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Abstract

This chapter develops a theoretical and conceptual framework for the study of great powers and great power responsibility in the international politics of climate change. It introduces the two main approaches—material and social—with which international relations scholars have defined great powers and reviews some of the ambiguities in the great power concept. It explores the ongoing transformations in the international system that have changed our understanding of the role that great powers play and how great power capabilities can be mapped onto special rights and responsibilities in global international society. In a second step, the chapter then explores the role that great powers play in global environmental politics. It sets out a comprehensive understanding of environmental power that covers both its negative and positive uses and discusses what countries count as environmental great powers. The final section explores the question of great power responsibility and whether and how special responsibilities apply to great powers in the environmental field.

Keywords

climate change, English School, environmental power, great power, great power management, great power responsibility, international leadership, global environmental politics, securitization, special responsibilities.

Introduction

This chapter sets out the conceptual framework for this volume. The first section opens with a discussion of the traditional concept of great power in International Relations (IR). It explores how ongoing international transformations require a new understanding of international order, what it means to be a great power, and how great power capabilities can be mapped onto special rights and responsibilities in global international society. The second section then explores the role that great powers play in global environmental politics. It opens with a discussion of the concept of environmental power, distinguishing its two principal forms and uses: negative power to destroy the environment and block international environmental action and positive power to engender positive change and promote effective environmental cooperation. Based on this conceptualization, this chapter then explores which countries can count as environmental great powers and whether their power operates within or across environmental sectors and at global or regional levels. The third and last section examines the question of great power responsibility and whether and how special responsibilities apply to great powers in the environmental field.

Great Powers in Global International Society

Great Powers: Two Approaches

Ever since humankind began organizing itself into independent political communities, it has almost always been the case that the distribution of power and capabilities amongst them has been notably uneven. Powers with larger capabilities than others generally have more expansive, far-reaching interests in trade, ideology, and security. They may also be accorded higher status by other actors. In the absence of government over the international system/society as a whole, such great powers are the obvious place to look for any management of international relations that might be possible. That is why the concept of great powers plays such a large role in IR theory. The idea that great powers should take particular responsibility for managing international society is, however, relatively recent. Holsti (1991: 71–82, 114–137) shows how the institution of great power management (GPM) emerged along with the balance of power during the eighteenth and nineteenth centuries as replacements for a declining dynastic principle. He argues that this practice became much more evident and formalized from the Treaty of Vienna (1815) and the Congress of Europe (see also Bull, 1977: 200–229; Wight, 1977: 42, 136–141; Watson, 1992: 138–262; Simpson, 2004).

Following Barnett and Duval (2005), we can define power as working in two principal ways: as an attribute of actors in social interactions (e.g. a material resource such as military force), and as a constitutive social process that shapes actors' social identities and capabilities (e.g. recognition of actors as having legitimate authority). These two paths are not mutually exclusive; in fact, they usually intersect.

The material approach is most closely associated with realism and looks at the assets and capabilities of the leading powers, trying to define a small leading group on that basis. As Barnett and Duval (2005: 40) put it, power is 'the ability of states to use material resources to get others to do what they otherwise would not'. The difficulty with approaching the question in this way is that there is no consensus on the prior question about how to define power in international relations. As Waltz (1979: 131) acknowledges, the power of states depends on a whole range of variables including military strength, economic development, societal cohesion, the size and education of the population, political competence, and geographical and resource endowments. But how one should weigh off these various components remains far from clear. Do Russian nuclear weapons trump Japanese wealth and technology? And if power in international relations is to be understood basically in terms of a potentially measurable set of capabilities, the problem is that capabilities do not always correlate with outcomes (e.g. the defeat of the US in Vietnam, or of the USSR in Afghanistan). Or is material power to be understood in terms of its consequences in the changed behaviour of other actors who respond to it? If so, the problem is that power becomes a circular concept, defining causes in terms of effects.

The social approach is most closely associated with the English School (ES), but it also works for constructivism. The English School views power as a multidimensional concept, encompassing material as well as ideational factors. It is nicely captured in two widely cited definitions. The first is Bull and Watson's (1984: 1) definition of international society, which establishes the key distinction between the ES's societal approach, and the system approach of materialists:

> a group of states (or, more generally, a group of independent political communities) which not merely form a system, in the sense that the behaviour of each is a necessary factor in the calculations of the others, but also have established by dialogue and consent common rules and institutions for the conduct of their relations, and recognise their common interest in maintaining these arrangements.

The second definition is Bull's (1977: 200–202) societal understanding of a great power. He stipulates that, in addition to being in the front rank of military capability (the key material condition), great powers must be:

> recognised by others to have, and conceived by their own leaders and peoples to have, certain special rights and duties. Great powers, for example, assert the right, and are accorded the right, to play a part in determining issues that affect the peace and security of the international system as a whole. They accept the duty, and are thought by others to have the duty, of modifying their policies in the light of the managerial responsibilities they bear.

Note how this social definition makes space for material factors, even though it could exclude a state that had front rank military capability but was not accorded recognition as a 'great responsible' by others. This contrasts with more material definitions that often accept victory in a great power war as conferring entry to the rank of great power. History abounds with militarily formidable 'barbarian' powers, including the Xiongnu, the Huns, the Vandals, and the Crusaders, who had little or no thought about 'modifying their policies in the light of the managerial responsibilities they bear'. Trump's America came close to rejecting the idea that it had any obligation to accept responsibilities for global order.

Both of these approaches are clear enough in principle, and being able to specify what counts as a great power is central to important strands of IR theory. Neorealism and neoliberalism, especially as they depend on polarity theory, absolutely must be able to make clear designations of who is a great power and who is not. The same is true for the ES concept of GPM, which has been an important institution of international society for over two centuries (Buzan, 2014: 103–104, 145–147). Yet as Buzan (2004: chapters 3–5) argues, IR has so far failed to produce a settled, scientific definition of 'great power' on the basis of which the great powers at any given time can be identified and listed in an uncontroversial way. What gets counted has varied, and contestation over the list at any given time is common. Even leading theorists such as Waltz (1979: 131) and Wight (1979: 41) in the end resort to common sense. We are just supposed to know a great power when we see one. But we often don't.

Is the EU a great power, or does its non-state form exclude it from consideration, as most realists would think? Was Japan a great power when its GDP overtook that of the Soviet Union, which was generally categorized as a superpower? Was the US a great power in the 1880s, by which time it had the world's biggest economy but had converted little of its wealth into military power and played an isolationist role in the balance of power? Common sense can make the category of great power uncomfortably broad. Before the First World War there were supposedly nine great powers, but the gap between Britain, the US, and Germany, on one end of the spectrum, and Italy, Japan and the Ottoman Empire, on the other, was huge, both militarily and economically. Further confusing the issue are the many cases of 'honorary' great powers, where status is given despite capabilities having become inadequate: Sweden (after 1648), the Ottoman Empire (during the nineteenth century), France and China (in 1945), Russia (during the 1990s).

Not surprisingly, this ambiguity has generated considerable taxonomical laxity, both in public discussion and in IR theory, when it comes to categorizing states by power. After the Second World War there was a general terminological shift from 'great power' to 'superpower', accompanied by a widespread understanding that the system structure had shifted from its longstanding multipolar form (usually 5–10 great powers) to a bipolar one (two superpowers). This shift was made without much thought being given to whether superpower and great power were synonyms or represented different categories. In practice, Waltz, and the many purveyors of polarity theory who followed him, operated on the assumption that they were synonyms, with 'superpower' simply expressing what great

powers looked like when polarity was a low number. Consequently, their theories operated on the basis of a single distinction between great/super-powers on the one hand, and all of the lesser states on the other. This created some theoretical absurdities when it came to dealing with China in the 1970s, whose rise challenged bipolarity, without China being seen as a superpower. One fudge was to talk of a 'great power triangle' (or sometimes quadrangle) in Asia, thereby avoiding the question of China's global standing (Segal, 1982; Thomas, 1983). Another fudge was to talk of China as a 'half' pole (Hinton, 1975), while avoiding the crucial definitional question of what this might mean for the theory. When the Soviet Union imploded, leaving the US as seemingly the sole superpower, there some talked about hyperpowers and suchlike, indicating that great and super-power were not synonyms. But with the rise of China quickly forcing a reconsideration of unipolarity, many assumed the return of a two-superpower system. Within this, a few writers inserted a category of 'middle powers', mainly aimed at the likes of Canada, Norway, Sweden, and Australia, who punched above their weight in some areas of international diplomacy (Holbraad, 1984). Hurrell (2006: 18–19) toyed with the idea of 'intermediate powers' to talk about the BRICs.

