

## On thick ice: scientific internationalism and Antarctic affairs, 1957–1980

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This paper focuses on the role played by scientific internationalism in Antarctica during the two decades that followed the signing and ratification of the Antarctic Treaty in 1961. The paper shows that the Treaty was a response to the threat to the ‘free world’ represented by the installation of Soviet bases in Antarctica. Scientific internationalism was used as a diplomatic weapon to respond to that threat. In the 1960s, the development of international cooperative research allowed the USA, the largest logistic operator in Antarctica, to gain control of local affairs by penetrating into strategic areas, influencing the policies of other nations, and defusing existing tensions between them. This was the case with the International Antarctic Glaciological Project, a multilateral glaciological and geological research effort in East Antarctica. In the 1970s a far more complex political situation developed, defined by changes in the US Antarctic policy and the rise of military regimes in South American countries.

**Keywords:** Antarctica; Antarctic Treaty; Cold War; geopolitics; scientific internationalism

In 1973 the collection *Frozen Future – A Prophetic Report from Antarctica* emphasized the role played by international crews of scientists in the frozen continent as protagonists of a ‘new experiment of civilization’; an experiment consisting of living on a continent ‘without war, without cold war, without crime, without pollution, without national rivalries, without secret states’.<sup>1</sup> The legislation that was seen to have achieved this icy utopia was the Antarctic Treaty (AT). The Treaty, signed in 1959 by the representatives of 12 nations with active scientific programs in Antarctica, had allowed the establishment of a new international regime that privileged scientific collaboration over political rivalries. Antarctica had become a natural laboratory where polar research could reveal key aspects of the Earth’s history and climate. It was also a political laboratory, where scientific cooperation would help maintain peace on the continent.

However, recently released and previously classified government documents have tempered the idea of the Antarctic as a scientific utopia. In fact, they reveal traditional diplomatic rows between occupying states eager to protect their imperialistic ambitions, rather than attempts to develop experimental and idealistic systems of governance. These frictions shed light on Antarctica’s geopolitical significance. For instance, controlling its surrounding oceans had military and commercial strategic repercussions, given the proximity of the Drake Passage and the Cape of Good Hope – the only alternative to the Panama Canal and the Suez Canal respectively – and the availability of whales and krill. Acquiring territory on the continent itself also offered the possibility of obtaining natural resources such as oil and minerals.<sup>2</sup> Moreover, during the Cold War period, new nuclear theatres were envisioned that made Antarctica’s neighboring states, such as Australia, Argentina and South Africa,

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extremely sensitive to the presence of Soviet vessels and bases there. Even when the AT ruled out the placement of nuclear installations in the Antarctic, the surrounding seas continued to be patrolled by nuclear submarines, further confirming their strategic value.<sup>3</sup> Therefore, the AT did not curtail traditional geopolitical ambitions; rather it translated them into scientific relations. Indeed, from the late 1950s onwards scientific personnel became notable actors in the governance of Antarctica. The coordination of and collaboration between national teams in international research projects acquired diplomatic significance and helped place scientific internationalism at the center of Antarctic governance; defining alliances between states and becoming a tool of foreign policy.<sup>4</sup>

The interplay of science and diplomacy occupies recent studies devoted to the history of twentieth century science. For instance, Ronald Doel, Kristine Harper and Clark Miller have considered how important nuclear physics and geophysics have been in translating US foreign policy into research programs from before World War II to the Cold War period.<sup>5</sup> John Krige has investigated aspects of post-war scientific cooperation between the USA and Western European scientific agencies, showing how joint projects were used to strengthen (and co-produce) US hegemony in Europe by spreading American values.<sup>6</sup> In relation to Antarctica, Aant Elzinga has introduced the notion of ‘epistemic regime’ to explain how heavily the Antarctic Treaty System (ATS) relied on scientific internationalism.<sup>7</sup> Of course, it is not just historians who have developed an interest in the role played by science as a tool of international diplomacy. Work in the fields of political geography, law and international affairs has focused on international regimes and emphasized how scientific cooperation has set the conditions for going beyond traditional state relations and envisaging a new ‘global commons.’<sup>8</sup> In particular, scholars have suggested that Antarctica is an archetype in this regard – a space set aside for peaceful science by a condominium of nation-states.<sup>9</sup> Its lack of importance to Cold War strategies (in marked contrast to the Arctic) facilitated Antarctica’s ‘apolitical’ geography. For example Peter J. Beck has claimed that:

