Chapter 11
Strategic Thinking and the Antarctic Wilderness: Contrasting Alternative Futures

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Abstract The Protocol on Environmental Protection to the Antarctic Treaty outlines a vision for the Antarctic wilderness, and together with its six annexes, forms a framework that can readily serve as a basis for strategic thinking for environmental protection. Baumgartner and Korhonen (2010) defined the notion of 'strategic thinking' as characterised by three interrelated and distinct dimensions: strategy process, strategy content and strategy context. We use this framework to examine how strategic thinking is applied to protect the Antarctic wilderness. Since the Protocol came into force in 1998, the Committee for Environmental Protection and the Antarctic Treaty Consultative Meetings have adopted various *ad hoc* forms of strategic processes and have had varying amounts of strategic content in their discussions and decisions. Despite the protected status of the Antarctic Treaty area and the consideration of environmental issues in deliberations by Antarctic Treaty states, the strategic context of the region results in intense local, regional and global development pressures. Environmental protection may feature in a 'Business-As-Usual' future for the Antarctic, but on the margins rather than as a central guiding principle, risking a 'paper park' future. Environmental groups have called for a future Antarctica that includes the elements of wilderness, strategic thinking, international cooperation and stabilisation of the human footprint. We contend that Antarctic Treaty parties, encouraged by environmental groups and other actors, should ensure that implementing the

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objective and environmental principles of the Protocol becomes both a reality for the present and also a strategic vision for the longer term.

Keywords Alternative futures • Antarctica • Environmental organisations • Strategic thinking • Wilderness • Protocol on Environmental Protection to the Antarctic Treaty

11.1 Introduction

The Antarctic continent and adjacent areas south of 60 degrees south are protected by the 1991 Protocol on Environmental Protection to the Antarctic Treaty (Protocol), which entered into force in 1998 (e.g. Bastmeijer 2003; Bastmeijer and Roura 2008). The Protocol and its six Annexes[1] are the most recent component of the Antarctic Treaty System (ATS), which is 'the Antarctic Treaty, the measures in effect under that Treaty, its associated separate international instruments in force, and the measures in effect under those instruments' [Protocol Article 1(e)]. Thirty-three states are parties to the Protocol (USA 2011). In its Preamble, the Protocol states that the protection of the Antarctic environment and dependent and associated ecosystems is 'in the interest of mankind as a whole'. Decisions on the management of the Antarctic environment are taken by national governments, their National Antarctic Programs (NAPs), and—by consensus—by Antarctic Treaty Consultative Parties (ATCPs) at annual Antarctic Treaty Consultative Meetings (ATCMs) with the advice of the Committee for Environmental Protection (CEP). Environmental issues have become one of the main topics of deliberation of ATCMs (Sánchez and McIvor 2007; Orheim et al. 2011). However, decisions concerning the Antarctic marine ecosystem, such as fishing quotas and the designation of marine protected areas, are taken by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), which also meets annually and makes decisions by consensus.

Covering a terrestrial area of 14 million km^2 and marine area of 20 million km^2, with a rich endemic fauna and flora (see e.g. Shirihai 2002; Bergstrom et al. 2006; Knox 2007) and permanent human infrastructure covering well below 1 % of the land area, the Antarctic continent and its surrounding Southern Ocean are frequently referred to as one of the world's largest or last wildernesses [e.g. Resolution 3 (2011)[2] General guidelines for visitors to the Antarctic; Geoff 1986; IAATO 2007]. Although the region is protected as a designated 'natural reserve,

[1] Annex I Environmental impact assessment; Annex II Conservation of Antarctic flora and fauna; Annex III Waste disposal and waste management; Annex IV Prevention of marine pollution; Annex V Area protection and management; Annex VI liability arising from environmental emergencies (not yet effective).

[2] All ATCM Measures and Resolutions are available at: http://www.ats.aq/devAS/info_measures_list.aspx?lang=e.

devoted to peace and science' (Article 2 of the Protocol), the Antarctic wilderness is also under growing pressures. Pressures come from human activities within the Antarctic Treaty area, including science-related infrastructure developments, legal and illegal fishing for finfish, krill, expansion of coastal and inland tourism and biological prospecting (Tin et al. 2008; Hemmings and Roura 2007). Additional pressures on the environment result from global phenomena of different kinds, including climate change, long-range pollution and globalisation. At the same time, inadequate implementation of existing instruments and undercurrents of national and commercial interests by Antarctic Treaty states slow down progress in environmental decision making by the ATS as a whole. The effect has been that environmental governance has not sufficiently kept up with the pace of activity growth (Bastmeijer and Roura 2004; Hemmings 2010a; Roura and Hemmings 2011) and the inevitable erosion of the wilderness, intrinsic and environmental values the Protocol seeks to protect.

