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The Futures of Sino-Russian Cooperation

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12. The futures of Sino-Russian cooperation: Implications for climate (ir)responsibility in the Arctic

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Abstract

The Sino–Russian relationship is among the key variables of power dynamics in global climate governance and the changing tides of Russia’s war in Ukraine. In this chapter, we focus on how this relationship will shape the implementation of global climate responsibility in the coming years. Taking a future-oriented approach to politics, we examine plausible alternative developments for Sino–Russian cooperation in the Arctic and beyond, to shed light on how the changing shape of the Sino–Russian partnership might impact the implementation of climate responsibility or its opposite: climate irresponsibility. In light of the urgent need to tackle climate change and the severity of the consequences, there is only a thin line between climate responsibility and irresponsibility: a neutral area between the two no longer exists.

Keywords: Arctic, climate change, China, responsibility, Russia

Introduction

The March 2023 report of the Intergovernmental Panel on Climate Change (IPCC) makes it clear: climate change continues to accelerate, and swift emissions reduction measures must be adopted if the global average temperature rise is to be limited to 1.5°C in accordance with the Paris Agreement (IPCC 2023). Given China’s status as the world’s largest carbon dioxide emitter, its role in global climate politics is central. Sino-US climate leadership is often emphasised as vital for raising the ambition level of emissions reductions (see, e.g., Eckersley 2020). However, much less scholarly attention has been paid to Sino–Russian cooperation on climate change – hardly surprising, given Russia’s reluctant role in international climate negotiations (Makarov et al. 2017). In the Arctic, where climate change is proceeding much faster than in other parts of the globe, Russia plays a significant role in shaping regional efforts to mitigate and adapt to climate change, due not least to its eagerness to develop the fossil economy in Siberia, with or without China. Moreover, as a result of Russia’s full-scale invasion of Ukraine in February 2022, global geopolitical tensions have intensified. Political and scientific cooperation on climate change has become difficult in the Arctic, making the region’s future increasingly uncertain.

Despite Russia’s full-scale invasion of Ukraine, which we totally condemn, states must work together to prevent the dangerous impacts of climate change. In the Arctic, climate change constitutes a global and regional security threat, which must be tackled urgently if we are to have a viable future on this planet. As the Sino–Russian relationship is clearly a key variable of power dynamics in global climate governance and the changing tides of Russia’s war in Ukraine, this chapter examines how this relationship influences the implementation of global

climate responsibility in the foreseeable future. Taking a future-oriented approach to politics, we examine plausible alternative developments for Sino–Russian cooperation in the Arctic and beyond. In particular, we discuss how the changing shape of the Sino–Russian partnership could potentially impact the implementation of climate responsibility or its opposite: climate irresponsibility.

We begin by discussing the concept of climate responsibility and examining how Russia and China have defined and acted out this responsibility in their respective national and international strategies. Subsequently, we briefly review the Sino-Russian cooperation in the Arctic and distinguish three alternative paths for their relationship in the coming years: 1) steady Sino-Russian cooperation (business as usual), 2) strengthened Sino-Russian cooperation, and 3) deteriorated Sino-Russian cooperation. Given our focus on climate politics, we discuss how such developments could potentially impact the manifestations of climate responsibility and irresponsibility in the Arctic and beyond. Finally, we conclude that given the urgency of radical emissions reduction, there is only a thin line between climate responsibility and irresponsibility, and a neutral area between them no longer exists.

Climate responsibility

As responsibility is a nebulous concept, its many meanings have been extensively discussed in philosophy, law and political science (see, e.g., Hart 1968; French and Wettstein 2006; Miller 2007; Young & Nussbaum 2011). There is also an extensive literature on the responsibilities of states and other agents for climate change mitigation and adaptation, especially concerning which states are accountable for disasters and structural injustices caused by climate change (e.g. Vanderheiden 2008; Cole 2015; Eckersley 2016; Pauw et al. 2019; Goodhart 2022; Sardo 2023). Much of this literature has explored the responsibility of the USA, China and the European Union in international climate politics (e.g. Harris 2017; Kopra 2019; Eckersley 2020; von Lucke et al. 2021). However, none of these studies makes it clear how *climate irresponsibility* should be defined in international politics: is ‘climate irresponsibility’ merely an antonym of ‘responsibility’? How can we distinguish irresponsible behaviour from responsible conduct?

