warming further will require much more focus on technologies that have essentially zero emissions, such as wind, solar, hydroelectric, and nuclear power, in addition to CCS, if it proves commercially scalable. According to the United Nations' Intergovernmental Panel on Climate Change, these low-carbon technologies would need to generate 80 percent of the world's electricity by 2050 (up from about one-third today) in order to limit warming to two degrees Celsius above preindustrial levels.

Renewables, in particular, will play a central role. Thanks to decreases in the cost of wind and solar power equipment—and thanks to a mature hydroelectric power industry—renewable energy already accounts for over one-quarter of global electricity production. (Nuclear provides another ten percent.) In the United States, the cost of electricity from large solar farms has tumbled by 90 percent since 2009, and wind energy prices have fallen by nearly 70 percent—and both continue to drop.

Given those plunging costs, the main challenge is no longer to make renewables cheap; it is to integrate them into the power grid without disruptions. To avoid blackouts, a power grid must align supply and demand at all times. Energy output from wind and solar plants, however, varies with the weather, the season, and the daily rise of the sun. The more a power grid relies on renewables, then, the more often the supply will not match the demand. In the extreme, extra power must be dumped—meaning that valuable capital and land were used inefficiently. To be less vulnerable to such shocks, utility companies will need to expand the size of their power grids, so that each can draw on a larger and more diverse array of energy sources. In order to deal with excess supply from renewables—a condition that will become much more frequent as the share of renewables rises—they must also create incentives for users to vary their demand for power more actively and find ways to store surplus electricity on a much larger scale. Today, nearly all bulk storage capacity takes the form of hydroelectric pumps, which store electricity by moving water uphill and recovering about 80 percent of the power when it flows back down. In the years ahead, soaring demand for electric vehicles will drive down the cost of lithium-ion batteries; those batteries could become an affordable way to store energy at the grid level, too. And as the need for storage increases, even cheaper methods may come on the market.

The main challenge is no longer to make renewables cheap; it is to integrate them into the power grid without disruptions.

To better integrate renewables, policymakers can also rely on the strategic use of another zero-emission technology: nuclear energy. Although most efficient when running flat out 24 hours a day, nuclear power plants can also operate flexibly to cover the supply gaps from wind and solar power. Some of France's nuclear reactors, for instance, already cycle from about one-

quarter to full power and back again, sometimes twice a day, to compensate for fluctuations in the supply and demand of renewables.

Independent of renewables, nuclear power already contributes massively to cleaner grids. Every year, some 440 operational nuclear reactors account for lower global carbon dioxide emissions of an estimated 1.2 billion metric tons. In the United States, research suggests that keeping most existing nuclear plants open would be far less expensive than many other policy options. In fact, most countries would do well to expand their nuclear power even further to cut back on their emissions. In the West, however, major expansions are not on the horizon: public opposition is strong, and the cost of building new reactors is high, in part because countries have built too few reactors to benefit from the savings that come with repetition and standardization. Yet in other parts of the world—especially China and South Korea, which have more active nuclear power programs—the costs are much lower and public opposition is less pronounced. Moreover, whereas countries once designed and built their own reactors, today many simply import them. That model can create new risks—the sector’s leading exporter today is Russia, a country not renowned for its diligence regarding reactor safety or the security of nuclear materials—but it also has the potential to make commercial nuclear technology available to many countries that could not develop and deploy it safely on their own. Abu Dhabi’s purchase of four gigantic South Korean-built reactors, the first of which is set to start operating next year, shows the promise of this model. The same approach could work for other countries that currently satisfy their large energy needs with fossil fuels, such as Saudi Arabia.

When it comes to the precise technological makeup of a future decarbonized economy, expert opinions diverge. Engineers and economists, for the most part, imagine solutions that bundle several approaches, with

both CCS and nuclear power acting as important complements to renewables. Political scientists, on the other hand, tend to see a bigger role for renewables—one of the few areas in energy policy that usually garners support from across the ideological spectrum, including in the United States. Yet even this rather popular solution can prove divisive. Fierce debates rage over where to locate generators such as wind turbines, including among putative environmentalists who support the technology only if they don't have to look at it. Public opposition to new wind turbines in Norway—even in already industrialized areas—and to offshore wind parks in the eastern United States are harbingers of tough siting fights to come. The same issue arises when it comes to power lines: making the most of renewables requires longer, more numerous power lines that can move renewable power wherever it will be needed, but public opposition can make such grid expansions a bureaucratic nightmare. In California, for example, the most recent big power line designed to move renewable power where it will be useful—in that case, from the sunny desert to San Diego—took a decade to build, even though the technical engineering and construction portion of the project should have consumed no more than two years. China, by contrast, has blown past the efforts of the United States and Europe, with dozens of ultrahigh-voltage lines, most of them built in the last decade, crisscrossing the country.