Is progress towards meeting the objective of the Protocol and compliance with its principles happening—to the extent it happens—as a result of strategic thinking, or just by chance? In this chapter, we use the conceptual framework of Baumgartner and Korhonen (2010) to examine how strategic thinking is used in Antarctic environmental protection under the Protocol—where the ATCM is the relevant decision-making body in all aspects of governance, and the CEP the main advisory body on environmental issues. In their discussion of strategic thinking for sustainable development, Baumgartner and Korhonen (2010) defined the notion of 'strategic thinking' as characterised by three interrelated and distinct dimensions, strategy process, strategy content and strategy context:

> The starting point for every strategy is the question of purpose of the whole endeavour. This is the input for strategy activities. The dimension of strategy process is the way to develop the strategy, i.e. the throughput (the how, who and when of strategy). The strategy content is the output of the strategy, i.e. the result of strategy activities. Conditions surrounding strategy activities are the strategy context, which has an influence on the possibilities and restrictions of strategic activities (2010, p. 73).

Following the three dimensions of strategy process, strategy content and strategy context (see also Lamers et al. 2013) we examine the current status of strategic thinking in Antarctic environmental management and sketch out two contrasting futures for the Antarctic wilderness. In Sect. 11.2, extrapolating from ongoing trends and decisions and discussions that have taken place within the ATS over the past two decades, we assess likely future outcomes for the Antarctic wilderness under 'Business-As-Usual conditions'. We then change perspective and in Sect. 11.3 delineate an alternative vision for the future of Antarctica based on the views that environmental groups have been advocating since the late 1970s. In this way we contrast the perspectives of national governments, which often reflect the search for international consensus in the context of conflicting national interests, with those of non-governmental, non-profit environmental organisations, which reflect the prioritisation of environmental protection. We conclude with a discussion of the basic actions we see as important to ensure the non-degradation of the Antarctic environment, ecosystems and wilderness as a legacy for future generations.

Our analysis is based on professional and personal experiences of the Antarctic and the ATS in various capacities, including but not limited to our participation as environmental non-governmental organization (ENGO) actors in the ATS for many years. This is complemented by examination of the final reports of the CEP (1999–2011)[3] and the Measures and Resolutions adopted by the ATCM in that period (see footnote 2).

Some basic terms used in this chapter require to be defined for clarity. The term 'strategic' can have a broad range of applications, but in this chapter we choose to use it narrowly as it applies to the planning and conducting of Antarctic activities with the ultimate mission of preserving the environments, ecosystems and wilderness of Antarctica. In this usage, strategic actions comply with the basic principles of the Protocol and contribute towards meeting the Protocol's objective, as discussed further below. Broadly speaking, strategic actions will usually involve large geographical areas, long timescales and interactions between different subsystems, components and stakeholders, in order to ensure system-wide and long-term environmental protection.

A detailed review of the concept of 'sustainable development' is beyond the scope of this chapter (for a review of the concept readers are referred to Keiner 2004; for a review of its application in international law see Schrijver 2008). We conceptualise sustainable development based on the concept of the 'egg of sustainability' originally designed in 1994 by the International Union for the Conservation of Nature (IUCN, cf. Guijt and Moiseev 2001) which emphasises that—as an egg yolk inside an egg white—people are within the ecosystem, and that the well-being of both is interdependent. However, any application of this concept to the Antarctic region should consider several important differences compared to the rest of the world. Antarctica has no indigenous people, and while it has some permanent settlements (i.e. research stations), residents are only temporary and represent a narrow segment of society (mostly scientists and logisticians). Human life in the Antarctic is largely dependent on food and energy sources originating from outside the region (conversely, marine living resources are extracted from the region for consumption elsewhere). Finally, a harsh climate, physical isolation, international cooperation, a focus on scientific research and a legal commitment to environmental protection are some of the important factors that influence human activities in the region.

Any discussion of this kind is naturally limited within certain boundaries. We acknowledge that strategic thinking for the Antarctic environment is not restricted within the CEP or under the Protocol, and that visions of governments and environmental groups come in all shapes and sizes. Despite these limitations, we hope that with this contribution we can spark off interest and discussion in the consideration of strategic thinking among the actors involved in the protection of the Antarctic wilderness.

[3] All CEP final reports are available at www.cep.aq.