Reacting against this taxonomical confusion, Buzan and Wæver (2003; see also Buzan, 2004) argued that superpowers and great powers were in fact distinct classifications, and that the most useful next step down in this typology was regional powers. Middle powers were not irrelevant, but they were a small, exceptional, and generally Eurocentric category, whereas regional powers were numerous and found everywhere. The essence of this classification was in terms of the geographical scope of their influence. For superpowers, the world was their region. Great powers operated mainly within their own regions and the ones adjacent to them, though they had to be taken into account in global calculations. Regional powers operated mainly within their own regions. Britain during the nineteenth century and the US after 1945 were clear examples of superpowers. The Soviet Union after 1945 just about made it into the superpower camp. During the Cold War, Britain, France, China, Japan, and increasingly the EU operated as great powers, making the system not bipolar but one with a mix of two superpowers and several great powers.1 Post-Cold War, the system was not unipolar, but one superpower and four great powers, plus many regional powers. Contemporary regional powers include countries such as Pakistan, Iran, South Africa, Brazil, Nigeria, Indonesia, Israel, Egypt, and Saudi Arabia.2 There is a great deal of difference between a system/society that has one superpower and then only regional powers and below, and one with one superpower, several great powers, and quite a few regional powers.

The terms superpower, great power, regional power, and middle power are all in widespread use both academically and in public discourse. Polarity theory in IR depends absolutely on there being a clear distinction between a small class of great or superpowers and the rest, yet remains unembarrassed by the fact that no consensus has yet been reached

1 Realists don't generally acknowledge that the EU can be a member of this club because, even though it has actor qualities in some internationally significant respects, it is not a state.

2 For the full definitions, see Buzan and Wæver (2003: 30–39).

on either how to define these classifications in any precise and non-controversial way, or on any taxonomy for ranking powers. This longstanding and ongoing problem of how to define great powers at any given time is now under pressure from two further problems, one very broad and general, the other quite specific. The general one is the simultaneous decline in the economic, political, and cultural dominance of the West, and the rising interest in so-called emerging powers. We capture this development with the idea that the system structure is moving towards deep pluralism. The more specific one is the diffusion of some capabilities away from the powers at the top end of the spectrum to both state and non-state actors lower down the spectrum, as can be seen in issue areas such as global environment, development, and health (Bukovansky et al., 2012).

Deep Pluralism

What do these general thoughts about great powers and GPM tell us about the condition of global international society now (in 2021) and how that will shape the global politics of climate change? Since the global financial crisis that broke in 2007–2008, the relative wealth, power, and cultural and ideological authority of the West, and of the US in particular, have been in decline. The leadership of the US and the UK has been further undermined by the votes for Trump and Brexit in 2016. At the same time, the relative wealth, power, and cultural and ideological authority of what were previously classed as developing countries, and are now talked of as emerging powers, particularly China, but also India and others, have been on the rise. This dual development looks to be pushing the international system/society into a new, and in some ways unprecedented, post-Western structure. It seems quite plausible that this structure will contain no superpowers, several great powers, and many regional powers. As wealth, power, and cultural and ideological authority increasingly diffuse to a wider circle of states and societies, it will become impossible for any country to either hold onto (the US) or acquire (China) the necessary preponderance of wealth and power to be a superpower. Trump burned the global social capital of the US at a prodigious rate, caring nothing for the effects of his policies on the alliances, intergovernmental organizations (IGOs), and trading arrangements that underpinned US leadership. Some of this damage will be unrecoverable given the uncertainty that now hangs over the polarized character of US domestic politics. In China, Xi Jinping has been pushing the country in a more authoritarian and aggressive direction that scares both its neighbours and many of the other great and regional powers. This argument is of course vulnerable to the ambiguity of these categories established above, but it seems likely that, while the US and China will be primus inter pares, they will not be in an entirely different class from India, the EU, and possibly Russia, Brazil, and Japan. They will be great powers in the sense that their influence extends beyond their own regions, and that they have to be taken into account at the global level, but the world will not be their region, and therefore neither will be a superpower.

What is emerging will be novel in a number of respects. Increasingly, power, wealth, and cultural and ideological authority will be wielded by non-Western as well as Western

actors (Buzan and Lawson, 2015: chapter 9; Acharya and Buzan, 2019: chapter 9). As the last superpower wanes and emerging powers rise, what is unfolding does not look like classical multipolarity. Certainly, there will be several centres of wealth, power, and cultural and ideological authority, and thus in a sense global international society (GIS) will be multipolar. But there will be many non-state actors in play in this GIS, some of which will wield significant amounts of wealth, power, and authority. States will probably remain the dominant form of actor, but will be much more entangled in webs of global governance than is implied in the term multipolarity. Even just thinking about states, the emerging GIS will still not be multipolar as classically understood because, lacking any superpowers or any aspiring to be superpowers, it will not feature a realist-type struggle for domination of the whole system. Although they are all embedded in a highly interdependent global economy, and a single planetary environment, none wants to, or can, lead or dominate GIS. The US is losing both the will and the legitimacy to do so, and neither Europe nor Japan can fill its shoes. The rising great powers China and India are still developing countries and have neither the capacity, the will, nor the legitimacy to play the hegemon. They still prioritize their own development over their global responsibilities. Indeed, it is an interesting question as to whether the very idea of hegemonic leadership, which has been closely associated with Western hegemony for more than two centuries, will be delegitimized in this emerging system.

Various labels have already been put forward to capture the novelty and complexity of this emergent construction: plurilateralism (Cerny, 1993), heteropolarity (der Derian, 2003), no one's world (Kupchan, 2012), multinodal (Womack, 2014), multiplex (Acharya, 2014), decentred globalism (Buzan, 2011), polymorphic globalism (Katzenstein, 2012), and multi-order world (Flockhart, 2016). Acharya and Buzan (2019: chapter 9) offer the concept of deep pluralism to capture what is now unfolding. They define deep pluralism to mean a diffuse distribution of power, wealth, and cultural and political authority, set within a strongly integrated and interdependent system in which there is a significant move towards a GIS in which both states and non-state actors play substantial roles. Non-state actors range across the spectrum from civil (e.g. Red Cross/Crescent, Médecins Sans Frontières) to uncivil (e.g. Islamic State), with many in between (e.g. Facebook). While power asymmetries remain, it describes a world not only without a global hegemon but in which the very idea of such a role is no longer legitimate. Such a world might feature different economic and political ideologies and systems, including the remnants of the liberal order. This will be a novel system, and not only because we have got used to living in a system with a high concentration of power dominated by superpowers. There has never been a system like the one now emerging in which the density and interdependence of the system is high and rising, but the distribution of wealth and power is relatively diffuse. Power was diffused during pre-modern times, but the density and interdependence of the system at that time was low.

Deep pluralism describes where the current momentum of GIS is taking us whether we like it or not. But we also need terms to indicate whether that condition is understood and acted upon in a positive or negative light, and where the scope for agency and policy lie. Contested pluralism means that there is substantial resistance to the material and ideational

reality of deep pluralism. This might take various forms: states resisting the roles and standing of non-state actors; former superpowers (most obviously the US) refusing to give up their special rights and privileges; great powers refusing to recognize each other's standing and playing against each other as rivals or enemies. Consensual pluralism means that the main players in GIS not only tolerate the material, cultural, ideological, and actor-type differences of deep pluralism, but also respect and even value them as the foundation for coexistence. Another way of seeing this is that consensual pluralism is about the preservation and/or cultivation of the political and cultural diversity and distinctness that are the legacy of human history, to be valued for its own sake in the same way as biodiversity (Jackson, 2000: 23). It is highly probable that deep pluralism in either form will see a sharp weakening of the homogenizing liberal teleology that has been both an implicit and explicit assumption in much Western thinking about the evolution of the global order. This raises the question of whether GIS will have sufficient cultural and ideological unity to foster deep cooperation on global challenges, such as environmental protection (Falkner and Buzan, 2019).