In international society, norms and practices concerning the environmental responsibility of states emerged in the late 1960s and early 1970s. The UN Conference on the Human Environment in Stockholm in 1972 played an essential role in setting the scene for how global responsibilities for climate change have been defined and distributed, among other issues. In 1992, the UN Conference on Environment and Development in Rio de Janeiro confirmed several emerging environmental norms of international society: the ‘no harm’ principle (Principle 2), the precautionary principle (Principle 15), the polluter pays principle (Principle 16), the common but differentiated responsibilities (CBDR) principle (Principle 7), and the principles of sustainable development (Principles 1, 4, 5, 6, and 8). All these norms underpin how climate responsibility is defined in international politics. At the Rio de Janeiro Conference, the United Nations Framework Convention on Climate Change (UNFCCC: hereinafter referred to as ‘the Convention’) was also agreed upon. Entering into force in 1994, the Convention defines *climate responsibility* in accordance with Principles 2 and 7: thus, climate responsibility must be tied to states’ national circumstances and capacities. However, the Convention does not mention Principle 16, despite its relevance to climate change, or set any sanctions on states that fail to shoulder their climate responsibility.

Today, the Convention, its Kyoto Protocol in 1997 and the Paris Agreement in 2015 constitute the critical frameworks for defining and allocating climate responsibility among states. In contrast to the Kyoto Protocol, the Paris Agreement does not set a legally binding emissions reduction target for any state. Rather, it is based on states' obligation to set voluntary, nationally determined contributions. Thus, the Paris Agreement leaves 'it to the individual countries to determine how much they wish to contribute to the collective mitigation effort' (Falkner 2016: 1115). Arguably, the agreement does offer a vague basis for definitions of climate responsibility and irresponsibility. Although the strict North–South divide was weakened in the Paris Agreement by adopting the CBDR principle in the text with the clause 'in light of different national circumstances' (Albuquerque 2021), the Agreement maintained a degree of differentiation between the responsibilities of developing and developed countries. States may take into consideration their economic capability when setting their nationally determined contributions (NDC) on a scale ranging from economy-wide absolute emissions reduction targets to mitigation efforts (Falkner 2016). Despite the Paris Agreement's ambitious objective of limiting the global average temperature rise to well below 2°C, preferably to 1.5°C, the current NDCs are too weak, leading to a 2.4–2.6°C average temperature rise (UNEP 2022).

Clearly, a state's climate responsibility will not be acted out only at a global level, but it also must be implemented via ambitious national policies and actions. For the purposes of this chapter, we define 'climate responsibility' as a state's duty to achieve the goals of the Paris Agreement for current and future generations by implementing swift and ambitious national climate strategies in accordance with the latest science and by advancing global cooperation in science, mitigation, adaptation and finance in accordance with common but differentiated responsibilities and respective capabilities. Before exploring how this responsibility is advanced and/or ignored in Sino–Russian cooperation in the Arctic and beyond, we first examine the two countries' national climate policies.

Russia's post-Paris climate policy

Russia can be included among the world's major emitters, as it is responsible for nearly 5% of global emissions (Crippa et al. 2022). Russia is a party to all major climate agreements of the UNFCCC. In the UN climate negotiations' Global North/South dichotomy, Russia has been defined as a 'developed nation', with greater capacities and responsibilities for tackling climate change than developing nations. However, Russia has remained a rather passive party in the UN climate negotiations, instead utilising the forum to pursue other interests (Tynkkynen 2014; Makarov et al. 2017). For instance, Russia signed the Paris Agreement in 2016 but did not ratify it until 2019. Although this ratification was announced as a major achievement and Russia was portrayed as a leader in emissions reduction, its delayed ratification left it among the final 12 countries to ratify the Paris Agreement (Sauer 2019). Russia has favoured the bottom–up approach of the Paris Agreement, leaving it to the parties to the agreement determine their national contributions. Moreover, although the negative impacts of climate change have already been felt in Russia, the government has not shown much willingness to increase the level of ambition of its climate strategy (Al-Mubarak et al. 2019).

Russia submitted its NDC to the Secretariat of the UNFCCC in 2015 and 2020. In 2015, Russia's pledges included the goal of reducing its emissions 25–30% below the 1990 level by 2030. In response to the encouragement to enhance the NDCs by 2020, Russia updated its contribution but failed to increase its ambition. In 2020, Russia announced that it would aim for at least for 30% reduction below the 1990 level by 2030. Climate Action Tracker (2023)

estimates that meeting this target, which is inconsistent with the Paris Agreement objective of limiting the global average temperature rise, will require no new policies.

