

# Antarctica: ‘A Global Knowledge Commons’<sup>1</sup>

Position paper for 6<sup>th</sup> Open Assembly of the Northern Research Forum, Hveragerdi, Iceland, September 4-6, 2011

Sanjay Chaturvedi

Centre for the Study of Geopolitics, Department of Political Science, Panjab University,  
Chandigarh (sanjay@pu.ac.in)

## Introduction

With good reasons to celebrate its numerous achievements over nearly five decades<sup>2</sup>, the multifaceted Antarctic Treaty System (ATS)<sup>3</sup>, increasingly impacted by globalization<sup>4</sup>, is at the crossroads today; confronted with the prospects of two alternative, but not necessarily mutually exclusive, futures. In the first scenario a multilayered Antarctic governance structure, encounters a crowded, complex and compelling agenda (tourism, bioprospecting<sup>5</sup>, IUU fishing, whaling,

---

<sup>1</sup> *The views expressed in this position paper are those of the author and do not reflect in any way the views of the Indian delegation to Antarctic Treaty Consultative Meetings.*

<sup>2</sup> For ‘Invited reflections on the Antarctic Treaty’ on the occasion of the 50<sup>th</sup> anniversary of the Antarctic Treaty of 1959, see: *Polar Record*, vol. 46, no. 1, 2010.

<sup>3</sup> The so-called Antarctic Treaty System (ATS) having originated in the provisions of the 1959 Antarctic Treaty has evolved over the years to encompass additional legal instruments (e.g. 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and 1991 Protocol on Environmental Protection to the Antarctic Treaty (PEPAT)) and the additional recommendations, decisions and measures adopted at Antarctic Treaty Consultative Meetings (ATCMs). Recommendation XII-6 adopted in 1983 in Canberra elucidates the notion of the ATS as follows: “The Antarctic Treaty, the numerous Measures adopted in furtherance of the principles and objectives of the Treaty and other instruments and acts associated with it constitute a far-sighted and effective system of international cooperation, which promotes international peace and security, increase in significant knowledge and understanding and effective environmental protection.”

<sup>4</sup> For an excellent discussion on how globalization is penetrating the ATS see Alan D. Hemmings, “Globalization’s Cold Genius and the Ending of Antarctic Isolation”, in Lorne K. Kriwoken, Julia Jabour, and Alan D. Hemmings, (eds.) *Looking South: Australia’s Antarctic Agenda*, (2007) Sydney: The Federation Press: 176-190.

<sup>5</sup> See the special issue of *Ethics in Science and Environmental Politics*, 2010, vol. 10, number 1 on the ethical and geopolitical implications of bioprospecting for science and governance in the two Polar Regions.

climate change<sup>6</sup> etc.), with much reduced authority and efficacy at its command. The Antarctic Treaty Consultative Meetings (ATCMs) of shortened duration find it difficult to arrive at a consensus on not only legally binding measures but even resolutions that are hortatory in nature. No doubt the ATS remains structurally intact but experiences considerable loss of legitimacy despite vociferous critics like Malaysia having been coopted into the regime. It is found struggling at the same time to overcome some kind of inertia, caused partly by the absence of well-informed debates on issues of critical global and regional importance and the unsettling presence of a number of ‘silent’ national delegations.<sup>7</sup> Finally, the agenda and practices of Antarctic diplomacy remain hostage to both the colonial-imperial legacy of territorial claims and counter-claims<sup>8</sup> (zealously guarded under Article IV of the Antarctic Treaty) and the subtle but significant assertions of territoriality.<sup>9</sup> The knowledge-power interface remains overwhelmingly tilted in favour of the seven territorial claimants and the two ‘semi-claimants’ (to borrow the phrase used by Alan D. Hemmings<sup>10</sup> to refer to the USA and Russia); with the leading Antarctic powers dictating and driving the Antarctic science-diplomacy agenda and its prioritization. In the case of complex issue-areas like bioprospecting, the agenda of Antarctic science diplomacy is further tempered with the logics of market, commerce and national good (as opposed to public good) and marked by ‘scientific controversies.’<sup>11</sup>

In the second scenario, the agenda before the Antarctic governance remains more or less the same as outlined above under the first scenario. But the perceptions and responses of the ATCMs are radically different in the sense that they are driven more by the principles underlying ‘trusteeship’, imperatives of scientific research as the first-order value in the ATS, and the advice given by a revitalized and more proactive Scientific Committee on Antarctic Research (SCAR).<sup>12</sup>

---

<sup>6</sup> Duncan French and Karen Scott, “Implications of Climate Change for the Polar Regions: Too much, Too little, Too late?”, *Melbourne Journal of International Law* 10, no. 2 (2009): 631-654.