Within this unfolding new structure of deep pluralism the rise of China, India, and other emerging non-Western powers is creating a growing interest in new great powers and their roles and responsibilities in international society (Gaskarth, 2015). A lot of the discussion here focuses on the so-called BRICS group of states (Brazil, Russia, India, China, South Africa). While BRICS has some actor quality in terms of setting up its own institutions (the BRICS bank), it is otherwise an odd grouping. China is on the brink of being an emerged rather than an emergent power. India is on the borderline between being a big regional power and a small great power, with Brazil further behind on the same track. Russia is not emergent at all, but rather a fallen and declining superpower. South Africa is clearly only a regional power. China and India (and perhaps later Brazil and Indonesia) raise the question of whether countries still classified as 'developing' can also be classified as great powers? Since the nineteenth century, being at or near the leading edge of industrialization and modernity have been necessary conditions for great power status (Buzan and Lawson, 2015: 240–270). If this condition is breaking down, what are the implications for how we understand both the qualifications for great power status and the rights and responsibilities associated with great power status? As noted, big developing countries such as China and India quite rightly give their own development first priority, and understandably argue that they should not be obliged to burden themselves with global managerial responsibilities. There has been a particular focus on rising China, which is pressured from without to become a more responsible great power and from within to balance the domestic political needs of the Chinese Communist Party with the necessity to engage in a Western-defined global economic order (Jones, 2014). More broadly, there has been interest in how rising powers gain the 'legitimate' great power status in 'recognition games' (Suzuki, 2008) and some discussions on the legitimacy of power (Reus-Smit, 2014).

The exercise of GPM responsibility under deep pluralism will be more diffuse and more complicated than under the relatively concentrated domination of the US over the last few decades. Ideological differentiations mattered during both the interwar and Cold War

years, and they may well matter again under deep pluralism, where there will not only be a divide between authoritarians and democracies, but also one between the different civilizational values represented by the US, Europe, Russia, China, India, and the Islamic World. We might anticipate that under deep pluralism the extent and character of great power cooperation/conflict generally will depend on whether deep pluralism is more contested or more consensual. Within that, a great deal will depend on how the great powers respond to the various shared-fate threats, such as climate change and pandemics, that affect them all. Such threats stand outside ideological and cultural framings to a much greater extent than do questions of global economic management or human rights. This ideological neutrality opens a path to the possibility of GPM on a shared-threat functional issue such as climate change, even if deep pluralism, as seems increasingly likely, unfolds in contested form.

Diffusion of Capabilities

An entirely different complication for great power responsibility and management is raised by the diffusion of some capabilities away from great powers and towards both lesser states and non-state actors. Increasingly, as Cui and Buzan (2016: 207–210) argue, great power responsibility and global governance now overlap, and might even be thought of as merging. In specific issue areas, the ambiguity about what constitutes a 'great power' becomes a major problem. Saudi Arabia might be a 'great power' in oil and religion, but in general terms only a regional power. Once we get down to energy, disease control, cybersecurity, climate change, and suchlike, the criteria for defining not only great powers but also great power responsibilities may need to be tailored to the specifics of the issue. As we discuss below, the same applies to the field of global environmental protection. And as the convergence of great power responsibility and global governance suggests, in some issue-areas special responsibilities are diffusing not only to actors other than great powers, but to actors other than states.

The diffusion of capability and responsibility away from great powers is a very complicated issue. Since it has been set out in detail by Bukovansky et al. (2012), it does not require detailed elaboration here. Great powers have often been 'great irresponsibles', making themselves more part of the problem of world order than part of the solution. This paralysis at the top has opened up space for more bottom-up forms of global governance involving lesser powers, IGOs, and non-state actors. Great power capabilities might well have been decisive in relation to the classical high politics agenda, but as an ever-wider array of functional, non-military issues has come onto the security agenda, the capabilities of other kinds of actors have become more relevant. In these functionally specific issue-areas, even the capabilities of quite small actors might count as 'great'. The Ebola crisis of 2014 is an interesting case involving not only great powers but also non-state actors such as Médecins Sans Frontières (MSF) and drug companies, whose specialized capabilities made them an essential part of the response to the medical emergency, and IGOs that were important to

legitimation and coordination (Cui and Buzan, 2016; 2019). This opens the pathway to a quite radical reinterpretation of special responsibilities, which are becoming more widely diffused to a range of actors able to deploy special capabilities in relation to specific issue-areas of global order. This development does not remove great powers from the equation, but it does open up a much more diverse and complicated picture of the relationship between capabilities on the one hand, and special rights and responsibilities on the other.

How, then, do these general considerations about great powers and great power responsibilities play into the environmental sector?

Environmental Power and Great Powers

As argued in the first part of this chapter, the concept of 'great powers' has been central to IR theorizing about international order, but important ambiguities persist with regard to defining what constitutes power in international relations, and the criteria for identifying great powers in specific issue-areas. Both these problems are clearly evident in the field of global environmental politics (GEP). As we discuss in this section, there are important similarities between GEP and other international issue-areas that justify talk of environmental great powers. The effects of power inequality on outcomes in international environmental negotiations can be found across a wide range of environmental issues, from climate change to the regulation of chemicals and marine protection. At the same time, GEP is also characterized by a high degree of diffusion of relevant capabilities, and lesser powers and non-state actors generally play a more significant role. The general premises of the great power concept, and great power theory, do not translate to GEP in a straightforward manner. It is important, therefore, to start with a discussion of the issue-specific characteristics of power in GEP before we can approach the question of what counts as a great power in the environmental field.

Environmental Power

The dual material and social understanding of power discussed above is applicable to all international policy fields, including GEP. In a material sense, a state's environmental power is based on its control over important ecosystems or natural resources (e.g. forests, rivers, fossil fuels) or its ability to cause significant transboundary environmental harm. Furthermore, a state with significant economic and political might (military strength is generally a less fungible power resource in GEP) can use such capabilities to influence international bargaining over environmental rules, for example by providing environmental aid or threatening trade sanctions. Environmental power also has an important social dimension in that states that command legitimate authority in GEP are able to influence the identities and interests of other states, thereby shaping outcomes in international environmental policymaking. Environmental power exists where states are able to provide intellectual or entrepreneurial leadership that sets international agendas or shapes

bargaining outcomes. We can also find it where states create social structures that legitimate certain forms of environmentally relevant behaviour (e.g. regulated vs unregulated forms of pollution), define environmental roles and responsibilities (e.g. differentiated responsibilities under the UNFCCC), or create or privilege certain types of meaning that shape relevant social fields of action (e.g. 'sustainable development' and 'green growth' discourses).

It is important to recognize that that the exercise of environmental power can serve different purposes. Some literature restricts the term 'environmental power' to only those actors that use their power to advance global environmental objectives (e.g. Sotero and Armijo, 2007; Dauvergne and Faria, 2012; Viola and Franchini, 2014). This is too restrictive a conception, however, as it ignores ongoing contestation over what counts as environmentally friendly behaviour (e.g. some environmentalists support pro-nuclear energy policies as they reduce greenhouse gas emissions, while others oppose them as they create long-term risks of nuclear accidents and radioactive pollution). It also fails to capture situations in which states can be said to possess environmental power but use it to weaken, rather than strengthen, global environmental objectives. 'Environmental power', just like economic or military power, should be understood as a neutral concept. It reflects a state's ability to influence processes and outcomes in GEP, and to shape other states' behaviour, interests, or identities, irrespective of its underlying motivation or objective. This means that, broadly speaking, we can distinguish two principal uses of environmental power: *negative* and *positive*. Both uses of environmental power are essential to understanding a state's overall power and influence in GEP, and by implication its (potential) great power status.

This distinction between negative and positive uses of power is not a unique feature of GEP alone. Any form of power gives rise to similarly diverging, and indeed conflicting, uses. From the perspective of maintaining international peace and stability, military power is a predominantly negative form of power when used in an offensive capacity to pursue a country's expansionist goals, but can also serve a positive purpose when used for defensive purposes, to contain or defeat military aggression, to maintain a balance of power, or to support humanitarian interventions. Economic power similarly gives rise to negative usage where it allows powerful countries to pursue their own interest by exerting leverage over weaker countries, but such economic leverage is also at the heart of international sanctioning mechanisms that seek to uphold international trade rules.

In the environmental field, *negative* power reflects a country's control over certain environmental 'goods' and/or its ability to produce environmental 'bads' in the form of environmental degradation. The former is the case where countries control large shares of natural resources or ecosystems (e.g. forests, lakes, rivers, biodiverse habitats) that are of global, regional, or just transboundary significance. In such cases, control over significant environmental goods gives countries the ability to degrade or destroy internationally significant ecosystems or resources, or to refuse to cooperate in their international management. The latter is the case where countries cause a significant share of global environmental degradation (e.g. emissions of pollutants, consumption of environmental goods) and are therefore able to undermine international environmental management

efforts by refusing to reduce transboundary environmental harm. In both cases, significant negative power gives rise to de facto veto power in international environmental affairs as countries in control of environmental goods/bads can slow down, weaken, or even block multilateral environmental efforts (Porter and Brown, 1996: 14; Falkner, 2005: 591).