In addition to these short-term pledges, in March 2020, Russia released a draft of a long-term strategy with weak improvement options through 2050 but did not officially adopt the policy. Thus, President Putin's announcement in October 2020 that Russia would aim for carbon neutrality by 2060 came as a surprise to many climate-policy watchers. Although this goal is more ambitious than Russia's previous pledges, it was criticised for still being insufficient to achieve the Paris Agreement's long-term objectives (Climate Action Tracker 2023). In a side event at the 26th Conference of the Parties (COP) in Glasgow in 2021, Deputy Prime Minister Alexey Overchuk responded to this criticism by explaining that '2060 net zero might not sound ambitious, but we know we should not attempt to achieve carbon neutrality at any price' (personal communication, 11 November 2021).

Forests have remained a positive aspect of Russia's climate policies, and the land use, land-use change and forestry sector has functioned as a great emission sink (Climate Action Tracker 2023). Yet this sink is declining; it was estimated in 2014 that without enhancing sustainable forest management policies, Russian forests 'might turn from net absorbers of CO₂ to net emitters by 2040 because of forest fires, forests' growing age, the spread of tree pests and diseases, and harmful logging practices' (Tynkkynen 2014: 16). The question of sinks remains highly important in Russia's climate policies, as its pledges rely heavily on increasing carbon sinks. This might be one reason why Russia has attempted to change the accounting methodology of net forestry, which violates the IPCC guidelines for international climate reporting (Climate Action Tracker 2023).

Economic threats are considered the most important drivers for Russia's climate policies. Firstly, the importance of hydrocarbon exports is in contradiction with undergoing energy transitions of other countries. Despite insufficient climate policies, Russia will be affected by the climate actions of other nations, making it critically important for Russia to diversify its economy (Tynkkynen 2019; Makarov et al. 2020). If it fails to reach its unambitious 2030 climate goal, Russia risks being unprepared for the post-fossil fuel era (Kokorin and Korppoo 2017). Secondly, even without the full-scale invasion of Ukraine and the sanctions, Russia's carbon-intensive industries have been threatened by the European Green Deal and the EU's carbon border adjustment mechanism (Makarov 2021). Besides economic motives, one key reason for Russia's insufficient climate policies is arguably that on the national level, 'international climate policy is increasingly seen as a Western-led hegemonic project aiming to bypass or overrule the sovereignty of Russia' (Tynkkynen and Tynkkynen 2018: 1115). Against this backdrop, China and other BRICS (Brazil, Russia, India, China and South Africa) countries provide potential alternatives for Russia's climate cooperation distinct from the West.

China's post-Paris climate policy

After China became the world's largest CO₂ emitter in 2006, its emissions continued to grow rapidly until 2012; since then, however, this growth has slowed (Zheng et al. 2019). In 2021, China's share of global annual CO₂ emissions was 30.9% (Our World in Data 2023). China's high emissions, together with its increasing political and economic power, have accelerated the debate about China's (ir)responsibility in global climate governance (e.g. Kopra 2019). Clearly, without China's enhanced contribution, achieving the global climate targets is not possible. In addition to international pressure, China has domestic incentives to strengthen its climate

action, such as efforts to improve air quality to advance public health, and the vulnerability to climate change impacts (Kopra et al. 2020).

China has ratified all key climate agreements. In the UN climate negotiations, China was defined as a non-Annex party in the Convention, i.e. as a developing nation with differentiated responsibilities from developed nations. At COP15 in Copenhagen in 2009, China rejected any legally binding emissions targets for emerging countries, and was criticised for stagnating the negotiations (Qi and Dauvergne 2022). At COP17 in Durban, South Africa, in 2011, however, China began to take a more constructive position and showed a willingness to agree on commitments according to its national circumstances (Jiang 2022). Since then, China's climate policies have strengthened, and at COP21 in Paris in 2015, China was thanked for its cooperative stance (Gao 2018). Like Russia, China favours the bottom-up approach of the Paris Agreement and particularly the flexibility that developing countries can decide on the nature of their contributions (Jinnah 2017; Falkner 2016).