11.2 An Assessment of Strategic Thinking in the Implementation of the Protocol

The Protocol and its Annexes provide an environmental planning framework that can readily serve as a basis for strategic thinking. The objective of the Protocol, as stated under Article 2, is to commit Treaty parties to 'the comprehensive protection of the Antarctic environment and dependent and associated ecosystems' and to designate Antarctica as 'a natural reserve, devoted to peace and science'. Article 3 (1) establishes the environmental principles of the Protocol:

> The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area.

In this section, we follow the conceptual framework of Baumgartner and Korhonen (2010) to examine how Articles 2 (objective) and 3 (environmental principles) of the Protocol are implemented in practice by examining:

1. Examples of strategic environmental decision-making processes that have been used by the CEP and the ATCM;
2. The strategic content of the discussions of the CEP and of recent related Measures and Resolutions agreed by the ATCM and
3. The strategic context in which the CEP and the ATCM operate.

11.2.1 Examples of Strategic Decision-Making Processes in the CEP and the ATCM

The Protocol provides a broad vision and purpose, and together with its Annexes it contains some of the means that would help to achieve this. These include the establishment of the CEP as an advisory body to the ATCMs on environmental matters, the requirement of formal Environmental Impact Assessments (EIAs) prior to the conduct of science, tourism and other Antarctic activities, requirements for waste management and planning, the listing of specially protected species, the development of a protected area network and mechanisms to deal with liability emerging from environmental damage (e.g. Bastmeijer 2003). Of note is that the precautionary principle is implicit (Hemmings and Kriwoken 2010) in Article 3 (2) of the Protocol which requires 'information sufficient' to allow prior assessments of the possible impacts of proposed activities (see also Roura and Hemmings 2011), which enables anticipatory action in advance of having comprehensive and conclusive information about all possible impacts.

The CEP and the ATCM have also followed *ad hoc* forms of strategic processes. These pertain to processes that arise as a result of specific needs, and which are

therefore restricted within discrete locations, concern specific actors, or simply aim to streamline discussions. One example is the Deception Island Antarctic Specially Managed Area (ASMA) which was developed for an island where conservation, scientific and tourism interests converge in a unique and fragile environment underlain by active volcanism (Pertierra et al. 2013). The process was strategic in the sense that it anticipated future developments of ongoing activities by NAPs and tour operators rather than being developed in response to specific activity proposals (Roura and Hemmings 2011). Another example is the Environmental Domains Analysis of the Antarctic continent. This systematic analysis divided the region into distinct ecological and geographical units, laying the necessary groundwork for systematic conservation planning whereby protected areas can be sited as part of a systematic network with the goal of protecting representative samples of Antarctic ecosystems and environmental values (New Zealand 2008; Terauds et al. 2012).

Decisions concerning the Antarctic environment follow from technical debates at the CEP and/or the ATCM, but whatever is decided at the end is often the output of national bureaucratic and international diplomatic processes, combined with other forces at play, which may include national, geopolitical and economic interests. A detailed analysis is beyond the scope of this chapter. It suffices to say that it is in this combination of processes and contrasting forces where the strategic processes of Antarctica sometimes depart from the Protocol's vision, often supporting but also sometimes opposing the objective and principles of the Protocol. As noted by Baumgartner and Korhonen:

> When any work is performed in a strategic manner, all individual activities serve to a common purpose…All actors and their actions contribute to a common vision, an overall goal. The actors and their activities do not go in different directions, nor are they competing (2010, p. 73).

If it is assumed that the Protocol provides a common vision and an overall goal, then all actions by Antarctic Treaty states and other actors should contribute towards them. A vision of an entire continent designated as a natural reserve may well mean no substantive development of the continent, while only allowing some activities that do not substantially alter the recognised values of Antarctica, including its wilderness. It is in our view that, without resorting to the introduction of fundamentally new concepts or practices, there is room for currently existing environmental decision-making processes to be put to action more strategically by the ATCM and the CEP. Roura and Hemmings (2011) suggest that this may be enacted through some formalised Strategic Environmental Assessment (SEA) process or, alternatively, through consciously giving existing processes for EIA and the designation of protected areas new *ad hoc* uses to address strategic environmental needs for particular regions, environmental domains or activity typologies. The concerted development of strategic visions and scenario analyses may also be used to guide the management of tourism and other human activities. Risk assessments and cost-benefit analyses are used by NAPs to support decision making on complex issues. These and other similar tools can be used more widely to integrate multiple stakeholder perspectives, long-time span and large geographical coverage

to arrive at optimal solutions in meeting the objective and the principles of the Protocol (see Lamers et al. 2013). Ultimately, political will is the key ingredient in making any strategic decision or action happen, which in turn requires a refocusing on the original objective and environmental principles of the Protocol.