<sup>7</sup> As of 20 August 2011, 48 states have acceded to the Antarctic Treaty. Of these, 28 state parties are consultative parties with a veto right; a status granted after the ‘demonstration’ of ‘substantial scientific interest’ by the new comers and due acknowledgement of the same by other consultative parties. The 20 non-consultative members are welcome to the ATCMs but not entitled to participate in them.

<sup>8</sup> See Shirley V. Scott, “Ingenious and Innocuous? Article IV of the Antarctic Treaty as Imperialism”, *The Polar Journal* 1, no. 1 (2011): 51-62.

<sup>9</sup> Donald R. Rothwell, “Issues and strategies for outer continental shelf claims”, *International Journal of Marine and Coastal Law* 23 (2008): 185–211.

<sup>10</sup> Alan D. Hemmings, “Why did we get an International Space Station before an International Antarctic Station”, *The Polar Journal* 1, no. 1 (2011): 14.

<sup>11</sup> Donald R. Rothwell, ‘The IPY and the Antarctic Treaty System: Reflections 50 Years Later’ in Jessica M. Shadian and Monica Tennberg (eds.) *Legacies and Change in Polar Sciences: Historical, Legal and Political Reflections on the International Polar Year*, (2009), Farnham: Ashgate: 126.

<sup>12</sup> See Julia Robert and Marcus Haward, ‘Antarctic Science, Politics and IPY Legacies’ in Jessica M. Shadian and Monica Tennberg (eds.) *Legacies and Change in Polar Sciences: Historical, Legal and Political Reflections on the International Polar Year*, 2009, Farnham: Ashgate.

Taken together these principles sustain the visualization of Antarctica as global knowledge commons. Hopefully, under this scenario, the pursuit of international cooperation and exchange of information and knowledge are no longer hampered or manipulated by the geopolitical compulsions emanating from highly stubborn, but dubious, claims to territorial sovereignty. We are also likely to witness a process of democratization of governance as integral to the process of a genuine post-colonial engagement with Antarctica<sup>13</sup>. The ATS is characterized by a better informed debate and dialogue within and between its various instruments. Marked by greater transparency and accountability in terms of agenda setting and decision making, an internally reformed and rejuvenated ATS responds far more proactively to new challenges like bioprospecting and climate change through a consensus-based approach. Whereas the ethical dimensions of exceptional ‘polar’ attributes of the Antarctic are retained in order to ensure that obligations under the Antarctic Treaty are collectively met within its area of jurisdiction (i.e. south of the 60 degrees south latitude), the ATCPs proactively engage with relevant regional and global instruments and norms while responding to Antarctic-specific challenges.

There a good deal of scholarly literature around dealings with the origins and evolution of the ATS<sup>14</sup> as well as the strengths and weaknesses of Antarctic governance<sup>15</sup> and I have no intention of engaging with such writings here. The use of term ‘global knowledge commons’ with reference to Antarctica is of a relatively recent origin. Writing on the complex issue-area of bioprospecting in the Antarctic the British economist Heber has equated the notion of ‘public good’ with that of ‘global knowledge commons’, with due emphasis on ‘open’ access to “publically funded and internationally open knowledge”.<sup>16</sup> The underlying geoeconomic rationale here relates to a ‘global public good [including scientific knowledge] with pervasive collective consumption qualities consumed across states (nations)’<sup>17</sup>. According to Heber some of the key defining traits of global common knowledge can be observed in “Antarctica where scientific research has historically been characterized by publicly funded and internationally open knowledge, a classic example of a global public good”.<sup>18</sup> His cautious optimism makes him say that “...any future Antarctic bioprospecting policy regime might well build upon a continuance of the long-established Antarctic scientific tenets of public funding and international

---

<sup>13</sup> Klaus J. Dodds “Post-Colonial Antarctica: An Emerging Engagement,” *Polar Record* 42, no. 220 (2006): 59-70.

<sup>14</sup> See Peter J. Beck, *The International Politics of Antarctica* (Beckenham: Croom Helm, 1986); Sanjay Chaturvedi, *The Polar Regions: A Political Geography* (Chichester: John Wiley & Sons, 1996); R. Bulkeley, “The Political Origins of the Antarctic Treaty”, *Polar Record* 46, no. 236 (2010): 9-22.