Examples of such situations where one or several countries possess veto power include ozone layer depletion, where five industrialized countries (USA, Germany, France, Britain, Japan) dominated the global market for ozone-depleting substances at the time of the ozone regime negotiations in the mid-1980s; international climate politics, where the top 10 emitters are responsible for two-thirds of global greenhouse gas emissions; international whaling regulation, where a small number of states (Japan, Norway, Iceland) are responsible for most of the global whaling catch; or deforestation, where three countries (Brazil, Congo, Indonesia) control large parts of the world's remaining tropical rainforests. As these illustrations show, negative power in GEP is issue-specific, and countries that possess it in one environmental issue area may not possess it in others. Some developed or rapidly developing economies with large populations (e.g. United States, China) tend to have a large ecological footprint across all or most environmental issue-areas, largely because they consume a large share of the Earth's natural resources and produce a large share of global pollution. Because they possess negative power across a wide range of issues, they can be considered critical to the successful management of the global environment. Others (e.g. Norway, Indonesia), however, will have globally significant negative power only in those few issue areas where they control significant shares of global environmental goods/bads.

The *positive* use of power in GEP rests on a country's ability to engender positive change in international environmental politics and promote effective solutions for global, regional, or transboundary environmental problems. This constructive use of power is closely related to the concept of international environmental leadership (Skodvin and Andresen, 2006; Eckersley, 2020), which is based on the notion that leaders are needed to establish environmental issues on the international agenda, propose cooperative solutions and diffuse innovative policy ideas, provide technological and economic aid in support of environmental policies, and push for an international consensus behind specific regulatory approaches. Such leadership can take many forms, from facilitating compromise and coalition-building (entrepreneurial leadership) to the creation and diffusion of innovative policy solutions (intellectual leadership) and the use of economic incentives and sanctions to change actors' behaviour (structural leadership) (Young, 1991; Tews, 2004; Skodvin and Andresen, 2006). The environmental leadership literature assumes that such leadership is provided not only by powerful states but also by other actors, such as less powerful countries or even individuals in international organizations acting as norm entrepreneurs (Young, 1991). In this sense, GEP lends itself to the diffusion of capabilities and responsibilities away from great powers, and is a signature sector for the merger of GPM and global governance (Cui and Buzan, 2016).

The literature on the history of GEP has identified several instances in which powerful states have used such positive power to promote global environmental solutions. The US played a key role in establishing environmental stewardship as a fundamental norm in

international society at the 1972 Stockholm conference and beyond (Falkner and Buzan, 2019; Falkner, 2021: chapter 5), and US pressure was instrumental in getting to international environmental agreements on issues ranging from the protection of endangered species to ozone layer depletion (DeSombre, 2000). In the 1990s, Japan's dominant role as a provider of international environmental aid, especially in Southeast Asia, led to the country being described as an 'environmental superpower' (Dauvergne, 1998: 2). International environmental leadership is generally said to have passed from the US to the EU since the 1990s (Kelemen and Vogel, 2010), and the EU has more recently played a leading role in pushing for higher international environmental standards and new environmental agreements (Zito, 2005; Vogler and Stephan, 2007; Kelemen, 2010), even though the US continues to a play a leadership role in certain specific contexts, such as air pollution (Gouldson et al., 2015). More recently, the Obama administration negotiated a bilateral climate agreement with China in 2014 that signalled America's renewed support for international climate action. This bilateral agreement was widely praised as a key game changer in the Paris Agreement negotiations, as it ensured that the two largest greenhouse gas (GHG) emitters were committed to working towards the goal of climate change mitigation.

It is important to note that these two uses of power in GEP are not mutually exclusive. In fact, in many cases positive and negative dimensions of environmental power coexist or overlap. A large and populous country may cast a long ecological shadow but may nevertheless play an active international role seeking to advance environmental protection. Thus, China, the US, and the EU are the three leading emitters of GHG emissions, but each of them can be said to have taken a leadership role at various points in the recent history of international climate politics. We also need to consider the issue-specific nature of the use of environmental power. Countries that lead on one international environmental issue may be laggards on other issues. Indeed, countries rarely take a consistent stance across the wide range of environmental problems that can be found on the international agenda. Japan and Norway, for example, are noted for their international leadership in some environmental areas (e.g. supporting biodiversity protection in developing countries) but play a more obstructionist role in other areas (e.g. whaling). More often than not, some of the most powerful nations on the planet can be found to be both leaders and laggards in international environmental politics, and some oscillate repeatedly between negative and positive uses of environmental power (e.g. US foreign policy shifts from Bush to Obama, and from Trump to Biden). Just as in other global policy fields, great powers may aspire to be responsible leaders but often end up acting as the 'great irresponsibles' (Bull, 1980).

Great Powers in Global Environmental Politics

What makes a powerful country a 'great power' in GEP? In line with the ES's social framing, we can stipulate that great power status is a social phenomenon that depends on other actors according a country recognition as a responsible power. Great powers, as Bull (1977: 200–

202) defined them, are 'recognised by others to have, and conceived by their own leaders and peoples to have, certain special rights and duties.' How does this notion of great power status manifest itself in the field of GEP? Should we expect conventional great power status directly to translate into GEP? Or are there issue-specific characteristics in the environmental field that need to be taken into account when discussing the role and responsibilities of great powers?

Building on the above discussion of environmental power, it is fair to conclude that the conventional great powers are likely to possess both significant negative and positive environmental power. Their dominant military and economic might is invariably based on a resource-intensive industrial system that casts a long ecological shadow over the planet, and their political power gives them considerable diplomatic clout in international negotiations, including on environmental matters. That said, the usually small group of states that are considered to be great powers in international society are not the only ones that possess relevant environmental power across the many environmental issue-areas. This accords with the view of Bukovansky et al. (2012: 7378) that the domains of special responsibility are fragmented into issue-areas, each different in its social construction, actors, sources and types of power, social dynamics, etc. One implication of this is that, even allowing for ambiguities, the group of environmental great powers is larger than the group of great powers. Another is that similar ambiguities will attend any attempt to draw up a definitive list of environmental great powers. A brief discussion of the most likely contenders for the status of great power in GEP reveals the ambiguity implicit in this categorization.

What Counts as an Environmental Great Power?

Some cases are fairly straightforward. The world's most powerful nation, the US, is both a superpower in conventional terms and one of the world's leading environmental powers. As the largest economy with a high per capita ecological footprint, the US is both deeply implicated in many global environmental problems and plays a critical role in most multilateral environmental negotiations. In the early days of modern environmental politics, it pioneered new forms of environmental regulation, which were widely copied around the world, and promoted the creation and expansion of the international environmental agenda from the 1970s onwards. The US continues to lead on environmental issues where it has a strong domestic policy mandate, though the administrations of George W. Bush (2001–2009) and Donald Trump (2017–2021) are noted for their assertive anti-regulatory stance. Over time, the US has thus moved away from its early role as international environmental leader and has, more often than not, come to exercise negative power by rejecting a special responsibility for the global environment (Falkner, 2005).

The EU, initially a laggard on environmental issues in the 1970s and 1980s, has more recently pushed for international action on a wide range of environmental issues, most notably climate change (Wurzel and Connelly, 2010). Much like the US, the EU possesses considerable environmental power with global significance. Its economy, although more

energy efficient and with a lower per capita ecological footprint than that of the US, is a major source of global environmental degradation. The EU's claim to be an environmental leader has been widely noted, both as a demandeur in international negotiations and a 'market power' (Damro, 2015) that has the ability to raise global regulatory standards (Selin and VanDeveer, 2006), though questions persist about its 'actorness' (Vogler, 1999) and coherence (Barnes, 2010) as a power in international forums.3

Russia, once considered a superpower alongside the US, but merely an 'honorary power' during the 1990s, now falls more into the category of a declining great power in international affairs but is punching above its weight under President Putin. It is perhaps best thought of as a second-rank great power with mainly regional power resources but with some global aspirations remaining. Both its military and industrial strength have declined sharply since the end of the Cold War, with post-1991 deindustrialization also leading to a notable reduction in its global ecological footprint. Still, its considerable draw on natural resources, its substantial role as a fossil fuel producer, and its inefficient industrial system give it significant negative environmental power. What sets Russia apart from the US and EU is its relative weakness as a positive force in GEP. Having initially rejected the global environmental agenda as a Western, capitalist issue at the 1972 Stockholm Conference, the Soviet Union and later Russia has mostly taken a backseat role in international environmental negotiations, including in the climate negotiations. It rarely, if ever, aspires to play a positive, leading role in GEP.