China submitted its first NDC in 2016 and its second NDC in 2021. A key contribution of the 2016 NDC was the pledge to peak emissions by 2030. As many estimates had shown that China's emissions could peak earlier than 2030, the expectations grew that this goal would be enhanced in the 2021 NDC. However, the ambition of this target was increased only slightly, and the wording was altered to indicate that this would happen 'before 2030' instead of 'around 2030', leaving the exact timing ambiguous. In addition, the Chinese contribution did not include a target for the level at which emissions would peak. Instead, China's NDC (2021) pledged to decrease CO₂ emissions per unit of gross domestic product by over 65% from the 2005 level, increase the share of non-fossil fuels in primary energy consumption to around 25%, increase the forest stock volume by 6 billion cubic meters from the 2005 level, and bring the total installed capacity of wind and solar power to over 1.2 billion kilowatts by 2030.

In October 2021, China submitted its long-term strategy to the UNFCCC Secretariat, with a pledge to achieve carbon neutrality before 2060. This long-term strategy emphasises China's efforts to reach carbon neutrality faster than developed countries: 'The carbon neutral vision proposed by China means that it will be achieved from the peak of carbon dioxide emissions to carbon neutral in a short period of about 30 years, it is much shorter than many other major economies that have already proposed a carbon neutral vision' (China's Long-Term Strategy 2021, 6). In 2021, China also issued a 1+N policy framework, a set of documents including a Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality and an Action Plan for Carbon Dioxide Peaking before 2030.

However, the ambition of China's NDC has been questioned, because the party-state can meet its objectives without issuing new, additional emissions reduction efforts. Indeed, Climate Action Tracker (2023) estimates that China could overachieve these targets, and especially the non-fossil energy shares and solar and wind capacity are likely to exceed the targets announced in the NDC. Achieving the carbon emissions peak before 2030 will depend on whether China manages to advance its energy efficiency and renewable development and reduce its coal use (International Energy Agency 2021). In 2021, China announced that it 'will strictly limit the increase in coal consumption over the 14th Five-Year Plan period and phase it down in the 15th Five-Year Plan period, when petroleum consumption will reach its peak plateau' (NDRC 2021a). This would mean limiting the increase during 2021–2025 and decreasing during 2026–2030. Phasing out coal will be a difficult challenge for China and its energy security, as can be seen, for instance, in its policies to promote the 'clean utilisation of coal' and its efforts to develop carbon dioxide capture, utilisation and storage technologies (NDRC 2021b).

Finally, China has become a global leader in renewable technology, investments and capacity, and its actions have played a crucial role in reducing the global price of, for instance, solar panels (Meidan 2020). Its post-Paris climate actions also include developing an emissions trading scheme, energy storage solutions and electric vehicles. Moreover, China has sought to strengthen its climate leadership of the Global South through South–South climate cooperation, including climate funding, technology transfers, renewable development and adaptation infrastructure (Qi and Dauvergne 2022).

Sino–Russian cooperation in the Arctic: Alternative developments and impact on climate responsibility

Despite their historical disagreements and mistrust (see, e.g., Shen and Xia 2015), China and Russia have increased their Arctic cooperation since the early 2010s – especially after the 2014 annexation of Crimea halted the Western investment flows into Russia. Although China’s Arctic strategy, issued in January 2018, underlined the importance of climate responsibility, Sino–Russian cooperation in the Arctic has largely focused on economic development. In addition to shipping along the Northern Sea Route, Chinese investors have joined Novatek-run Yamal liquefied natural gas projects in Siberia (see Chapters 8 and 10 in this volume). A new gas pipeline and Arctic infrastructure projects are also being negotiated between the two countries (see Chapter 7 in this volume). Driven by shared anti-American sentiments, Russia and China have also organized joint military exercises and launched scientific cooperation projects that may serve military purposes. In light of growing great power rivalry at a global level, Sino–Russian cooperation in the Arctic has raised speculations among regional states and stakeholders.