<sup>15</sup> See Olav Schram Stokke and Davor Vidas (eds.) *Governing the Antarctic: The Effectiveness and Legitimacy of the Antarctic Treaty System* (Cambridge: Cambridge University Press, 1996); Christopher C. Joyner, *Governing the Frozen Commons: The Antarctic Regime and Environmental Protection* (Columbia, South Carolina: University of South Carolina Press, 1998).

<sup>16</sup> B. P. Herbert, “Bioprospecting in Antarctica: The Search for a Policy Regime”, *Polar Record* 42, no. 221 (2006): 145.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

openness that encompass the concept of the global knowledge commons.”<sup>19</sup> Heber’s comment on much celebrated open *access* (an issue essentially geopolitical in nature) to publically funded and internationally open Antarctic science demands both critical reflection in a geographical-historical perspective and t acknowledgement of the fact that ‘Antarctica as global knowledge commons has to be a project in the making or a work in progress.

As noted by Klaus John Dodds in a seminal contribution, “The role of science and the production of scientific knowledge (especially when funded by national governments and their specialist agencies) have to be considered essential elements in the colonisation of Antarctica. The burgeoning research in cultural histories of science allows a better understanding of the inherent complexities of Antarctic science.”<sup>20</sup> If it was science that was strategically deployed by the colonial powers with polar interests (including commercial-whaling) to turn *Terra Incognita* into a knowable, visible and thereby governable space, then the ‘hidden geographies’ of the field station, laboratory, and research ship also played a major role in deploying science as an aid to statecraft.<sup>21</sup>

Having said that, it was during the International Geophysical Year (1957-58) that the first ever pursuit of international collaborative science by the twelve participating countries was undertaken, but not without getting entangled with the intricacies of the Cold War ideological geopolitics and the geo-strategies aimed at containing the adversaries. It was again during the IGY that the Special (later termed Scientific) Committee on Antarctic Research (SCAR) was created as a non-governmental coordinating body for the international scientific activity. Whereas in the case of the Arctic the Cold War introduced a massive doze of militarization, in Antarctica, among other things, it resulted in a large scale politicization of science as a strategic symbol of international prestige and geopolitical influence. Little surprise therefore, the twelve IGY participating countries (Argentina, Australia, Belgium, Chile, the French Republic, Japan, New Zealand, Norway, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America) were to eventually ‘qualify’ as the original signatories to the 1959 Antarctic Treaty (cited hereafter as the Treaty), after various attempts to exclude the Soviets met with little success and the Indian intervention in the UN during mid-1950s was successfully resisted.<sup>22</sup> That the pursuit of ‘Antarctic science’ by the original twelve had been accorded a permanent and privileged geopolitical benchmark status (both in terms of access to and sharing of Antarctic science-knowledge resource) was quite obvious from the fact that in contrast to the obligation of the acceding states to carry out “substantial scientific research activity” in Antarctica, understood to mean the establishment of scientific stations or the dispatch of scientific expeditions (Article IX of the Treaty), the original signatories were exempted from doing so in perpetuity.<sup>23</sup> Whereas

---

<sup>19</sup> Ibid.

<sup>20</sup> Klaus J. Dodds “Post-Colonial Antarctica: An Emerging Engagement,” *Polar Record* 42, no. 220 (2006): 62.

<sup>21</sup> Ibid. See also D. Livingstone, *Putting science in its place* (Chicago: University of Chicago Press: 2003)

<sup>22</sup> A. Howkins, “Defending Polar Empire: Opposition to India’s Proposal to Raise the ‘Antarctic Question’ at the United Nations in 1956”, *Polar Record* 44, no. 1 (2006): 35-44.

<sup>23</sup> Sanjay Chaturvedi, *The Polar Regions: A Political Geography*, Chichester: John Wiley & Sons, 1996.

Belgium, as an original signatory, could get away from relative scientific inaction for considerable time, the one and only exception to the science-driven stringent criterion of getting a geopolitically meaningful place in the ATS with a right to veto turned out to be Netherlands. Apparently restricted as well as restricting membership criterion of the Treaty continues to provoke comments from both its supporters and critics. In the era of multiscale climate change and scarcities the criteria determining the inside/outside of those responsible/accountable for 'polar' governance will demand and deserve the close attention of both the Arctic Council and the ATS; perhaps sooner than later.