11.2.2 Strategic Content of CEP Discussions and of ATCM Instruments, 1998–2011

The CEP, which is mandated by Article 11 of the Protocol, was established in 1998 following the entry into force of the Protocol. Strategic considerations of environmental issues received sporadic interest during the first few years. Between 1999 and 2002, several papers by the environmental organisation Antarctic and Southern Ocean Coalition (ASOC 1999, 2000, 2001a, 2002) elaborated on the concept of SEA. While the papers were generally welcomed, they did not generate substantive discussion (CEP 2000, paragraphs 44–45; 2001, paragraph 35). Significant discussion of strategic directions of CEP's work took place between 2005 and 2008, partly fuelled by a workshop convened on Antarctica's future environmental challenges in 2006. An 'Aide mémoire CEP—The way forward' was developed (CEP 2005, Annex VI), and has been perhaps the most visionary set of statements of the CEP to date. Key points of this document include:

- A core goal of the CEP is to maintain and if possible improve the state of the Antarctic environment;
- CEP members will take a precautionary approach to environmental issues; and
- CEP members want to become proactive to the protection of the Antarctic environment.

Since then, a 5-year strategic plan and a new CEP agenda item titled 'Strategic Discussions on the Future Work of the CEP' were put in place and are still in use. However, an examination of CEP reports shows that the strategic content of CEP discussions has mostly been focused on streamlining the CEP's workload and reviewing how the CEP worked. In contrast, taking concrete action on cross-cutting issues or human–environment interactions, which are also important strategic considerations (CEP 2005, paragraph 16), have been largely left to the action of individual CEP Members (i.e. parties to the Protocol).

The CEP can advise the ATCM on issues that may subsequently result in the adoption of legal instruments, such as Measures and Resolutions, by the ATCM. Measures are 'texts which contain provisions intended to be legally binding once approved by all ATCPs in accordance with paragraph 4 of Article IX of the Treaty'. Instead, Resolutions are 'texts of a hortatory nature adopted at an Antarctic Treaty Consultative Meeting' (USA 2002, p. 121). In general terms, Measures influence Antarctic activities to a greater degree than non-binding resolutions and—being harder to negotiate and slower to become effective—have a longer shelf life. Both types of instruments, however, can be withdrawn or replaced by other instruments.

Since the Protocol entered into force in 1998, a total of 81 Measures have been adopted, excluding those that have been withdrawn. Most adopted Measures (78 %) address the establishment of, and management plans for, protected areas in Antarctica. Most of these Measures have been adopted after 2002, when Annex V (Area Protection and Management) entered into force. Nearly 15 % of the Measures address the designation and management of Historic Sites and Monuments (HSMs), which are also covered by Annex V.

Measures related to protected areas can contribute to meeting the objective and principles of the Protocol on different spatial scales. At the local scale they potentially provide long-term protection to discrete sites. Regionally, they can form a network of protected areas containing representative examples of Antarctic ecosystem types and environmental values. Antarctic Specially Protected Areas (ASPAs) are designated to protect the outstanding environmental, scientific or other qualities of particular areas, and require a permit for entrance, which is normally only given to scientific personnel. Antarctic Specially Managed Areas (ASMAs) are generally larger in surface area; and may contain ASPAs, HSMs, or be divided in management zones of different kinds. ASMAs are usually selected with the aim to prevent conflicts of use and interest among actors active in the area, as well as to protect sensitive environmental features. ASMAs and ASPAs provide the building blocks of a protected area regime. However, protected areas in Antarctica are small, covering less than 1 % of the surface of Antarctica (New Zealand 2005, 2009), and have rarely been designated in anticipation of future developments at particular locations (with the exception of some ASMAs, such as was the case of Deception Island discussed above).

The remaining Measures have been adopted to address the following issues:

- The adoption of Annex VI of the Protocol on Liability Arising from Environmental Emergencies;
- Insurance and contingency planning for tourism and non-governmental activities in the Antarctic Treaty area, and regulations for the landing of persons from passenger vessels (including restrictions on landings for ships carrying more than 500 passengers);
- Amendments of the Protocol's Annex II on Conservation of Antarctic Fauna and Flora;
- De-listing of fur seals (*Arctocephalus* sp.) as Specially Protected Species;
- Provisions for environmental monitoring;
- Global change research and international cooperation in Antarctica and
- The establishment of the Secretariat of the Antarctic Treaty.