Within the wider international context, Antarctica remains still a relatively minor issue ... for most Consultative Parties ... [W]ith the possible exception of Argentina and Chile, it is arguable whether Antarctica constitutes anything other than a peripheral question exerting minimal impact upon international relationships.<sup>10</sup>

This paper presents new historical evidence that opens this portrayal up to question.<sup>11</sup> We argue that placing scientific internationalism at the center of Antarctic affairs was a response to a specific threat represented by the presence of Soviet bases in Antarctica. As early as 1957, diplomats of four nations – the USA, Australia, New Zealand and Britain – secretly engineered a new international regime centered on science in an attempt to avoid the militarization of the South Pole by those, the Soviets especially, who might threaten the ‘free world powers’ from there. The ‘free world,’ these diplomats reasoned, only stood to lose from the militarization of Antarctica: while Russian bases in Antarctica could represent a menace to Australia, Soviet interests were not vulnerable to the strategic positioning of Australian bases. Co-existence with the USSR was seen to represent a better option. Moreover, the cultivation of international scientific projects represented a viable diplomatic instrument to pull together the sometimes striking differences between nations who had an interest in Antarctic affairs.

We also want to draw attention to the ways in which the USA gained leadership in Antarctic affairs by mobilizing its scientific and technological might. Science at the poles, just as in space science, demands hefty financial and technological resources. By stressing the urgency of scientific reconnaissance in Antarctica, the Polar Office of the US National

Science Foundation (NSF) convinced other Antarctic occupants to participate in research that the USA would buttress (and which would otherwise remain unstudied). By using logistical support as a lever, US science administrators ensured that they played a leading role in the organization of Antarctic affairs. This helped the USA to strengthen its presence in Antarctica; to shape political alliances; enabled it to penetrate into strategic areas; and to set the right conditions for the AT to function by smoothing diplomatic relations between nations with an interest in the region.<sup>12</sup>

The operation of US scientific diplomacy was particularly apparent in the related fields of glaciology and geophysics. Knowledge of the characteristics of the Antarctic icesheet and the underlying bedrock represented knowledge that was vital to any future attempt to explore and exploit the South Pole. For instance, radio-echo sounding (the use of radio pulses to gain information on glaciological structures and geological formations) catalyzed the interest of scientists and diplomats alike and was used as a bargaining tool in open and secret talks regarding international projects.<sup>13</sup> Therefore, while scientists were engaged in assessing the thickness of the Antarctic ice-sheet, diplomats metaphorically walked on a much thinner surface to design an Antarctic policy that would be congenial to their various governments' ambitions.

### **A desert owned by too many**

As the most isolated and hostile place on earth and the only continent with no indigenous human population, it is perhaps a paradox that over the last century portions of this frozen desert have been fought over by various nations. Up until the 1960s seven countries (Argentina, Chile, Britain, France, Australia, New Zealand and South Africa) put before international political organizations territorial claims to portions of Antarctica, which partitioned the continent into pie-shaped sectors that radiated out from the South Pole (see Figure 1). Three of these states – Argentina, Chile and Britain – had sectoral claims that overlapped, which led to problematic diplomatic relations in the Antarctic Peninsula. These quarrels also played a role in long-standing disputes between Britain and Argentina over the Southern Atlantic islands such as the Falklands.<sup>14</sup>