Given its large economic size, Japan surely ranks as a leading environmental power with a considerable ecological footprint. Foreign investment by Japanese multinationals and the need to import vast amounts of natural resources (energy, timber) have been noted in the past as the source of the country's considerable 'environmental shadow' (Dauvergne, 1997; Hall, 2009). At the same time, Japan has at times taken on the role of a global environmental leader, promoting international cooperation on environmental management issues and exporting environmental technologies to developing countries (Maddock, 1994; Schreurs, 2004), even though this international role has come under growing domestic strain as the country's economic woes have increased (Tiberghien and Schreurs, 2007).

The rise of non-Western powers, most notably China and India, but also Brazil, South Africa, and Indonesia, has attracted growing attention in international affairs generally as well as in GEP. As mentioned above, questions can be raised about categorizing developing countries as great powers. However, there can be little doubt that most rising powers have become formidable environmental powers, mainly because their combination of rapidly rising economic fortunes and large populations has led to a dramatic expansion of their ecological footprint. China is the standout case in this regard. Having grown at around 10%

3 This question of the EU's 'actorness' is a general one in thinking about great powers. The strict state-centrism of realists means that they cannot 'see' the EU as an actor because it is not a state. If actorness is taken as an empirical question rather than as a theoretical presupposition, then the EU clearly has a significant degree of actor quality, and more so in issue-areas such as GEP, than in the 'high politics' of the traditional security agenda.

per annum for the last three decades, the Chinese economy, expected to become the world's largest within a few years, has one of the highest consumption rates for many global resources. It is the world's biggest importer of oil and largest consumer of coal, aluminium, nickel, zinc, copper, iron ore, and lead, among others (Armbrecht, 2015). China's overall ecological footprint is said to have surpassed that of the US in the early 2000s (Global Footprint Network, n.d.), and in 2006 it overtook the US as the world's largest emitter of GHGs. Other emerging economies, such as India, Brazil, and Indonesia, still lag behind China's dramatic economic growth, but their ecological footprints are expanding rapidly as their large populations are joining the global middle class and are ramping up consumption of the world's commodities. In many global environmental issue-areas, from climate change to air, water, and marine pollution, emerging economies have joined the leading great powers as major sources of global environmental degradation.

Many of the larger developing countries also possess significant environmental power because they control environmental goods that are of vital importance to the health of the planet. Brazil holds c. one-third of the world's rainforests and is the most biodiverse country on the planet, being home to at least 103,870 animal species and 43,020 plant species. Indonesia, one of the 17 'mega-diverse' countries with large forested areas, contains 2 of the world's 25 biodiversity 'hotspots' and ranks second in the world as the home to 12% of the world's mammals. India, also a mega-diverse country, harbours an estimated 7–8% of the recorded species and contains a vast range of globally significant ecosystems and habitats, such as forests, grasslands, wetlands, deserts, and coastal as well as marine environments (Convention on Biological Diversity, n.d.).

While emerging powers' rising economic profile and control over environmentally sensitive ecosystems has given them significant veto power in international negotiations, they are only slowly beginning to match this with corresponding positive power, that is the desire and capability to positively shape the international environmental agenda and promote global environmental solutions. In the past, emerging powers were viewed primarily as reluctant partners in GEP, at best, and as veto powers exercising negative power over issues such as deforestation and global warming, at worst. The long-standing framing of global environmental politics around the North–South divide, with industrialized countries cast as the main environmental culprits yet also leading demandeurs for international environmental action, has reinforced a defensive posture by developing countries and a strategic focus on regulatory differentiation and financial compensation. More recently, some emerging powers have begun to be more serious about addressing the worst environmental excesses at home and are also playing a more nuanced and constructive role internationally. Brazil has received widespread international praise for its efforts to tackle Amazonian deforestation, though these achievements are now threatened by the environmental policy shifts introduced under the presidency of Jair Bolsonaro (2019–). China has adopted a more proactive approach in the climate negotiations after having stepped up its efforts to curb rising GHG emissions at home (Green and Stern, 2017). Furthermore, the creation of the BASIC group in the UNFCCC negotiations, consisting of Brazil, China, India, and South Africa, signalled greater willingness

among emerging powers with a large emissions profile to accept some regulatory differentiation from the rest of the developing countries (Hochstetler and Milkoreit, 2014).

Thus, as for great powers generally, only more so, no definitive list of great powers exists for GEP. The largest and most advanced industrialized countries (the US, EU) can be considered to be of systemic importance across most, if not all, areas of global environmental protection. The populous and rapidly growing economies in the Global South are fast developing a similarly large ecological footprint, with China already in a leading position as the world's largest consumer of environmental resources. Until recently, their significance as environmental powers has rested more on their ability to obstruct than to promote environmental protection, though some (again, China) are beginning to claim an emerging leadership role in GEP. Some other countries that are conventionally considered to be great powers (e.g. Russia) are mostly noted for their negative environmental power, while others not normally considered to be great powers are significant environmental powers in one or a few specific areas (e.g. Malaysia in tropical forests, Indonesia in tropical forests and coal, Norway in whaling).

Sectoral and Spatial Differences

The question of what counts as a great power in GEP is complicated by two characteristics of the environmental policy field. For one, global environmental policymaking is highly fragmented, with hundreds of international environmental treaties and dozens of international organizations dealing with the wide array of environmental sectors that make up the international environmental agenda: from climate change to ozone layer and transboundary air pollution, and from biodiversity protection to deforestation, desertification, toxic waste, and marine pollution, each environmental issue has its own distinctive problem structure, which in turn results in a range of different power structures and institutional contexts. Despite overarching UN summits with universal participation and the United Nations Environmental Programme's role as a facilitator of international policymaking, no central forum exists for dealing with all, or even most, environmental issues that are of global concern. With environmental power being so fragmented, it is unlikely that a fixed set of environmental great powers exists that are in a dominant position across all environmental subfields. The US, EU, and now China, appear to be major powers across a wide range of environmental issue-areas, while other countries are powerful only in specific subsets of the international environmental agenda. We can thus distinguish great powers in GEP according to whether they possess wide or narrow environmental power, which exists either across a wide range of sectors or is concentrated in just a small set of sectors. In this sense, GEP is an extreme case of the diffusion of capabilities and responsibilities that has marked great powers generally. Probably, any country with wide environmental power will be a candidate for great power status, but it seems doubtful that the label 'great power' should be applied to those with narrow power in just one or two environmental sectors. They

would seem to fall more comfortably into the framing of Bukovansky et al.'s (2012) argument about the diffusion of special responsibilities.

A further complicating characteristic of GEP is that the issues that make up the international environmental agenda exist at different scales of international politics and involve different constellations of countries. Only some, such as climate change and ozone layer depletion, are truly global political problems that require a global approach. Others are of a more regional nature, from desertification to transboundary air pollution and water management, while yet others require only bilateral or plurilateral cooperation beneath the regional level, such as the management of rivers and riparian zones. Yet other environmental issues are highly localized phenomena (e.g. deforestation, whaling) but have regional or even global implications (e.g. local forests acting as carbon sinks for the global climate; local whaling leading to global species loss). For this reason, environmental power, both in its negative and positive use, has distinctive spatial dimensions that affect our understanding of what counts as a great power in GEP.

As noted above, great power interest and responsibility can exist at different spatial scales, from global through regional to local. In the environmental sector, great powers may operate at different levels, from the global down to the regional or other sub-global levels. Environmental regionalism has always played an important role, despite the global policy aspirations of the UN environment summits of 1972, 1992, 2002, and 2012. More recently, regional environmental cooperation has further gained in political significance as it offers opportunities for regulatory harmonization that meet both environmental and trade/investment policy objectives (Schreurs, 2013). Regionalism also appeals to environmental leaders as a more congenial forum in which environmental protection policies can be advanced, especially at a time when many multilateral efforts at the UN level appear to be deadlocked. We can thus distinguish between countries whose great power status in GEP is global in nature, while others may only be considered to be environmental great powers in a regional, or even subregional, context.