Russia’s full-scale invasion of Ukraine has dramatically changed the Arctic security situation and halted many regional cooperative projects, making climate change mitigation and adaptation increasingly challenging. China has sought to balance between Russia and the West. A few days before Russia attacked Ukraine, Xi Jinping and Vladimir Putin met in Beijing and agreed on new deals on energy and wheat. The two authoritarian leaders affirmed that their friendship ‘has no limits’ and agreed to intensify ‘practical cooperation for the sustainable development of the Arctic’ (President of Russia 2022). In line with this, China has criticised the Western sanctions against Russia and the seven Arctic states’ plans to continue cooperation without Russian participation (see, e.g., Schreiber 2022). However, China has not offered material support for the Russian military, and Xi has indirectly criticised Putin for threatening to use nuclear weapons. Noteworthy, no agreement on the Power of Siberia 2 pipeline was reached at the Xi–Putin meeting in March 2023 (Dixon 2023), which indicates that there might be a limit to the energy cooperation and China’s support for Russia. While China has benefitted economically and politically from Russia’s isolation from international society, it remains unclear to what extent the Chinese will remain eager to invest in the Russian fossil economy in the foreseeable future. Such investments would be inconsistent with China’s climate strategy and would increase the share of Russian energy in China’s energy mix – which might not be in China’s best interests, given Russia’s growing instability.

Sino–Russian cooperation constitutes one of the key variables shaping the future of the Arctic, especially in terms of advancing climate responsibility. Here we discuss three alternative developments to Sino–Russian cooperation, with climate responsibility at the core. We focus especially on the global dimension of our definition of climate responsibility: meaning how Sino–Russian cooperation influences advancing global cooperation in science, mitigation,

adaptation and finance in accordance with common but differentiated responsibilities and respective capabilities. We pose the following questions: How might three alternative development paths of Sino–Russian cooperation influence the implementation of global climate responsibility? What types of climate-responsible/irresponsible policies and actions could occur in these alternative paths? We will not assess which alternative developments would be most likely, or offer comprehensive scenarios of potential implications for climate responsibility. Instead, by examining these potential developments, we seek to shed light on where the line between climate responsibility and irresponsibility could be drawn.

Steady Sino–Russian cooperation

The first of the imagined alternative developments describes Sino–Russian cooperation continuing according to the business-as-usual trend. This alternative does not suggest that their relationship would be static but rather steady, including ups and downs. The dynamics and cooperation at the UNFCCC will continue as they have since the beginning of Russia’s large-scale invasion of Ukraine in February 2022, because a party’s involvement in an armed conflict does not automatically lead to its termination or suspension of operating an environmental treaty (see, e.g., Jacobsson and Lehto 2020). Therefore, as Russia and China are parties to the Paris Agreement, this development path expects them to attend the annual climate conferences and participate in global efforts aimed at tackling climate change. Outside Russia and China, their stable relations might even accelerate mitigation in the form of green transition caused by other nations’ (particularly European nations’) hurried attempts to disconnect from the Russian fossil energy dependencies. Moreover, cooperation between the Global North and China would probably continue if China were not targeted with Western sanctions. This could mean that, for instance, scientific cooperation in the Arctic between the Global North and China might even increase.

Nevertheless, this alternative development also creates plausible climate-irresponsible possibilities. Even though states’ cooperation at the UNFCCC might continue as business as usual, the prolonged war would direct attention away from the urgency of climate change. The tiny remaining carbon budget, that is, ‘the total amount of anthropogenic carbon dioxide that can still be emitted into the atmosphere while holding the global average temperature increase to the limit set by the Paris Agreement’ (Rogelj et al. 2019: 335), shows that the more global emissions increase in the years to come, the more drastic will be the reductions required to achieve the Paris goal. Thus, the longer the war in Ukraine continues, the more critical it is to reduce global emissions simultaneously. Reaching carbon neutrality has become a more complicated challenge due to the war and Russia’s position as one of the major emitters. The prolonged war may decrease political and media attention to climate change and climate finance. However, it is still too early to evaluate how the global armament since 2022 has influenced the mobilisation of climate finance, for instance.

In the Arctic context, Sino–Russian cooperation might still increase energy trade, which is concerning for achieving China’s climate targets. Since Russia attacked Ukraine, China’s imports of Russian energy have broken several records (see, e.g., Tan 2023). In the first half of 2022, Russia became China’s top crude oil supplier, surpassing Saudi Arabia, for instance (Lin and McMillan 2023). In a business-as-usual trajectory, Chinese spending on Russian oil, gas, coal and other products can be expected to continue to soar in the coming years. Arctic cooperation remains challenging – not only as regards the Sino–Russian relationship, but due to the halting of diplomatic collaboration with Russia in the Arctic Council. If new cooperative projects with Russian partners will not be launched, the efforts of the Arctic Council to facilitate

adaptation, build resilience and take stock of the adaptation efforts fail to cover the whole Arctic region. This influences, for instance, research projects in the Russian Arctic and leaves Russian Indigenous people isolated from other parts of the Sápmi.