A total of 76 Resolutions have been adopted since 1998. These cover a much broader range of topics than Measures, including tourism (21 % of the Resolutions), shipping standards and the prevention of marine pollution (13 %), protected areas (9 %), fauna and flora (8 %) and issues related to various aspects of the interaction between the ATCM and CCAMLR (5 %). Most Resolutions have been agreed in order to provide *ad hoc* solutions to ongoing and emerging issues. Since Resolutions are not mandatory their effect with regards to longer term environmental protection is arguably more limited. However, some Resolutions serve to

pave the way for later actions and instruments. For example, Resolution 7 (2009) General Principles of Antarctic Tourism, explicitly refers to a strategic vision for tourism which could potentially set the stage for management decisions that could be more comprehensive and forward-looking than current efforts (see Jabour 2013).

Can Measures and Resolutions adopted since 1998 be said to be 'strategic'? None of them use the word 'strategic' (or related terms such as 'strategic' or 'strategies') in their title. It should however be noted that the word 'strategy' and related terms are absent in the Protocol itself. Some Measures and Resolutions refer to the concept of 'sustainable' environments or ecosystems, although this concept is not defined. For instance, Resolution 4 (2003) Support for the conservation of albatrosses and petrels expresses concern '…that populations of Albatrosses and Petrels are declining, due in large part to the unsustainable mortality of these birds from illegal, unregulated and unreported (IUU) fishing, to the extent that the status of many species of these birds is regarded as threaten (sic), endangered or vulnerable by the IUCN in its Red Data list'. Along the same lines, Measure 15 (2009) Landing of persons from passenger vessels in the Antarctic Treaty Area acknowledges '…the tourism industry's collaboration in efforts to ensure that its activities are sustainable and compatible with the objectives of the Antarctic Treaty'. The concept of 'long-term' appears in several instruments since 1992 including *inter alia* Resolution 5 (2007) Long-term effects of tourism and Resolution 7 (2009) General principles of Antarctic tourism.

Overall, this brief analysis suggests that the strategic content of CEP discussions and of instruments agreed by the ATS since the signature of the Protocol has not been absent, but has been relatively limited in extent and scope. Much of the CEP discussions have focused on streamlining the handling of its workload, while the organisation of actions that have a concrete effect on the ground has been largely left to individual CEP members. More recently the issue of climate change, however, has begun to be discussed by the CEP from a more strategic perspective (e.g. ATS 2012), although it is still not clear what type of concrete action will result from these discussions. Instruments approved by the ATCM, often following the advice of the CEP, have focused primarily on establishing or managing protected areas and on focused actions regarding important issues. Protected areas still cover a small percentage of Antarctica's territory and form an aggregate of disparate locations, rather than a coherent network.

11.2.3 Strategic Context: Emerging Pressures and Business-As-Usual

In this section we examine the larger regional and global socio-economic contexts in which environmental management of Antarctica is embedded, which enables us to consider the likely future consequences of following the present trajectory (Business-As-Usual). Strategic processes and content of ATS discussions do not take place in a vacuum. They are embedded within economic, political and physical contexts, both regional and global, which can all exert influence on the possibilities and restrictions of strategic activities.

11.2.3.1 Global Developments

Due to a range of global developments, including technological advance, increasing access to advanced technologies by a broader, increasingly wealthy community and new market conditions, it has become easier and cheaper for commercial interests and the public to access Antarctica. Activities such as fishing, tourism and biological prospecting have become economically viable and profitable activities that tend to develop further and expand. Scientific research is also able to take place in areas that has been hitherto difficult to reach. Many Treaty parties seek to maximise the economic benefits of Antarctic research and resource access—this is particularly obvious under the CAMLR Convention regime. Increasingly, human activity in Antarctic is becoming a regional manifestation of global phenomena (Hemmings 2007).

11.2.3.2 Global Climate Change

The Antarctic Peninsula is one of the fastest warming regions on Earth. Changes have direct effects on Antarctica's ecosystems and environment (SCAR 2009) and also how Antarctica is perceived by the society. New infrastructure and intense research activity in Antarctica, such as the International Polar Year 2007–2009, have been justified by the importance of using Antarctica as a pristine laboratory to understand the processes underlying global climate change—for example, see, the 2009 Washington Declaration on the International Polar Year and Polar Science (Antarctic Treaty-Arctic Council Joint Meeting 2009). Access to the region is changing, with potentially longer seasons in the milder months of the year where human activities can take place. Impacts of human activities may increase as non-native species and pollutants that have previously not been able to activate due to the low temperatures have a higher likelihood to become mobile (see Hughes et al. 2013). Changes in the surfaces of ice-covered land and of the ice-shelves may decrease the effectiveness of the Antarctic Treaty (e.g. Norway and United Kingdom 2010; Baker 2010).