When it comes to negative environmental power, the distinction between different scales of great power status is reflected in the spatial dimensions of the environmental resources that a country controls or of the environmental harm it can cause. Such spatial categorizations are subject to change over time, however, depending on how environmental problems are defined and impacts are understood. Deforestation, for example, was primarily seen as a local problem in the nineteenth century and well into the twentieth century, affecting mainly the country where it was occurring. By the late twentieth century, due to wider recognition of the importance of tropical rainforests for biodiversity and climate stability, deforestation had become a global environmental problem, as is evident from the repeated but failed efforts to create a global forest regime since the early 1990s (Humphreys, 2006).

Similarly, positive environmental power comes with distinctive spatial characteristics. The US and the EU both have global policy ambitions in their engagement with the international environmental agenda and have provided international leadership on

environmental issues that has had a lasting impact on the institutional and legal structure of GEP. At the same time, the US and EU also play distinctive regional roles in their respective neighbourhoods. The US has sought to shape environmental policies of neighbouring countries through regional initiative such as NAFTA and bilateral agreements with Latin America. The EU has developed a distinctly regional dimension to its external environmental role, using environmental conditionality in its negotiations with countries that want to join the union (Andanova, 2003; Knill and Tosun, 2009). Of all emerging powers, China comes closest to playing a systematically global environmental role, mainly because of its rapidly growing environmental footprint and increasing global power ambition. China has also started to stake out an emerging (though widely contested) regional environmental leadership role, particularly in the context of regional investment and trading relationships (e.g. the Belt and Road Initiative). Armed with its own concept of sustainable development ('ecological civilization'—see Goron, 2018), the country is increasingly trying to project an image, if not a reality, of environmental responsibility in these various regional partnerships. Other major environmental powers have seen their global policy ambition reduced in recent years, even if their status as a leading economy ensures that their environmental footprint remains global in nature. Japan, for example, was once assumed to have global environmental leadership ambition (Maddock, 1994; Dauvergne, 1998) but is perhaps better thought of as a regional, not global, environmental power (Graham, 2004), with much of its environmental aid efforts concentrated on the Asian region, and particularly Southeast Asia.

Towards Great Power Responsibility for the Environment?

This section addresses three themes:

- The relationship between great power status and the management of global international society;
- The specific nature of great power responsibility for the global environment; and
- The question of whether to securitize the environment or not.

Great Powers as Managers of International Society

Power inequality is one of the eternal features of international life, and most IR theories have attributed some form of wider managerial role to those nations that possess the most power in international relations. Materialist theories of IR (e.g. realism) assume that great powers are the dominant players by default, whether or not they actively seek to manage the international system. Great powers largely determine outcomes in international interactions, with the main variation being the distribution of power and the number of great powers. In a unipolar system, individual superpowers can exercise hegemonic power worldwide, while in a multipolar system groups of great powers may form alliances in an effort to maintain a rough balance of power. Social theories (e.g. ES, constructivism) accept the material reality of power inequality but qualify it with an important dimension: legitimacy. The role of great

powers as managers of international society is determined not only by the distribution of power but also by whether they can claim to act with a certain degree of legitimacy. In this view, great powers may have the material means to shape outcomes by power inequality, but their managerial role is also subject to social approval by the other, less powerful, members of international society.

The ES has taken the idea of great power legitimacy furthest and identifies GPM as one of the five classical primary institutions of international society identified, the other four being war, diplomacy, international law, and the balance of power (Bull, 1977). As noted above, in Bull's formulation, great powers not only assume themselves but are also recognized by others to have managerial rights and responsibilities for international order. The key to GPM as an institution of international society is thus that the powers concerned attract legitimacy to support their unequal status as leaders by accepting special responsibilities as well as claiming special rights (Bull, 1977: 74; Bukovansky et al., 2012: 26–27). They do this both by displaying good manners and by efficiently providing public goods (Clark, 2009: 207–220). GPM thus embodies a quid pro quo in which lesser states legitimize a degree of sovereign inequality in return for the provision of order that only the great powers have the capacity, self-interest, and will to provide. A classic example is Britain providing the charts, the standards, and the rules of the road for maritime navigation during the period in which it had much the biggest world-spanning navy and merchant marine. The US similarly defined the rules of the road for the internet. More broadly, this inequality takes the form of great powers forming a club, or collective hegemony, in which they recognize each other as equals at a higher level, and enjoy privileged positions in IGOs. In return, they take responsibility for upholding the core norms of international society (Simpson, 2004; Suzuki, 2008: 50).

The GPM concept is not without its problems. Various authors have pointed out that the link between the possession of great power capabilities and acceptance of global responsibilities is not straightforward, and that the inherently social nature of the concept of great power responsibility implies a certain degree of ambiguity when it comes to defining its content.

The first ambiguity in GPM thinking concerns the link between the possession of capabilities on the one hand, and the assignment and acceptance of special rights and responsibilities on the other. As discussed above, in the classical formulation of GPM, it was the big differentiation of capabilities amongst states that both motivated and justified the assignment of special rights and responsibilities to those in possession of greater capabilities. Great powers were assumed to have both the self-interest and the capability to take on managerial responsibilities. Lesser states were assumed to have sufficient interest in the maintenance of international order so that they would acquiesce to the derogation from sovereign equality that GPM required. But is this as straightforward as it may seem? Do states always accept the responsibilities that are commensurate with their power?

We know from international history that great powers don't necessarily accept the responsibilities that are ascribed to them, nor do they always act according to those

responsibilities that they have come to accept. Alternatively, a power might have the capability but not be sufficiently trusted by lesser powers and/or other great powers to be given special rights and responsibilities. Powerful states may have the necessary prerequisites to be considered a legitimate great power, but this does not guarantee that they will act in a responsible manner. Bull (1977: 207) made this point when he referred to great power responsibility as a concept that 'is not a description of what great powers actually do. It is rather a statement of the roles they can, and sometimes do, play that sustain international order'. One of the enduring themes in the great power responsibility literature is this inherent tension, and at times open conflict, between intersubjective understandings of what rights and responsibilities the most powerful nations have and the way these nations interpret their great power status. In an ideal scenario, great powers can be expected to adopt an ethic of responsibility (raison de système) that serves the benefit of the greater collective, the society of states. However, whether great powers' national interest (raison d'état) does actually manifest itself as enlightened self-interest remains an empirical question. Bull's depiction of the US and the Soviet Union as 'great irresponsibles' is a good example of great powers preferring to pursue their own disputes and so refusing to take up responsibilities commensurate with their capabilities. So, while the linkage between capability and responsibility underpins GPM in principle, in practice it sometimes works and sometimes doesn't.

The second ambiguity in the GPM literature concerns the inherently social nature of the concept of great power responsibility. Simply put, it is far from clear what the content of great power responsibilities should be, and what processes exist through which this content is being defined and contested. As Loke (2016: 852) notes, the scope of responsibility ultimately depends on the normative ambition of international society, which can change over time. At the lower end of the normative spectrum, labelled pluralist in ES theory, great powers are expected to act merely as the guardians of the Westphalian order, guaranteeing the stability and survival of the society of states. In this perspective, global environmental protection would most likely not enter the remit of great power responsibility, unless environmental degradation poses a systemic risk to international society. At the other, solidarist, end of the spectrum, great powers may take on a more expansive role in realizing certain global public goods that go well beyond mere system survival. These might include management of the global economy, control of disease, and environmental stewardship. The range of such enlarged international responsibilities will ultimately be determined by processes of social negotiation, involving primarily states as the members of international society but potentially also non-state actors. As international society moves either way along the pluralist–solidarist spectrum, between a logic of mere coexistence on the pluralist end, to a logic of cooperation on the solidarist one, we would thus expect great power responsibilities to expand and contract in line with the underlying normative change.

Bukovansky et al. (2012: 47) suggest that there is an important linkage between the special responsibilities of great powers on the one hand, and the international security agenda on the other. Cui and Buzan (2016) develop this argument to show how the expansion

of the international security agenda from its traditional military concerns to include a much wider array of non-military, but securitized, issues (see Buzan and Hansen, 2009: chapter 7) is a key to understanding the expansion of great power responsibility to a much wider range of issues. As Bukovansky et al. (2012: 73–78, 250–263) note, the domains of special responsibility are now fragmented into issue-areas, each different in its social construction, with different actors, sources and types of power, and social dynamics.