Strengthened Sino–Russian cooperation

The second alternative of the imagined developments involves strengthened Sino–Russian cooperation due to, for instance, China providing material support for Russia’s invasion of Ukraine or intensifying energy trade between the two states. As both of these developments would most likely be interpreted in the West as signs of China supporting the invasion, the strengthening Sino–Russian cooperation would further complicate the relationship between Russia and Western states, and Western relations with China.

From a climate responsibility perspective, this alternative trajectory is similar to the business-as-usual path. In the case of strengthened Sino–Russian cooperation, their participation in international climate negotiations would still be expected if no official withdrawal announcements from climate commitments were made (see, e.g., Jacobsson and Lehto 2020). However, intensified global tensions could make international climate cooperation slow and troublesome by impeding dialogue and complicating consensus-finding at the COPs. At the same time, the green transition might also accelerate due to increasing Western attempts to remove Russian fossil energy dependencies. Since green transition is highly dependent on critical Chinese minerals and components, such a development would, in turn, increase the Western states’ strategic dependence on China (see, e.g., Rabe et al. 2017; Tynkkynen 2019). Against this backdrop, setting sanctions on Chinese companies supporting Russia’s war could jeopardise the green transition efforts in the West, as China would probably take counter-sanction measures by using critical minerals as geoeconomic tools. For example, China could cut off the supply of rare earth elements to Europe and the USA. Needless to say, such a state of affairs would make international cooperation on climate very difficult.

Furthermore, intensified Sino–Russian cooperation might increasingly align the emerging powers due to Russia’s and China’s potential efforts to seek allies. Suppose that the emerging powers wanted to underline their climate responsibility, for instance, to the Global South. In that case, they might develop new types of BRICS climate cooperation – for instance, by increasing China’s South–South climate finance, or enhancing the green funding of the New Development Bank established by BRICS. Such developments would increase China’s political leverage in the Global South and gain support for its one-China policy.

In the case of escalated war in Ukraine, the global emissions and promotion of fossil fuel production might increase in the Russian Arctic. For instance, if China were increasingly involved in the war, it could be more eager to invest in fossil energy in Russia to support its wartime economy. Advancing particularly new regional innovations or environmental treaties might become considerably slower or even impossible. For example, agreeing on regulation of black carbon might prove very difficult – with severe consequences for Arctic melting. In addition, advancing the negotiations, for instance, of the Paris objective of making the finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development, might be distracted by the arms race.

From an Arctic perspective, this imagined development would likely mean a growing division in the region. As the strengthened Sino–Russian cooperation would diminish neither Russia’s and China’s Arctic interests nor the Arctic interests of the Western nations, Arctic research

would most likely continue on both sides of the division. This split might facilitate—the development of new types of Arctic climate knowledge exchanges, which could be viewed as an enhancement of climate responsibility. Nevertheless, both sides would face challenges as regards scientific cooperation and coverage of the whole region. Therefore, from the perspective of adaptation and science, strengthening Sino–Russian cooperation might increase irresponsibility: for instance, sharing of best practices among Arctic Indigenous peoples and local communities across the whole region would most likely be difficult if no new research collaboration were launched. A lack of region-wide collaboration might also decrease the credibility and transparency of measuring and reporting of climate action.

Deteriorated Sino–Russian cooperation

The third alternative development in Sino–Russian cooperation involves deteriorating relations between the two Eastern powers. This development could happen if China condemns Russia’s invasion of Ukraine, diminishing Sino–Russian cooperation in various sectors. Such a signal from China could improve its relationship with Western states even if it did not join the Western sanctions against Russia.

From the perspective of climate responsibility, this development path might bring China and Western states closer in climate negotiations and strengthen scientific cooperation between them. Concerning Russia, the geopolitical challenges at the UNFCCC negotiations would remain. However, this alternative development could be particularly significant for Sino–US climate cooperation, advancing the electrification of end-use sectors, circular economy, carbon capture, usage and storage technologies, and methane regulations and reduction (US–China Joint Glasgow Declaration 2021). That said, expectations regarding the influence of the weakening Sino–Russian relationship on the Sino–US relationship should not be exaggerated. Future climate cooperation between China and the USA depends on several other factors, such as the outcome of the 2024 US presidential elections and the long-term relationship of the current climate envoys of both countries, John Kerry and Xie Zhenhua.