11.2.3.3 Lack of Integration Across Regulatory Bodies

The Antarctic Treaty and its Protocol, the CAMLR Convention, the Agreement on the Conservation of Albatrosses and Petrels, the International Convention for the Regulation of Whaling, the International Convention for the Prevention of Pollution from Ships, and other international treaties and agreements, cover different elements of the Antarctic environment and their membership and areas of jurisdiction overlap partly but are not identical (see Woehler et al. 2013; Miller 2013; Leaper and Childerhouse 2013; Jabour 2013). They all have different emphases, some more oriented towards resource exploitation and management and others more towards conservation—or a combination of both approaches. Consequently, different components of the Antarctic environment are protected unevenly. In particular, large swaths of the marine environment south of 60 degrees south,

which are explicitly covered by the Protocol, rely primarily on decisions made by CCAMLR. Under Article 2 of the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) the notion of 'conservation' includes the concept of 'rational use', which includes (and is often conceived as exclusively) as harvesting, subject to several conservation principles.

11.2.3.4 Inconsistent Application of the Protocol

Antarctic Treaty parties have different priorities with respect to environmental management. Some do the minimum required by the Protocol, or not even that, while others introduce high environmental standards (ASOC 2001b; Tin et al. 2009; ASOC 2011). Breaches to the Protocol or instance of non-implementation—concerning for instance waste management and an absence of EIAs for many activities—are inexplicably still occurring 20 years after the signature of the Protocol (e.g. Braun 2013). Some issues are neglected, e.g. protection of wilderness values, infrastructure expansion and minimising and managing cumulative impacts of human activities. In addition, some instruments are applied but are not consistently effective, e.g. EIAs (Hemmings and Roura 2003; Bastmeijer and Roura 2008; Hemmings and Kriwoken 2010; ASOC 2011).

11.2.3.5 Business-As-Usual

Overall, the strategic context of Antarctica points to the increasing complexity of carrying out environmental planning and management in accordance to the Protocol. It also points to the increased difficulty for many Treaty parties to uphold the high environmental standards of the Protocol while resisting existing and emerging developmental pressures. However, the Protocol is not particularly suited to effectively address all of these pressures, and the ATS itself may be losing momentum to uphold the conservation values it accepted 20 years or more ago. Hemmings (2010b) has described the 'hollowing' of the ATS, by which it is meant that while the formal structure of the ATS remains, its substantive core has been disabled by both external forces—commercial pressures as well as competition from other global regimes—and from within, particularly with regards to the original question of sovereignty over Antarctic territory.

Taking into account past and ongoing strategic processes and content within the ATS and embedding it into the regional and global strategic context, what would happen if present trends continue into the future? A Business-As-Usual future for the Antarctic environment is likely to contain more of the current phenomena: continuous activity growth, expansion and diversification; loss of Antarctic exceptionalism—the conception of Antarctica as a different place ruled by different value systems than the rest of the world (see e.g. Hemmings 2009); encroachment upon and fragmentation of the Antarctic wilderness; and expanding commercial uses of Antarctica's natural resources, either through harvesting or use of ecosystem services

(see Box 11.1). Environmental protection may still feature in this future, but on the margins of these other phenomena rather than as a central guiding principle, and with the practical application of the Protocol and other environmental components of the ATS not always complying fully with the letter and intent of these instruments. In other words, there is a risk that the Antarctic continent and surrounding oceans will be legally protected but will become, for all intents and purposes, a 'paper park'.

Box 11.1: Projection of a Business-As-Usual Future for the Antarctic Wilderness

- Human activities continue to diversify, grow and spread out spatially. Environmental management does not keep up with the pace of activity growth.
- Once a special continent where high ideals of how humankind relate to each other (peace and science for the benefit of mankind) and to nature (natural reserve) were possible, Antarctica and its resources and environment are consumed following lower global and domestic standards (Hemmings 2009, 2010a).
- The ensemble of small protected areas does not provide protection to a representative sample of Antarctic ecosystems or environmental values. The designation of the continent as a natural reserve does not procure meaningful protection. Basic tenets of the Protocol are not adequately implemented by a sizeable percentage of NAPs.
- More research stations and transport networks (coastal shipping lanes, maintained roads and air links) are established near existing stations and in isolated areas, further encroaching upon the Antarctic wilderness.
- In marine areas south of 60 degrees south CCAMLR rules entirely, and the area of application of the Protocol retreats *de facto* to the continent. The focus on 'rational use' understood solely as harvesting means that Antarctic krill and finfish fisheries expand in volume and into new marine areas, with limited consideration to land-based predators. Whaling continues.
- ATS continues to manage tourism in a piecemeal, reactive manner, without an effective overarching vision. Tourism industry continues to expand, increasing the number of people it transports to Antarctica. Types of tourist activities diversify including the establishment of land-based tourism infrastructure of different kinds. Tourism expansion and diversification progresses ahead of regulation. Tourism impacts remain largely unmonitored.
- Biological prospecting develops in a vacuum of regulation, targeting rare and extreme forms of Antarctic life, without any substantive share of the benefits being invested in environmental protection.
- Parties position themselves for a future lifting of the mining ban. The concept of what constitutes bona fide scientific research on mineral resources is eroded, so that some preliminary geological prospecting takes place on regular bases.