The Treaty epitomized a rather paradoxical normative-pragmatic character of the then science-geopolitics interface. In the preamble to the Treaty the original twelve committed themselves to a number of principles that would easily qualify as the normative building blocks for the epistemic architecture of a global knowledge commons for Antarctica. The preamble recognized that "it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord"; acknowledged "the substantial contributions to scientific knowledge resulting from international cooperation in scientific investigation in Antarctica; and underlined the conviction that "the establishment of a firm foundation for the continuation and development of such cooperation on the basis of freedom of scientific investigation in Antarctica as applied during the International Geophysical Year accords with the interests of science and the progress of all mankind."

Apparently the architects of the Treaty, despite being severely constrained by the Cold War considerations, had been successful in putting together some of the basic building blocks of an epistemic edifice of a global knowledge commons. Whether the efforts aimed at the Treaty was dictated more by geopolitical-strategic considerations and less by common-public good norms should not deter us from appreciating that both the intended and the *unintended effects* (and both remain important in my view) of the Treaty provisions would create conducive conditions for international cooperation and scientific research, however narrow and limited it might have been initially. For nearly two decades (1950s and 1960s), the dominant image of Antarctica was that of a 'continent of science' and the only two countries that acceded to the Treaty were Poland (which became a consultative member in 1977) and Romania (still an ordinary member) for considerations that were perhaps as much ideological as they were scientific in the context of the Cold War.

It was in the context of such idealized, science-driven visualizations of Antarctica and its future management that SCAR in its 1961 recommendations on 'measures to promote conservation of nature in the Antarctic' for the area under the Treaty jurisdiction, outlined some of the guiding principles of global knowledge commons. Antarctica was described as a 'world heritage' and "one of the most scientifically important biogeographical regions of the world". The above assertion can also be interpreted as the desire on the part of still nascent and fuzzy 'Antarctic science community', predominantly western in its origins and orientation, to claim a degree of autonomy in the face of territorializing and partitioning logic of sovereignty claims. The then Secretary of SCAR G. De Q Robin was quick to point out as early as 1961 that the tragedy of global *knowledge commons* is imminent if "... all forms of exploitation" are not discouraged "until adequate scientific data are available". In my view, this insight is still relevant with regard to both Antarctica and the Arctic. Despite outstanding scientific research pursued over the past

five decades and more as well as the achievements of the Third International Polar Year (IPY), from March 2007 to 1 March 2009, the fact remains that our knowledge of the Antarctic (or for that matter the Arctic) is less than adequate.

It is worth recalling that the broader global context in which the Treaty was negotiated was marked on the one hand by the Cold War politicking and by decolonization waves during 1950s and 1960s on the other. And yet, as pointed out by Klaus John Dodds, “The Antarctic Treaty has escaped a critical scrutiny with regards to the manner in which it ‘rewarded’ colonial occupation and annexation”.<sup>24</sup> Whereas Shirley V. Scott would argue that, “...the Antarctic Treaty could be viewed as not simply freezing the colonial claims of others, but as an act of imperialism on the part of the US. The US has made no territorial claims in Antarctica but by article IV would be allowed to go anywhere on the continent and use the continent for all but non-peaceful activities.”<sup>25</sup> The disputed ownership of the icy continent continues to assert itself and cast its shadow on every important facet of Antarctic governance.

It was during 1970s that the notion of Antarctica as the global knowledge commons became deeply implicated in resource geopolitics. Aply assisted by the findings of extensive research conducted by geologists of various national programs, Antarctica was discursively transformed into a ‘continent of minerals’. The dynamics and dilemmas of applied earth sciences had begun to unravel. The Antarctic powers had been successful in the past in keeping Antarctica off the agenda of UNCLOS III and outside the purview of the Common Heritage of Mankind (CHM) principle. The saga of the rise and demise of the 1988 Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), and the loss and restoration of consensus in the ATS on the issue of mining, against the backdrop of Malaysia lead campaign in the UN on the ‘Question of Antarctica’, are well documented and reveal the vulnerability of Antarctica as the global knowledge commons to the lure of resource geopolitics in the era of climate change, burgeoning populations and scarcities.