China’s condemnation of the invasion could reduce the Sino–Russian energy cooperation, radically diminishing the market for Russia’s fossil fuels and leaving Russia with few trade partners. If China cut its energy imports from Russia, it would have to find replacements to maintain its own energy security. In a climate-responsible scenario, this could lead to further acceleration of China’s interest to invest in renewables and, in this way, also advance the global energy transition. However, such climate-responsible policies might also have negative impacts on human rights and the environment. In particular, China’s aim to build mega-dams in the Himalayan foothills severely affects local communities, ecosystems and regional geopolitics (see, e.g., Saikia 2022). Alternatively, the weakened energy trade between China and Russia could lead to irresponsible developments. For instance, China might replace Russian liquefied natural gas with coal in its energy mix, and continue to invest in fossil fuels in the Global South.

Furthermore, the weakening Sino–Russian relationship could also influence BRICS cooperation and the funding of their New Development Bank. The BRICS joint statement, published in June 2022, addressed climate change multiple times. Against this backdrop, it can be assumed that they are interested in emphasising climate change as a shared interest despite Russia’s large-scale invasion of Ukraine. However, the joint statement did not include any concrete climate measures, and the statements overlapped significantly with the joint statements of the BASIC (Brazil, South Africa, India and China) group. If the BRICS

cooperation weakened due to the deteriorating Sino–Russian relationship, the BASIC group could continue reinforcing their cooperation.

In the Arctic region, the weakening Sino–Russian relationship would not remove the seven Arctic states’ difficulties in cooperating with Russia. If China condemns Russia’s large-scale invasion of Ukraine, Russia will be isolated among the eight Arctic states and the majority of the non-Arctic states. This exclusion would also continue isolating local and Indigenous communities in the Russian Arctic and complicate regional scientific cooperation.

Final remarks

This chapter has explored manifestations of climate responsibility in the context of Sino–Russian cooperation in the Arctic and beyond. We began by examining Russia’s and China’s contributions to global efforts to tackle climate change. While both states have submitted their NDCs to the UNFCCC, the ambition level of these climate strategies remains clearly insufficient to meet the goals of the Paris Agreement (Climate Action Tracker 2023). To shed light on how Russia’s full-scale invasion of Ukraine potentially shapes global climate efforts, we explored three alternative developments in Sino–Russian cooperation: 1) steady (business as usual), 2) strengthened, and 3) deteriorated relationship and discussed what these alternative developments might mean for fostering climate responsibility in the Arctic and beyond. While we leave it to our readers to consider which development seems more likely, we wish to emphasise that the most plausible development in the future might include features from all three alternatives.

Our analysis shows that all three alternative future paths entail climate-responsible and irresponsible consequences for the Arctic. In the steady development of Sino–Russian collaboration, it is critical that global emissions are reduced despite the war and regional climate collaboration continues, at least in some parts of the Arctic region. In the strengthened development of the Sino–Russian cooperation, the global climate efforts are likely to become even more complicated in the Arctic; moreover, the growing energy trade in Siberia intensifies the risks for inhabitants and ecosystems in the region – due to increased shipping of liquefied natural gas through the Arctic Ocean, for instance. In the alternative of deteriorating Sino–Russian cooperation, the geopolitical challenges between Russia and the seven other Arctic states would remain the same and Arctic collaboration would remain challenging due to the war. Yet, China’s climate collaboration with Western states might increase in this alternative development.

Furthermore, our analysis demonstrates that even if we apply a distinct definition of climate responsibility, it remains challenging to empirically identify how such responsibility is shouldered in real-life politics. In particular, it is difficult to indicate the exact turning point when responsibility turns into irresponsibility, or vice versa. When anticipating the plausible manifestations of climate responsibility in different trajectories, our analysis points towards three dimensions influencing the responsibility-irresponsibility continuum: *time*, *cooperation* and *power relations*. Firstly, the ambition level of climate responsibility does not necessarily progress linearly, but depends on the spatiotemporal context. We argue that responsibility can turn into irresponsibility if the urgency of climate change is ignored or if the ambition of the commitments remains the same without tightening ambition level over time, according to the latest science. In other words, the ambition level of states’ climate responsibility has to be constantly increased, and what was viewed as climate-responsible conduct in the 1990s, for example, may no longer meet the standards of the 2020s.