From the end of World War II, claimant states in Antarctica acquired a powerful new neighbor. The USA had not put forward claims over any portion of Antarctica and had refused to recognize those put forward by others. Rather, US interests in Antarctica were asserted militarily by organizing expeditions on the continent through its Navy. The US Navy's *Operation Highjump* (1946–47) was followed by *Operation Windmill* (1947–48) and several other missions that transferred personnel, materials and transportation to Antarctic outposts. The USA did not pursue its geopolitical interests in the region by claiming specific sectors as this would have meant leaving other strategic areas under the exclusive control of other countries. Instead, its activities were part of a broader effort to ensure a panoptical control over the whole continent. From the late 1940s US diplomats worked towards a political solution for Antarctica that would hasten this end. In 1948 the USA posited the establishment of an international trusteeship that would include the seven claimant states and themselves. This proposal met with resistance. The Australian Prime Minister Robert Menzies was 'the least inclined to agree to any new international regime for Antarctica because of the implications for Australian sovereignty in the region.'<sup>15</sup>

The trusteeship proposal did not please the Soviets either. Coinciding with the Berlin blockade, the US scheme did not include the USSR, who asserted their own right to the continent. A resolution in February 1949 by the All-Soviet Geographical Society stressed that in the light of the early explorations by the Russian Fabian G. Von Bellingshausen,

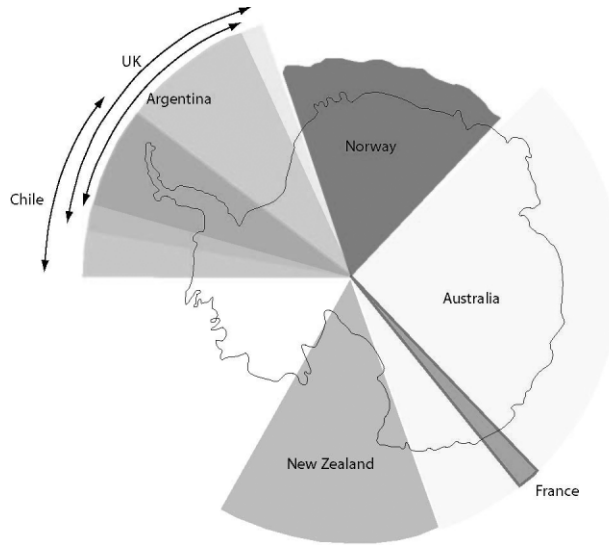


Figure 1. Distribution of the seven territorial claims in Antarctica. Note that the USA and Russia do not make a specific claim.

the USSR should have had a say in future partition or joint administration of the continent. In June 1950, the Soviet government addressed a memorandum to the Antarctic Consultative Parties (those nations that had been consulted by the USA in 1948) stressing this point.<sup>16</sup>

By the 1950s, Antarctica had become something of a no-man's land – no international recognition was given to existing sovereignty claims, so states were free to place bases anywhere. This situation was solved thanks to the establishment of new forms of international scientific cooperation, which in turn highlighted to leading diplomats the possibility of using scientific internationalism in the management of Antarctic affairs. In 1957–58 the International Geophysical Year (IGY) celebrated the 75th and 25th anniversaries of the first and second International Polar Years (IPY) respectively. When in 1950 the World Meteorological Organization (WMO) planned the organization of a third polar year, US science administrators, including the influential geophysicist Lloyd Berkner, worked to widen its scope. The involvement of the International Council of Scientific Unions (ICSU) was instrumental in broadening the organization of the event as well as establishing specific programs in many countries across the world through its IGY Special Committee (CSAGI). The IGY was advertised as a venture in international scientific cooperation. In this way it was also meant to overcome any ideological scuffles and diplomatic bickering by replacing international confrontation with scientific and technological prowess. It was argued that science, in contrast with politics, knew no national boundaries or interests.<sup>17</sup>