In comparison to the first two decades of the existence of the Treaty, when only two countries acceded to it (i.e. Poland in 1961 and Netherlands in 1967), as many as thirteen countries joined during 1970s and 1980s and were granted the consultative status in due course of time (Brazil 1975, Bulgaria 1978, China 1983, Ecuador 1987, Finland 1984, Germany 1979, India 1983, Italy 1981, Republic of Korea 1976, Peru 1981, Spain 1982, Sweden 1984 and Uruguay 1980) followed by Ukraine in 1992.<sup>26</sup> It is to state the obvious perhaps that resource geopolitics and

---

<sup>24</sup> Klaus J. Dodds “Post-Colonial Antarctica: An Emerging Engagement,” *Polar Record* 42, no. 220 (2006): 63.

<sup>25</sup> See Shirley V. Scott, “Ingenious and Innocuous? Article IV of the Antarctic Treaty as Imperialism”, *The Polar Journal* 1, no. 1 (2011): 58.

<sup>26</sup> The original Signatories to the Treaty are the twelve countries that were active in Antarctica during the International Geophysical Year of 1957-58 and then accepted the invitation of the Government of the United States of America to participate in the diplomatic conference at which the Treaty was negotiated in Washington in 1959. These Parties have the right to participate in the meetings provided for in Article IX of the Treaty (Antarctic Treaty Consultative Meetings, ATCM). Since 1959, thirty-six other countries have acceded to the Treaty. According to Art. IX.2, they are entitled to participate in the Consultative Meetings during such times as they demonstrate their interest in Antarctica by “conducting substantial research activity there”. Sixteen of the acceding countries have had their activities in Antarctica

related diplomatic posturing of the major Antarctic powers had acted as one of the major catalysts behind the surge in Treaty membership during the 1970s and 80s. At the same time, the arrival and subsequent assertion of new state and non-state actors (e.g. ASOC and IAATO) on the Antarctic scene did raise the hope in some quarters that knowledge production *on* and *about* the Antarctic would no longer be the monopoly of a few. Whether such a hope stands realized (or belied) needs further examination.

### *Concluding Reflections*

Visualization of Antarctica as the global knowledge commons has received a further fillip under the 1991 Protocol on Environmental Protection to the Antarctic Treaty, which was signed in Madrid in October 1991 and entered into force in 1998. The Protocol designates Antarctica as a “*natural reserve devoted to peace and science*” (Art. 2). Article 3 of the Environment Protocol introduces basic principles applicable to human activities in Antarctica and under Article 7 all activities relating to Antarctic mineral resources are prohibited, with the sole exception of scientific research. Until 2048, it is only through the unanimous agreement of all Consultative Parties to the Antarctic Treaty that Protocol can be modified. It is worth noting that the prohibition on mineral resource activities cannot be lifted in a vacuum and in the absence of a binding legal regime on Antarctic mineral resource activities (Art. 25.5). The Protocol has six Annexes.<sup>27</sup> The Madrid Protocol has established the Committee for Environmental Protection (CEP); an expert advisory body with the mandate to provide advice and formulate recommendations to the ATCM in connection with the implementation of the Environment Protocol. The CEP meets every year in conjunction with the ATCM, and along with CCAMLR, (which meets every year in Hobart, Australia), is yet another important site for knowledge production. The immediate and urgent task of putting into place various domestic legislations related to the Protocol and its annexes (and difficulties that some of the ATCPs might be experiencing in this regard) underscores the point that the meaning and scope of sharing Antarctica as global knowledge commons cannot (and should not) be restricted to natural sciences. In other words, the imperative of exchange of information and knowledge in matters Antarctic should be further expanded to the domain of social sciences (especially international law) and humanities. A logical extension of visualizing Antarctica as global knowledge commons is the pursuit and promotion of Antarctic/Polar (ideally bi-polar) studies by the Antarctic Treaty member states; some of which also happen to the member states of the Arctic Council.

Much needed visualization of Antarctica as the global knowledge commons also compels us to pay a closer attention to the process of (and politics behind) knowledge production in the annual meetings of the ATCPs. Who are the major agenda setters for these meetings? How are the key issues framed and presented on these agendas and by whom? What is the nature and composition

---

recognized according to this provision, and consequently there are now twenty-eight Consultative Parties in all. The other twenty Non-Consultative Parties are invited to attend the Consultative Meetings but do not participate in the decision-making.