Secondly, the three imagined trajectories demonstrate the importance of global cooperation, in general, and the scope and depth of that cooperation, in particular. In all three trajectories, the continuation of cooperation is possible at the UNFCCC negotiations but varies in scope and depth depending on how the Sino–Russian relationship evolves. In any case, global cooperation in climate negotiations and regional cooperation in the Arctic would certainly become radically more challenging in the business-as-usual and strengthened Sino–Russian cooperation trajectories. For instance, while cooperation would still be likely at the COPs in following the already agreed upon commitments in the latter trajectory, the heightened geopolitical tensions would complicate consensus-finding when negotiating future actions and policies. Therefore, we conclude that more than continued cooperation is required for climate responsibility. According to our definition of climate responsibility, states need to participate in global cooperation in a way that the cooperation truly advances science, mitigation, adaptation and finance.

Thirdly, power politics and ideologies impact how responsibility is defined in international society. Due to the United States' status as the leading superpower in the world, it has more or less dictated what kinds of norms and values underpin international notions of responsibility. As China rises to great power status, it is increasingly capable and willing to challenge US notions of responsibility and advance its own definitions of responsible international conduct – including those related to climate change (Kopra 2019). Should China choose to promote some kind of non-Western alternatives to US-led values and norms in international climate politics with or without Russia, the Western states might well deem such efforts irresponsible, even if they were consistent with the definition of climate responsibility at large. For instance, in the trajectory of strengthening relations, China and Russia could make new bilateral climate commitments or intensify the climate cooperation among the BRICS countries – a development that the West would not necessarily regard as responsible. Similarly, China's interest in geoengineering and construction of mega-dams can be seen as irresponsible in societal terms, even though they could be viewed as responsible from a purely climate responsibility perspective. Due to these dimensions, we argue that states' climate responsibility rarely follows a linear path, always evolving in a more responsible direction. Instead, climate responsibility should be understood as a moving target in a spatio-temporal continuum, where the definitions of responsibilities and irresponsibilities are in flux due to climate science, time and geopolitical dynamics.

Unsurprisingly, Russia's full-scale invasion of Ukraine constitutes a critical juncture that will shape state-level and collective climate actions in the coming years. The war does not prevent Russia (or China) from participating in international climate negotiations: it seems that they can fulfil their duties as parties to the Paris Agreement even in time of war. This gives rise to an ethical dilemma: If a state shoulders its climate responsibility during a military conflict, should its climate actions be viewed as even more responsible than at normal times? Undoubtedly, China plays a critical role in turning the tide of the war. The continuation of Russia's war on Ukraine and intensifying rearmament in major emitter states may lessen public attention to climate change. If China condemns the war, as it would do in a deteriorating Sino–Russian cooperation trajectory, Russia's full-scale invasion of Ukraine would become very challenging, and it would likely end sooner than in the other two scenarios. As for climate responsibility, such a development could re-open the door for Sino–US climate cooperation and possibly accelerate global climate ambitions.

Since the UNFCCC and its Paris Agreement do not offer a clear basis for definitions of climate responsibility and irresponsibility at the international and national levels, we offer our own definition of climate responsibility underlining the importance of taking the latest findings of climate science into consideration when assessing states' duties and performance regarding climate responsibility. In view of the insufficient climate action in the past and the urgency of climate change, it is increasingly important to define and recognise what extent of ambition can be seen as responsible. This raises the question of whether there is some kind of boundary mark when a state no longer fulfils its responsibility criteria and can simply be regarded as irresponsible. An analysis of UN climate treaties does not offer answers to these questions. In light of the urgent need to reduce emissions globally, our definition of climate responsibility recognises that, in addition to participation in international climate negotiations, advancing and implementing ambitious and fast-paced national climate strategies in accordance with the latest scientific findings is at the heart of states' climate responsibility. Therefore, if a state fails to do so, it can be deemed climate irresponsible. Hence, there is only a thin line between climate responsibility and irresponsibility – and given the tiny remaining carbon budget, the neutral area between them has more or less disappeared.

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