11.3 Beyond Business-As-Usual: Environmentalists' Perspectives for the Future of Antarctica

For over 30 years, ENGOs under the umbrella of the Antarctic and Southern Ocean Coalition (ASOC) have acted as watchdog, partner, dreamer and advisor to the Treaty parties in bringing environmental perspectives into Antarctic governance. The role of ENGOs is to speak out on issues that are important for the Antarctic environment and ecosystems in a territory that lacks a constituency made up of indigenous peoples or permanent residents. Excluded from the ATS deliberations initially, ENGOs have since earned expert observer status within the ATS and—with varying degrees of influence and success—have played active roles in substantive debates concerning the environment, including debates that stopped the minerals convention and created the Protocol (Roura 2007a, b). The perspectives of ENGOs sometimes coincide with, and sometimes oppose, the individual or collective policies of Treaty parties.

In the face of ongoing and new environmental pressures since the signature of the Protocol and its subsequent entry into force, environmental groups have continued to demand the ATCM to uphold its mission of protecting and safeguarding Antarctica as the last unspoiled wilderness and a global commons for the heritage of future generations of humans and wildlife. Environmental groups have called for a future Antarctica that is emphatically better, and certainly no worse than the current situation in terms of the preservation of Antarctica's intrinsic values, the integrity of its wilderness and the upholding of the key principles of the Antarctic Treaty and its Protocol (ASOC 1999, 2000, 2001a, 2009; Roura and Tin 2006; Barnes 2011). This vision for the future of the Antarctic environment includes a low environmental impact, protection of wilderness, strategic thinking and international cooperation. Combined, these elements would contribute to stabilise the human footprint so that it does not increase substantially compared to the current one (see Box 11.2).

ENGOs have never suggested that appropriate uses of the Antarctica should be stopped. Rather, development—to the extent that it exists in the Antarctic—should be qualitative rather than quantitative in nature and contained within the limits of the ecosystem as set by science and/or a precautionary approach, in order to ensure that the objective and principles of the Protocol are met in perpetuity. Achieving this vision would require a shift from the present paradigm of under-regulated and continuous growth towards a new paradigm, based on four main criteria.

First, the status of Antarctica as a natural reserve should be maintained through the proper implementation of the objective, principles, letter and intent of the Protocol. The prohibition of mineral resource activities should remain in place permanently. The commitment to protecting the entire Antarctic region should be strengthened. In addition, more and larger protected areas on land and at sea need to be established, chosen following systematic and holistic criteria.

Secondly, strategic thinking in the management of activities on land and at sea, as covered by the Protocol, should be formalised through the establishment of a SEA process or its equivalent (e.g. at a minimum a conscious strategic use

Box 11.2: An Aspirational Vision for the Future of the Antarctic Wilderness

- Antarctica remains a large contiguous wilderness area where there is little evidence of human presence. It continues to be set aside from the rest of the world, governed as a global commons using higher environmental standards than those used elsewhere in the world. It remains a symbol of humanity's willingness to cohabit in peace, to work together in the interest of humankind of today and tomorrow and to protect nature for its intrinsic values.
- Human footprint in the Antarctic stops growing and even shrinks as obsolete infrastructure is removed and new human activity is carried out with a view to minimise its footprint. Existing active facilities are removed at the end of their life cycle (typically ca. 25 years after initial establishment).
- Scientific efforts are focused on those that are globally significant for the benefit of humankind and not for national or commercial interests. Parties' influence within ATS is determined by the quality of their science and environmental standards and not by sheer presence in the Antarctic.
- Science is increasingly undertaken involving little infrastructure and human presence, relying mostly on temporary facilities and remote techniques rather than large-scale permanent stations. Infrastructure and logistics are shared between parties. International research stations become common. Infrastructure is constructed or upgraded using state-of-the art technologies, minimising local and global environmental impacts.
- Use of ecosystem services (such as fishing, biological prospecting, tourism and other activities based on harvesting or otherwise using natural resources) is based on an ecosystem approach, the precautionary principle and the overall minimisation of environmental impacts. Mineral resource activities remain banned permanently.
- Most of Antarctica remains open most of the time to appropriate, low-impact human activity; however, the option of limiting human activity at relevant spatial, temporal and activity scales remains available as a way to preserve Antarctic values.