Antarctica featured heavily in the IGY plans, as it was chosen as the location of a number of coordinated studies dealing with glaciology, meteorology and the study of the ionosphere. Preparations for the IGY presented the superpowers and claimant states with an opportunity to establish more bases in Antarctica. In 1955 the US Navy's *Operation Deep Freeze* was set up to provide logistical support for US IGY efforts in Antarctica (although it did continue after the event and became used as a general term for US operations on the continent). Its annual missions led to the establishment of US bases such as McMurdo (1955), the Amundsen–Scott South Pole Station (1956) and Byrd (1957).<sup>18</sup> In 1955, the

Soviet Antarctic Expedition (SAE) was created and planned the establishment of three bases in Antarctica, two of which – Mirny and Vostok – were set up in 1956 and 1957 respectively.<sup>19</sup>

Although the IGY was a pioneering event in the history of scientific internationalism, the Cold War continued to shape the political geography of Antarctica. By establishing the Amundsen–Scott base, the USA claimed the symbolic South Pole, thus leaving the Soviets the much less prestigious Pole of Relative Inaccessibility, where Vostok was based.<sup>20</sup> Strategic control was also important, with the USA and the USSR located research stations right across the Antarctic continent. Their lack of consideration of boundaries set previously by claimant states caused some consternation as the latter tended to remain within the limits of their own sectors.<sup>21</sup>

The IGY paved the way for further integration of discussion and planning of Antarctic science at the international level, which took place through the ICSU Special Committee on Antarctic Research (SCAR). The SCAR (eventually renamed a ‘Scientific’ rather than ‘Special’ Committee) became the international organization devoted solely to the promotion, planning and coordination of research in the Antarctic. Twelve countries, including the claimant states, the non-claimant superpowers, Germany, Belgium and Japan made contributions to its initial budget.

Because of the IGY and the SCAR, there was increasing appetite to make international cooperative science central to the definition of Antarctica’s future. On 1 December 1959, the SCAR operating countries signed the Antarctic Treaty (AT), which entered into force on 23 June 1961. The Treaty, the result of painstaking negotiations that took place between October and December 1959 in Washington DC, was an agreement to set Antarctica aside for peaceful purposes and particularly for science, while additional claims to portions of Antarctic territory were forestalled.<sup>22</sup> The nature of the Antarctic Treaty as an agreement setting the frozen continent aside for science has been discussed elsewhere.<sup>23</sup> However, the diplomatic, political and strategic motives behind it are, by and large, just beginning to be explored, especially in light of the release of previously classified government documents. The following section considers some of these documents, which show that decisions to put science at the forefront of Antarctic affairs emerged prior to 1959 and not just in an attempt to celebrate the virtues of scientific internationalism.

### **A secret meeting that envisioned the Antarctic Treaty**

On 7–8 October 1957, when the IGY was in full swing, a secret meeting was organized at the US State Department in Washington DC, including high-ranking officials from the Foreign Offices of Britain, Australia and New Zealand. One of the points on the meeting’s agenda was Australia’s growing concern over the establishment of Soviet bases in Australian Antarctic Territory. It was not just sovereignty at stake – the Australians believed that the bases could be used as launch sites for nuclear weaponry.

The news that Mirny, the first Soviet base in Antarctica, had been established during preparatory work for the IGY created anxiety in Canberra. Australia’s Liberal government, led by Prime Minister Robert Menzies was avowedly anti-communist and believed that the Russians were using scientific research to conceal their true political and military ambitions.<sup>24</sup> On 5 August 1956 the Sydney *Sun-Herald* speculated that the base was being used as a cover for missile launchers targeting Australia. Its Minister of External Affairs, Richard Casey, registered concerns over Soviet plans and discussed them with the US Secretary of State, John Foster Dulles.<sup>25</sup> Suspicion and anxiety grew two years later with the planned establishment of other bases in the Australian sector, Pionerskaya, Vostok and