THE GREAT UNKNOWN

Political obstacles notwithstanding, expanding the electrification of transportation and heat and the production of low-carbon electricity offers the surest path to a clean economy to date. The latest analysis by the Intergovernmental Panel on Climate Change, for instance, suggests that more pervasive use of clean electricity in the global economy would cover more than half the cuts needed for deep decarbonization. Yet just how big a role electrification will ultimately play is hard to predict—in part because its

impact will depend on the future trajectory of rival solutions that are only just beginning to emerge and whose potential is impossible to assess precisely.

Hydrogen, in particular, could serve much the same function as electricity does now in carrying energy from producers to users—and it offers crucial advantages. It is easier to store, making it ideal for power systems dependent on ever-fluctuating supplies of renewable energy. And it can be burned—without producing any new emissions—to generate the high levels of heat needed in heavy industry, meaning that it could replace on-site fossil fuel combustion in sectors that are hard to electrify.

Hydrogen (either in its pure form or mixed with other chemicals) could also serve as liquid fuel to power cars, trucks, ships, and airplanes. A zero-emission economy could integrate the two carriers—electricity and hydrogen—using each depending on its suitability for different sectors.

The technology needed to turn hydrogen into an energy carrier already exists in principle. One option is to break up (or electrolyze) water into its constituent elements, hydrogen and oxygen. The hydrogen could then be stored or transported through the natural gas pipeline networks that already string across all advanced economies. Once it reached its user, it would be burned for heat or used as an input for a variety of chemical processes. So far, this approach is too expensive to be viable on a large scale, but growing investment, especially in Europe, is poised to drive down the cost rapidly. Initial tests, including planned networks of hydrogen pipelines outside Stockholm (for making steel), Port Arthur in Texas (for industrial chemistry), the British city of Leeds (for residential heat), and the Teesside area (for several applications, including power generation) and numerous other ventures, will soon yield more insights into how a real-world hydrogen economy would fare.

CCS is somewhat of a wildcard, too. Some industrial processes produce prodigious and highly concentrated streams of carbon dioxide emissions that should be relatively easy to isolate and capture. The production of cement, which accounts for a whopping four percent of global carbon dioxide emissions, is a good example. But firms operating in global commodity markets, where missteps can be economically disastrous, are hesitant to invest in fledgling systems such as CCS. To change that, state-supported real-world testing is overdue. A nascent Norwegian project to collect carbon dioxide from various industrial sources in several northern European countries and inject it underground may provide some answers.

Another promising area for reducing emissions is agriculture, a field in which advances on the horizon could yield large cuts. More precise control over the diets of animals raised for food—which will probably require more industrial farming and less free grazing—could lead cows, sheep, and other livestock to emit less methane, a warming gas that, pound for pound, is 34 to 86 times as bad as carbon dioxide. (It would also help if people ate less meat.) Meanwhile, a host of changes in crop cultivation—such as altering when rice fields are flooded to strategically determining which engineered crops should be used—could also lower emissions.

Agriculture's biggest potential contribution, however, lies belowground. Plants that engage in photosynthesis use carbon dioxide from the air to grow. The mass cultivation of crops that are specially bred to grow larger roots—a concept being tested on a small scale right now—along with farming methods that avoid tilling the soil, could store huge amounts of carbon dioxide as underground biomass for several decades or longer.

As the hard reality of climate change has set in, some have begun to dream of technologies that could reverse past emissions, such as “direct air capture” machines, which would pull carbon dioxide from the atmosphere and store it underground. Pilot projects suggest that these options are very costly—in part because it is thermodynamically difficult to take a dilute gas from the atmosphere and compress it into the high concentrations needed for underground storage. But cost reductions are likely, and the more dire the climate crisis becomes, the more such emergency options must be taken seriously.

GETTING TO ZERO

The ramifications of climate change are proving more disastrous than originally thought, just as politicians are realizing that cutting emissions is harder than anticipated. That leaves a large and growing gap between climate goals, such as the Paris agreement’s target of limiting warming to 1.5–2.0 degrees Celsius above preindustrial levels, and the facts on the ground. The world has already warmed by about 1.1 degrees, and at least another half a degree is probably inevitable, given the downstream effects of today’s emissions, the inertia of the climate system, and the inherent difficulty of reshaping industrial infrastructure.