The critical role that security plays in GPM thinking is evident in Bull's thinking. Bull (1977: 200–229) makes clear that the scope and function of classical GPM is deeply rooted in security, and that therefore, in both theory and practice, GPM norms can also be sustained by calculation or coercion, as well as shared belief. The functions defined by the traditional (i.e. military-political) security agenda are set out by Bull (1977: 207), who argues that the basic role of great powers is to manage their relations with each other and to 'impart a degree of central direction to the affairs of international society as a whole'. This nicely differentiates raison de système from raison d'état. More specifically he identifies six functions for GPM:

1. To preserve the general balance of power;
2. To avoid or control central crises;
3. To limit or contain central wars;
4. To exploit their local preponderance to maintain regional order;
5. To respect each other's spheres of influence; and
6. To take joint actions.

These traditional functions do not disappear after 1945, but they are increasingly accompanied by new functions that emerged from the wider and deeper understanding of security (Buzan, Wæver, and deWilde, 1998; Buzan and Hansen, 2009). As the so-called non-traditional security (NTS) agenda comes into play, the functions of GPM expand into economic, environmental, health, human, and identity security. Bukovansky et al. (2012: 47) suggest that the widening of the security agenda has extended and deepened what is accepted as the special responsibilities of great powers. This is an important insight. It provides both a driving force and a legitimating framework for tracking how and why the functions of GPM have changed over time.

Cui and Buzan (2016: 197–198) show how elements of the traditional security functions of GPM persist even after the post-1945 shift to a postcolonial GIS. As shown by the ongoing manoeuvres amongst the US, China, Russia, the EU, and India, the great powers still have to manage their relations with each other. They have to pursue arms control, as in attempts to prevent the spread of nuclear weapons. They also, up to a point, take joint action against international terrorism and piracy. And although more divisive (think of Syria, Libya, North Korea), great powers still intervene regularly when domestic turmoil in lesser states is thought to threaten international security.

From the end of the Cold War, the risk of great power war declined very substantially, and during the 1990s, a range of non-military threats occupied the leading edge of

securitization. These often, but not always, came in the form of shared-fate threats—such as air pollution, financial crises, migration, disease, cybersecurity, transnational crime, and nuclear pollution—that can and do spill over territorial borders. Much of this NTS agenda is about a range of functional issues that do not necessarily, or even usually, link to political violence. These wider logics of functional, non-military, 'common security' (security with) are becoming more intense, and compete with the traditional, often military, logics of 'national security' (security against). Some of these shared fates will create sustained pressure for global management, most obviously the global market, climate change, disease control, and planetary protection against space rocks. But some will create both 'security with' pressures for global cooperation and 'security against' opportunities for weaponization in great power competitions, most obviously in cybersecurity, migration, the rise of artificial intelligence, and possibly pandemics. Which tendency dominates will interplay strongly with whether GPM expands or contracts in the emerging world order of deep pluralism.

Cui and Buzan (2016: 198–203, 207–210) go on to argue that the widening of the international security agenda into these non-traditional functional areas, has not just extended the scope of GPM, but also pushed it towards merger with global governance. The global governance literature emphasizes the role of lesser powers, IGOs, and non-state actors, and tends to see great powers as being more part of the problem of world order than part of the solution. This literature has tended to stand back-to-back with the one on GPM, with neither addressing the increasing overlaps and synergies between them resulting from the expanding functional scope of GPM. This de facto merger of GMP and global governance puts onto centre stage the argument of Bukovansky et al. (2012: 73–78, 250–263) about how special responsibilities have diffused away from great powers to a variety of other actors, the mix differing according to the issue. The wider security agenda has indeed pushed great power responsibilities into new issue-areas. But at the same time, it has given special responsibilities to actors other than great powers. Global environmental protection is one of those issue-areas to which the diffusion of special responsibilities to both great powers and other actors applies.

Great Power Responsibility for the Global Environment?

As noted above, the link between the international norm of environmental stewardship and traditional notions of great power management is (as yet) relatively weak. However, this has not prevented the great powers from facing critical scrutiny in global environmental debates and growing demands to make a bigger contribution towards collective environmental management. One reason for this is, of course, that they are seen as a major part of the problem. By virtue of their large industrial and military strength, the great powers are bound to have an oversized environmental footprint and are therefore likely to be implicated in most global environmental problems. Great powers have also been called upon to provide additional leadership because of the increasing gridlock in multilateral forums dealing with environmental issues. The G7/8, for example, has been drawn into debates on climate change

on several occasions, especially in the run-up to important Conferences of the Parties (COPs) of the UNFCCC (Kirton and Kokotsis, 2016). And the UN Security Council (UNSC) has debated on several occasions whether and how it can play a more active role in global environmental politics (Conca et al., 2017). In both cases, demand for great power leadership and the perceived failings of the existing architecture for global environmental governance make up two sides of the same coin.

A new source of demand for great power responsibility for environmental protection has emerged in the context of the debate on socializing emerging powers. China, in particular, has come under growing international pressure to make a greater contribution to global environmental protection. Such expectations are partly the direct consequence of China's extraordinary economic growth over the last three decades, which has put increasing strain on the planet. They also reflect China's growing regional and global power ambition, which has raised the question of whether the country will also shoulder greater responsibility in international affairs more generally. In this respect, taking on an enhanced international environmental role offers an opportunity for an emerging power such as China (but also India, Brazil, and others) to signal its intention not only to rise peacefully but also to accept the duties that come with being a legitimate and responsible great power.

Although great power responsibility for the global environment remains an emerging expectation that has not yet been anchored in the institutional architecture of GEP, various forms of experimentation with an enhanced role for great powers have surfaced. The failings of environmental multilateralism have encouraged some powers to experiment with minilateral cooperation and environmental clubs, which might allow them both to assert their special position in GEP and also explore new avenues for enhanced environmental cooperation. Such minilateral efforts signal growing unease about the weakness of existing international environmental processes and institutions, as well as willingness among at least some great powers to explore alternative arrangements, though they are still far from a fully fledged engagement of GPM in global environmental protection. Various international forums, such as the G7/8 and the G20, have been used to create a political consensus among leading powers behind environmental objectives, most notably in the context of the climate negotiations (Kim and Chung, 2012). So far, their contribution has been limited to debating global objectives and passing non-binding resolutions. At best, G7 or G20 declarations have generated momentum in the multilateral negotiations under the auspices of the UNFCCC; at worst they have provided inconsequential opportunities for grandstanding on environmental issues. Some countries have gone a step further and have proposed to create an environmental/climate mandate for the UNSC, which would be the most dramatic step towards a GPM-style formation of a great power club in GEP. On several occasions, the UNSC held debates about whether it should play a formal role in the fight against climate change, but all such proposals have been rejected and there appears to be little appetite to expand the institution's remit in this way (Scott 2015), though this can change anytime as global environmental problems such as climate change increase the pressure on the UN to play a more proactive role (Conca et al., 2017: 17).

One reason why it has proved more difficult to establish formal institutional mechanisms for engaging GPM for environmental reasons lies in the difficulty to establish corresponding great power rights and privileges that would go with great power responsibilities. Great powers usually expect exclusive great power rights and privileges if they are to take on special responsibilities for maintaining the international order. The most prominent example of this is the UN security system, in which the Permanent Five (USA, Soviet Union, China, France and Britain) are tasked to protect order and peace in international society, in exchange for which they were given a permanent seat on the UNSC and a veto over any UNSC decisions. Apart from this explicit form of legalized collective hegemony, other more informal clubs have evolved to give great powers certain privileges in carrying out managerial roles, with varying degrees of institutionalization. The Nuclear Non-Proliferation Treaty established a certain number of countries as recognized nuclear weapons states; decision-making in the IMF favours leading industrialized countries as voting rights are weighted according to economic importance, with the US having a de facto veto over important decisions; and various minilateral groupings give leading countries from the North (G7) and from industrialized and emerging economies (G20) a privileged position in the management of global economic affairs. As members of a formal or informal club, great powers thus enjoy privileges within international society that are legitimized by other states in return for the provision of international order and the protection of core international norms (Bull, 1977: 74). No such system of balanced great power rights and responsibilities has ever come into existence in GEP. International environmental negotiations continue to emphasize a strong form of multilateralism, which ensures the broad participation of virtually all countries and consensus as the default norm in decision-making.