Komsomolskaya; two of which had the potential to stage aircraft. These suspicions reflected Australia's perception of the frozen continent at the time. A 'strategic use' of Antarctica had been envisioned by government officials since the end of World War II, when it was noted that the continent was the nearest landmass to Australian centers of population, and that its falling into the hands of a hostile power may represent a threat if launching sites were placed there (see Figure 2).<sup>26</sup>

The timing of the secret meeting on 7–8 October at the US State Department was remarkable because the Australian government had just strengthened its alliance with the USA while renouncing a nuclear deterrent.<sup>27</sup> The meeting also coincided with two other important diplomatic events: on 4 October a joint US–Australian–New Zealand defense meeting<sup>28</sup> took place in Washington DC and five days later, also in the US federal capital, a Commonwealth meeting was planned. The latter anticipated the visit of British Prime Minister Harold Macmillan to the USA. Notably, during the visit Dulles emphasized the need 'to tie together not just two nations, not just the U.S. and the Commonwealth nations, but all free nations.'<sup>29</sup>



Figure 2. Antarctica and the Southern Ocean that surrounds it. Courtesy of Antarctica New Zealand (© Antarctica NZ Pictorial Collection: RSRSOER, 2001).

The convenor of the Antarctic meeting was the US Department of State's adviser on Antarctic affairs, Paul C. Daniels, a retired US ambassador who had worked in South American states and was one of the AT architects (see Figure 3).<sup>30</sup> However, years later, John Heap, a leading British diplomat and Antarctic scientist, claimed that it was the British Foreign Office that had been responsible for organizing the meeting.<sup>31</sup> The fact that the British delegation, in contrast to the other parties, presented a document setting out a proposal for an international regime in Antarctica seems to confirm this claim. The British delegation was led by the Viscount Samuel Hood, the Minister of the British Embassy in Washington DC. Casey, Australia's Minister of External Affairs did not attend the meeting, but his country was represented by Casey's assistant, the Secretary of the Department of External Affairs (DEA), Arthur Tange. G.R. Laking, New Zealand's Deputy Secretary of External Affairs was also present.<sup>32</sup>

Just four days before the meeting, the launch of the first artificial satellite, Sputnik, demonstrated emphatically Soviet technological prowess and prompted concerns among the meeting's participants about the role Russia was going to play in the southern hemisphere. The representatives of the four nations acknowledged that Russia was going to stay in the



Figure 3. Paul C. Daniels signing the Antarctic Treaty. Standing nearby is Herman Phleger, the chairman of the US delegation at the Washington DC conference. Photo Courtesy of the Bancroft Library, University of California, Berkeley (from Herman Phleger's papers, BANC MSS 78/179).

Antarctic and agreed that its presence could be a threat to Australia and New Zealand. Meanwhile, they discussed the possibility of placing Antarctica ‘out of the “cold war”’ by mobilizing international scientific co-operation:

The present current of opinion in many countries, fomented partly by public interest in the IGY, is favourable to international co-operation in the Antarctic. The cold war has not yet been extended to the Antarctic. This favourable climate of opinion and absence of conflict may not last for long after the end of the IGY and therefore the present moment offers an opportunity which may not recur for considering a change in the *status quo*.<sup>33</sup>

The UK document went on to suggest the possibility for claimant states to retain territorial sovereignty in name, but in practice to hand the continent’s governance over to an international governing body.

Australia’s position was more pragmatic. Tange stressed the need to eliminate any Russian military threats towards Australia and the ‘free world,’ at the same time as he expressed a desire to cooperate with friendly powers on scientific activities, especially with regards to meteorological observations. While Tange understood that scientific cooperation could become an important element in an international solution to the Antarctic question, he also stressed that if this involved unacceptable concessions then the Australian Government preferred the *status quo*.<sup>34</sup>

Records of the meeting suggest that US diplomats considered the option of putting forward territorial claims in the South Pole; however, Daniels reasoned that although ‘traditionally’ the USA ‘does not take lightly the obligation to protect areas under its sovereignty,’ any territorial claim consistent with the present US occupation ‘would involve very large appropriations’ and thus ‘would conflict with those of other friendly governments.’<sup>35</sup> Virtually, all the states who had a stake in Antarctica shared defense and military alliances with the USA (Britain, Norway and France in the NATO; Australia and New Zealand in the Southeast Asia Treaty Organisation (SEATO) and ANZUS; Chile and Argentina in the Inter-American Reciprocal Assistance Alliance). US diplomats feared that by claiming a portion of Antarctic land, they could jeopardize relations with allies, and were thus alert to solutions that would allow them to maintain their position in the Antarctic without causing frictions.