The defining industrial project of this century will be to leave carbon behind.

To close the gap between aspirations and reality, governments need to grasp that they cannot rely solely on hard-to-enforce international agreements and seductive market-based approaches, such as carbon pricing, that will work only at the margins. The world needs new technology, and that means more R & D—much more—and a lot of practical experience in testing and deploying new technologies and business strategies at scale. To stimulate that progress, governments need to embrace what is often called “industrial

policy.” In each major emitting sector, authorities should create public-private partnerships to invest in, test, and deploy possible solutions.

The details will vary by sector, but the common thread is that governments must directly support fledgling technologies. That means tax credits, direct grants, and promises to procure pioneering green products even if they are more expensive than their conventional alternatives. These steps will ensure that new low-emission products in sectors such as cement, steel, electricity, plastics, and zero-carbon liquid fuels can find lucrative markets. The need for such government intervention is hard to overstate. Producing steel without emissions, for example, could initially be twice as expensive as producing it in the traditional way—a penalty that no company operating in a global, competitive commodity market will accept unless it has direct support in developing the necessary technology, reliable markets through government procurement, and trade protections against dirtier competitors.

For now, no major government is taking these steps at a reasonable scale. The much-touted Green New Deal in the United States is still weak on specifics, and the more concrete it becomes, the harder it may be to form a supportive political coalition around it. Its counterpart, the European Green Deal, is further along yet also faces political challenges and administrative hurdles. If these schemes focus on making critical industries carbon free and provide lots of room for experimentation and learning, they could prove effectual. If they become “Christmas-tree proposals,” with ornaments for every industrial and social cause imaginable, then they may collapse under the weight of their cost and poor focus.

A bigger supply of new fundamental ideas for decarbonization is essential. On the first day of the 2015 Paris climate conference, a group of 24

governments, along with the eu and the billionaire philanthropist Bill Gates, pledged to double their spending on clean energy R & D. So far, the group's self-reported data show that it is at 55 percent of its goal; independent and more credible assessments suggest that the actual increase is only half of that. Mission Innovation, as the collective is known, has also set up working groups on solutions such as CCS and hydrogen, but those groups have little capacity to develop and implement a collective research agenda. What is needed instead are smaller, more focused groups of high-powered backers. Powerful governments have a part to play, but not an exclusive one, considering that some (such as the United States today) are unreliable and therefore less important than subnational actors, such as California, or even wealthy philanthropists.

Initiatives such as Mission Innovation are essential because markets for clean technology are global. Three decades ago, when diplomatic efforts to combat climate change began, most innovation in heavy industry, including in the energy sector, came from a small number of Western countries. No longer. When it comes to electric buses and scooters, China is king, with India taking some baby steps. For electric cars, U.S., Japanese, and European manufacturers are in the lead technologically, but Chinese firms have larger volumes of sales. Innovation in ultrahigh-voltage power lines is coming particularly from engineering firms based in Europe and Asia. The explosion in China of low-cost production of solar photovoltaics was initially geared to supply the highly subsidized German market.

Given this geographic breadth, nationalist trade policies that limit cross-border exchange and investment could easily gum up the works. In particular, the United States should reform its approach to foreign investment in sensitive technologies. Instead of the current review policy—an opaque process managed by the Committee on Foreign Investment in

the United States—regulators should follow the “small yard, high fence” rule proposed by former U.S. Defense Secretary Robert Gates: identify a short list of technologies that are truly sensitive and protect the United States’ advantage in those areas while opening the doors to the power of globalization for all others.

THE LONG HAUL

The great technological transformation of the nineteenth century was to harness the power of fossil fuels for industrial growth. The twentieth century rode the wave of innovation that followed and, inadvertently, put the planet on track for massive warming. The defining industrial project of this century will be to leave carbon behind. As governments and firms embark on this enterprise, they should prepare for the long haul. It took cars some 30 years, starting in 1900, to completely replace horses on American roadways—and horses and cars could use the same roads. History has shown that transformations affecting entire infrastructures, as are needed today, take even longer.

Even immediate investment by a cluster of motivated countries, organizations, and billionaires, in other words, cannot transform the industrial system overnight. Yelling louder will not change that. Setting bold goals can help, but new technological facts on the ground—sped along by active industrial policy and international cooperation—are what will transform the politics and make deep decarbonization a reality. Change will be slower than advocates and scientists would like. But it will accelerate if the leaders most willing to act on climate change stop moralizing and start seeing deep decarbonization as a matter of industrial engineering.

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