Instead, informal minilateral processes have been used in GEP, either as a complement to multilateral processes or as a substitute when formal multilateralism proves to be ineffective. Throughout the history of GEP, informal discussions and pre-negotiations among a small group of environmental powers have been routinely used to advance international cooperation. This was most clearly the case in the 1970s and 1980s, when many environmental treaties were negotiated by only small groups of countries, often not more than 20 or 30. Even as participation in multilateral environmental agreement negotiations expanded from the 1990s onwards, it has not been uncommon for small groups of powerful states to pre-negotiate contentious issues in smaller settings before they are adopted multilaterally. This has been the case especially in politically contentious areas, such as climate change, where leading environmental powers have tended to assert their influence and play a more active role in shaping international outcomes (Brenton, 2013). When a small group of great powers tried to broker a political deal at the end of the 2009 Copenhagen Conference on climate change, this helped to produce a breakthrough compromise in the form of the Copenhagen Accord. More recently, the US and China reached a bilateral agreement on climate change cooperation in November 2014, thereby paving the way towards the successful negotiation of the Paris Agreement in 2015.

The experience with the climate negotiations shows both the growing tendency to rely on informal great power minilateralism and the legitimacy challenges that such a shift creates. When US President Obama and the leaders of the BASIC countries agreed the Copenhagen Accord to prevent the 2009 Copenhagen conference from collapsing, the accord was immediately challenged in the final COP plenary for having been negotiated without the participation or consultation of other parties. Lack of multilateral legitimacy was the main reason why the accord was only noted, but not adopted, at the end of the COP (Dimitrov, 2010). Developing countries have since reiterated their opposition to any reliance on climate minilateralism, either within or outside the UNFCCC. Interestingly, surveys of elite opinion within the UNFCCC process reinforce the perception that minilateral clubs carry only limited legitimacy among climate negotiators (Hjerpe and Nasiritousi, 2015). The question then arises whether this might change should environmental multilateralism continue to produce diminishing returns and the urgency of fighting global ecological challenges, such as climate change, grows.

Securitizing the Environment?

The security dimension, which is central to the classical form of GPM, is of critical importance in this regard. A formal system of GPM is assumed by most IR theorists to arise out of the concerns for security in international society. This is how Bull defines the scope and function of GPM, as a function of a narrow concern with military-political security (Bull, 1977: 200–229). Being a socially determined norm, GPM is not static, however; it can take on a more expansive and ambitious agenda in line with the changing international normative agenda. As international society moves towards a more solidarist logic of international cooperation, we should expect great power responsibilities to go beyond classical concerns with military security. In the post-Cold War international order, for example, great power competition receded and shared-fate issues moved to the top of the international security agenda (Buzan, Wæver, and deWilde, 1998; Buzan and Hansen, 2009), which raised the possibility of bringing a wider range of global management issues (economic, health, environmental) into GPM's purview.

Securitization of global environmental issues thus provides one important logic for creating special environmental responsibilities as part of an expanded system of GPM. There are good reasons why global environmental degradation ought to be thought of as a non-traditional security concern that should motivate great powers as part of their traditional special responsibilities. The first reason is that some environmental problems, most notably climate change, pose an existential threat to individuals and societies. In the case of rising sea levels caused by global warming, for example, the very survival of low-lying islands and heavily populated and urbanized coastal areas, including many of the world's great cities, is at risk. Second, securitizing the environment can lead to the development of more focused and urgent policy responses, potentially helping to overcome the pervasive collective action problems that afflict environmental management. Adopting a security framing can mobilize

extraordinary political responses that go beyond the slow-moving ordinary political processes so common in environmental politics (Buzan, Wæver, and deWilde, 1998). On this basis, one would expect great powers to assume special responsibilities for global environmental protection where this relates to the core functions of GPM.

As yet, however, despite repeated efforts to establish an environmental security agenda, the securitization of GEP remains incomplete and great powers have not yet developed systematic environmental responsibilities in line with their other great power responsibilities. Securitizing moves in GEP go back at least to the late 1980s, when the debate on the link between environment and security first gained wider academic and political attention (Myers, 1989; Mathews, 1989; for a counterpoint see Deudney, 1990). Various political and military organizations have since debated the merits of applying a security lens to environmental issues (US Department of Defense, NATO, UNSC, OSCE, UN Development Programme, EU). The security dimensions of climate change—as a threat multiplier, source of internal and international conflict, and cause of migration flows—have attracted the most attention in this context. Securitization of climate change reached a high point during the first Obama Administration in 2008–2009, with the White House and its congressional allies making the case for framing the climate challenge as a security issue. This effort failed, however, both in terms of gaining public acceptance and initiating policy change (Hayes and Knox-Hayes, 2014). Securitization moves by advocates of environmental protection continue, both in the US and in other countries, but they have yet to have a lasting impact on the framing and execution of national or global environmental policy.

There are several reasons for the limited success of past environmental securitization attempts. For one, it has generally proved easier to securitize specific threats that originate with human agents (e.g. military power, terrorism, migration, trade surpluses) than diffuse threats arising from structural causes or from nature (e.g. climate change, disease, space rocks, the global economy), even if the latter may threaten more people's lives and livelihoods. Furthermore, although securitization would legitimate the application of urgent and extraordinary political measures in response to environmental threats, it is far from clear whether a national security-type response would be able to tackle their complex roots. Many environmental problems require long-term and internationally coordinated changes to energy systems, industrial processes, consumer behaviour, and societal norms. In contrast, securitization tends to encourage short-term, territorially defined, and even militarized policy responses. Unsurprisingly, many environmentalists have therefore resisted securitization as an unhelpful legitimation of state-centric approaches that would prove to be counterproductive (Deudney, 1990). The two problems for securitizing the environment identified by Buzan, Wæver, and deWilde (1998: 71–93) also remain in play. The first is that there are two agendas in play in the securitization process—scientific and political—and these often do not line up. The second is that climate change as an issue is particularly vulnerable to becoming entangled in the often intense economic polarizations of North–South global politics.

The weak or incomplete securitization of GEP points to a further reason why GPM has not been fully mobilized for environmental purposes. Environmental stewardship, although having been established as a primary institution of global international society, has not yet assumed systemic importance to international order and stability (Bernstein, 2020). Environmental threats, such as ozone layer depletion, climate change, and biodiversity loss, may be of global importance and pose a long-term threat to the sustainability of global ecosystems, including those that support human life on the planet. But the long-term and uncertain nature of many of these planetary threats has meant that failure to tackle them does not yet place international society and its current order in jeopardy. Even when called upon to act in the interest of planetary sustainability, great powers have largely rejected doing so as part of their broader responsibility for maintaining international order. This is not to say that environmental concerns may never assume systemic importance to international society. A rapid acceleration of the global warming trend and a collapse of vital ecosystems could quickly turn environmental sustainability into a life-or-death matter for international society. Recent mobilizations around the notion of a 'climate emergency' (Davidson et al., 2020) are pointing in this direction. One of the questions, then, that we explore in this volume is how close international society has come to accepting that reaching certain ecological tipping points would trigger a wholesale securitization of environmental protection.

Conclusion

This chapter has set out the theoretical context and analytical framework that the contributors to this volume have worked with. Our framework builds on a material and social understanding of power, and of great powers, and applies this to the field of environmental politics. As we have shown, some of the ambiguities that surround discussions of great powers in international politics apply to the environmental sector too, particularly when it comes to determining a definitive list of great powers and identifying different sectoral and spatial dimensions. On the whole, because of their oversized economic presence and ecological footprint, conventional great powers are also environmental great powers. Some countries that are not in the former category are significant environmental powers in one or two specific areas, pointing to the general diffusion of capabilities and responsibilities that characterizes great powers today. However, it seems unlikely that those that possess narrow but not wide environmental power can count as environmental great powers. The emerging powers of the Global South pose an interesting challenge to established great power categorizations. The shift towards a deep pluralist international system/society involves an expansion of the number of countries whose influence extends beyond their own regions. China is already well established as a geopolitical rival to the US, India is on the edge of the great power club, and Brazil can claim to be more than a regional power. If anything, their environmental great power status is even more firmly established, given their large populations and dramatic economic expansion in recent years. However, just as in the international security realm, emerging environmental powers are cautious about taking on

additional international responsibilities that would be commensurate with their enhanced international status. They, as much as the established powers, may be facing growing demands to take on great power responsibility for environmental protection. But a collective GPM approach has yet to emerge, and this is a key problem for GEP.

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