Daniels stressed that Russian activities had added a ‘greater degree of urgency’ to the finding of a solution to the Antarctic problem and claimed that the ‘basic objective’ was to prevent Antarctica from being used as a base from which to threaten free world powers.<sup>36</sup> Australia, New Zealand and Britain’s representatives conveyed the opinion that any project centered on demilitarization needed Russian cooperation to be accomplished. Daniels indicated the need to seek ‘US military opinion’ on this point.<sup>37</sup>

The meeting was concluded by indicating as common objectives of Antarctic policy the demilitarization of the continent; the encouragement of scientific research; and the possibility of exploiting its resources. Both the UK document and the meeting’s summary indicate that a procedure was also outlined to make it possible for the four countries to obtain success in activating a dialogue with other Antarctic occupants. However, as for a timeline, there was confusion. Tange indicated the need to wait for the conclusion of the IGY, in December 1958. Hood observed that waiting so long may have led to the subject of Antarctica being raised again at the UN General Assembly, as two years earlier the Indian delegate had attempted to place an item on this issue in the meeting’s agenda. If these matters were discussed at the UN, the chances of deciding Antarctica’s future in consultation with only a few countries were greatly reduced.<sup>38</sup> The diplomats all agreed that in any case it was necessary to wait for Argentina’s elections in February 1958. In the meantime it was



agreed that US diplomats would exert some pressure on Chile and Argentina in order to make them accept the invitation for a meeting on Antarctic affairs. The UK document indicated the need to act before summer 1958 and all agreed to keep the resolutions secret until then.<sup>39</sup>

On 2 May 1958 the US ambassadors of 11 countries (seven claimant states plus Japan, Belgium, Germany and Russia) delivered to their foreign ministers a letter inviting them to participate in a conference on Antarctica. The letter referred to the 'splendid example of international cooperation' set by the IGY and its importance for mankind. The US letter then indicated the need to find a political solution for Antarctica that would allow 'a continuation of the international scientific cooperation which is being carried out so successfully during the IGY.'<sup>40</sup> No mention was made of the ulterior motives for doing so.

The AT eventually ratified points that the secret meeting and the secret UK document had already envisioned, especially the need for inspections. The USSR put up no resistance to article VII of the Treaty, which reserved unlimited rights of inspection of installations, ships or aircraft by any other signatory nation.<sup>41</sup> Indeed, this decision was consistent with Nikita Khrushchev's policy of strengthening the Soviet nuclear capability and at the same time favouring compromises in the management of international affairs.<sup>42</sup> Notably, the content of Article VII was very similar to the Open Sky agreement of 1957, which would have set freedom of inspections in the Arctic had not the USSR rejected it because it threatened its 'national security.'<sup>43</sup> The USSR was going to stay in Antarctica, wanted to participate in its governance and was willing to compromise to do so.

Thus, the establishment of an international regime in Antarctica had actually been outlined two years before the Washington DC conference in a secret meeting involving four allied nations, who believed a plan for the demilitarization of Antarctica to be more effective than one of Russia's containment in the area.<sup>44</sup> It was of course a form of containment nonetheless; a policy that 'called for "orderly progress" toward solving territorial problems in a way that would keep the United States and friendly nations in control, providing [the Russians] (only) freedom to explore, do scientific research, and access natural resources.'<sup>45</sup> It was this plan that set the conditions for international scientific cooperation in the aftermath of the AT.