<sup>27</sup> Annexes I to IV were adopted in 1991 together with the Protocol and entered into force in 1998. Annex V on *Area Protection and Management* was adopted separately by the 16<sup>th</sup> ATCM in 1991 and entered into force in 2002. Annex VI on *Liability Arising from Environmental Emergencies* was adopted by the 28<sup>th</sup> ATCM in Stockholm in 2005 and will enter into force once approved by all Consultative Parties.

of various national delegations? What is nature and extent of participation in the ATCMs by the non-state observers especially the Association of Southern Ocean Coalition (ASOC) and International Association of Antarctic Tour Operators (IAATO)? Are there ‘silent’ national delegations at these meetings? If so, what does their silence speak and what are its implications for ‘consensus’ based decision making?

The vital task of sustaining the existing strands of Antarctica as global knowledge commons needs mutual trust, which in turn will facilitate not only free and frank exchange of information and knowledge among the Antarctic Treaty parties but also burden sharing. As the 21<sup>st</sup> century unfolds, one of the major future challenges that the Antarctic governance will face in my view relates to perceptions, representations and interpretations of Asia’s rise with regard to the ATS. The manner in which the intentions or motives of rising Asian powers, especially India and China, will be approached and interpreted by others in the ATS (or in the Arctic Council) will be of critical importance in further democratization of Antarctic governance.

Alan D. Hemmings, in his thought provoking contribution to the maiden issue of newly launched *The Polar Journal* (Routledge), titled, “Why did we get an International Space Station before an International Antarctic Station”, points out that, “...there is a very limited case history of joint Antarctic stations, both pre- and post-Antarctic Treaty, and drawing general lessons from it is difficult”<sup>28</sup> and argues that, “a transition from an Antarctic world of national Antarctic programs to one of a more integrated trans-national science, with a corresponding multilateral infrastructure may be the harbinger of a new dispensation less amenable to territorial aspirations there.”<sup>29</sup> The proverbial billion dollar question then becomes: How can the contentious assertions of territorial sovereignty on Antarctica, firmly anchored in state-centric geopolitics of mastering space, be transformed into universally acceptable norms of trusteeship as the fundamental principles of Antarctic governance in the best interests of entire humankind?

Looking ahead, the notion of Antarctica as global knowledge commons as essentially non-territorial, epistemic visualization of the southern polar bio-geographical region, needs to be re-contextualized in terms of what Karen T. Litfin has described as ‘planetary politics’, “the key dynamics of which are well illustrated in the case of ozone depletion and climate change, namely the complexity of local-global linkages; the importance of science and global civil society; the necessity and inherent difficulty of North-South cooperation; intergenerational time horizons and a holistic perspective; and the problematic nature of sovereignty as a framework for addressing problems of global ecology.”<sup>30</sup> According to Litfin, “science plays a crucial, yet somewhat ambiguous, role in planetary politics, setting the agenda but never determining the outcomes. Science both renders the invisible visible and extends the temporal horizons of policy actors.”<sup>31</sup> The scale at which we should be approaching Antarctica (or for that matter the Arctic)

---

<sup>28</sup> Alan D. Hemmings, “Why did we get an International Space Station before an International Antarctic Station”, *The Polar Journal* 1, no. 1 (2011): 12.

<sup>29</sup> *Ibid.* 13.

<sup>30</sup> Karen T. Litfin ‘Planetary Politics’ in John Agnew, Katharyne Mitchell and Gerard Toal (eds.) *A Companion to Political Geography*, London: Blackwell Publishing, 2007, p. 476.

<sup>31</sup> *Ibid.*



in the context of planetary politics has to be the unorthodox scale of the new geological period called ‘Anthropocene’ by Paul Crutzen.<sup>32</sup> As Simon Dalby puts it so thoughtfully, “the sheer scale of human activities means that we are living in increasingly artificial circumstances in a biosphere that we are changing”.<sup>33</sup> A radical revision of the conventional state-centric understandings of sovereignty and security in an increasingly ‘warming’ world is overdue and the two polar regions (despite obvious differences between them) provide an excellent interdisciplinary laboratory to revisit and rethink the concepts of scale, space and power in the era of profound transformations and transitions. It is highly desirable and most timely to envisage a future for Antarctica and its governance based on the principles of global knowledge commons, and it is in this direction that the ATS should continue to invent and reinvent itself.

---

<sup>32</sup> Paul Crutzen, “Geology of Mankind”, *Nature* 415 (2002): 23.

<sup>33</sup> Simon Dalby, *Security and Environmental Change*, Polity Press, Cambridge, 2009.