of existing instruments). This would ensure that strategic decisions are made and result in concrete action in advance of particular developments. Decisions should be guided by a future vision that has been consciously and collectively chosen. In particular, as noted by Bastmeijer (2011), human activities should be managed proactively to prevent situations where governance is absent.

Third, strengthening cooperation between Treaty parties would allow a more effective and timely response to emerging pressures. Effective cooperation would minimise the chances that territorial or resource interests prevail over international obligations and the global benefit of protecting Antarctica (ASOC 2011).

Finally, these actions would contribute to the reinforcement of the ATS so that it remains stable, by strengthening its governance role to be able to resist commercial pressures for opening up the Antarctic for development. Commercial activities should be regulated under legally binding instruments, applying the precautionary principle and supported by the best available scientific data. Science, the preservation of international peace and the environment should remain the three foundational pillars of Antarctic governance. Expanding activities such as the development of scientific infrastructure, tourism and biological prospecting are allowed to take place as long as they do not negatively affect these basic pillars. The same applies for new activities that may emerge in the future.

11.4 Conclusions: Realising a Vision for Antarctica

Looking into the recent past and present, we see that the content and process of strategic thinking in the ATS are sufficiently adequate—certainly in relation to other regions of the world—although they could be considerably strengthened. In particular, there are emerging gaps between the letter of the Protocol and the way it is implemented, including in its relation with CCAMLR. However, looking to the future, we believe that various sorts of pressures are increasingly encroaching upon the basics of the Protocol, resulting in weaker environmental protection. Many of the current developments are about securing access to actual and potential resources, ecosystem services and territory, partly for activities such as science and tourism, and partly for legal and illegal extractive industries, particularly in the marine environment, at the expense of an attrition of the environmental and wilderness values of the region. Tensions between internationally agreed objectives and national interests (Bastmeijer and Roura 2004; Roura and Hemmings 2011; Hemmings 2010a, b) create further pressures on the environment and the capability (and willingness) of parties to respond to these pressures.

In this context, a Business-As-Usual future of the Antarctic environment is likely to result in snowballing pressures, and a growing attrition of the Antarctic wilderness. However, not all is 'doom and gloom' and there are still chances to preserve core environmental values, provided that there is sufficient political will. As noted above, in the 'Aide mémoire CEP—The way forward' included in the CEP VIII report, the CEP was able to produce a simple but remarkable visionary set of statements. Antarctic Treaty parties (or CEP members under a different hat) should now ensure that these statements are effectively put into action. This is not to deny that some progress has been made to protect the environment. However, it is also apparent, as noted earlier, that many Antarctic Treaty parties have increased difficulty to apply the environmental standards of the Protocol and that the collective of parties is losing momentum to uphold the conservation values it accepted more than 20 years ago.

One option would be to 'reboot' the ATS, reinvigorate and restore to its original mission of preserving what has been called 'Antarctic exceptionalism'—the

unique nature of the Antarctic and its system of governance (Hemmings 2010a, b) and upholding, rather than eroding, the intrinsic values of Antarctica that parties themselves pledged to protect. This requires 'connecting the dots' so that strategic thinking—content, process and context—and resulting actions by the ATS and individual Treaty parties are fully in accordance with the stated objective and principles of the Protocol in order to prevent that these are derailed into a 'paper park' future.

During the Cold War era, with its underlying threat of nuclear warfare, it probably would have seemed naïve and idealistic to some people to dream of an entire continent designated as a natural reserve, devoted to peace and science in a context of international cooperation. A substantive step to make this dream a reality was achieved with the signature of the Protocol. In a discourse at the ceremony to commemorate the 50th anniversary of the entry into force of the Antarctic Treaty the former French Prime Minister Michel Rocard—one of the instigators of the Protocol—stated that the adoption of the Protocol had been a 'miracle' given the difficulty experienced over the past few decades in developing international agreements on issues like climate change (Statement by Michel Rocard in ATS 2011). Antarctic Treaty parties, encouraged by environmental groups and other actors, should ensure that implementing the Protocol becomes both a reality in the present and also a strategic vision for the longer term, and that the miracle does not turn into a mirage.

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