### **International scientific cooperation and the US presence in Antarctica**

The AT regime worked in theory as a good compromise between claimant and non-claimant states. On the ground, perception of its legislative significance varied enormously. As the Norwegian law analyst Finn Sollie put it, the AT was 'a type of constructive evasion based on a proposal for a *modus vivendi*.' Its convoluted wording indicated that the signatory states agreed chiefly on their disagreements. Nothing in the Treaty implied a renunciation of existing claims or asserted rights; a diminution of any basis for claims; or a prejudice on the position of any of the parties with regard to the recognition or non-recognition of claims.<sup>46</sup> Given the degree to which claimant states defended their sovereignty, the AT maintained a fragile regime.

As the most important logistic operator in the Antarctic, the USA used its technological superiority to curb national feelings and assert its domination over the continent. As Harlan Cleveland, Assistant Secretary of State for international affairs, put it in 1965:

For the United States, as the nation with the greatest capability to mount and support scientific investigations in Antarctica, this Treaty was clearly better than limiting ourselves to one slice of a much-divided pie. As things stand, we are at liberty to investigate

anywhere, build anywhere, fly anywhere, traverse anywhere in this vast and still mysterious south land.<sup>47</sup>

During the 1960s the USA used international scientific cooperation to strengthen its presence in Antarctica as well as that of its alliances. This meant downplaying territorial claims put forward by others, as well as using financial and technological resources to establish collaborations with scientific teams from other nations.

The US Antarctic Research Program developed enormously through the 1960s as the USA invested twice as much as the USSR – and much more than any other Antarctic occupant – in research and logistics. This investment in Antarctic science was in line with US financial and logistical support for the physical earth sciences more generally in the early years of the Cold War, which were assimilated into the highest levels of national security and foreign policy planning.<sup>48</sup> As the US President Lyndon Johnson (who served from 1963 to 1969) indicated, one of the key objectives of US policy in Antarctica was to: ‘foster cooperative research for the solution of worldwide and regional problems including environmental monitoring and prediction and assessment of resources.’<sup>49</sup> Since 1961 the newly established Office of Antarctic Programs (OAP) at the US National Science Foundation (NSF) effectively translated US geopolitical interests in Antarctica into funded research. In doing so it took over from the US Navy, which had been responsible for *Deep Freeze* until then.<sup>50</sup>

Two other overlapping issues motivated the expansion of the US Antarctic program. First, the investment was part of a scientific ‘arms-race’ with the Soviet Union, with both governments investing in projects so as to demonstrate, in the post-Sputnik era, their scientific and technical superiority.<sup>51</sup> Second, the development of scientist exchange programs, especially with the Soviet Union, facilitated intelligence gathering of others’ research operations beyond the official system of inspection put forward by the AT. From the early 1960s Soviet researchers were invited to US stations and vice versa.<sup>52</sup>

A key partner for US scientists was New Zealand. One of the key areas occupied by US scientists was New Zealand’s sector, the Ross Dependency. In order to ensure cordial relations, the USA offered bilateral agreements to New Zealand’s Antarctic division and its expeditions on the continent.<sup>53</sup> New Zealand’s Christchurch airport was established as the main hub for US *Deep Freeze* missions, while the USA loaned New Zealand use of its vessels (such as the USS *Namakagon*) for their own scientific research. As a result, New Zealand moved closer to the USA’s position on Antarctic administration and even indicated its willingness to relinquish national rights and claims in Antarctica, in agreement with the specific approach to Antarctic policy of its prime minister and its minister of external affairs, Walter Nash.<sup>54</sup>

US strategy did not always please other Antarctic occupants. US efforts to act as a catalyst for scientific internationalism irritated British diplomats. Among others, Brian Roberts was especially critical of US policy in the region. Roberts was the diplomat responsible for the Polar Regions section at the Foreign Office as well as being a researcher at the University of Cambridge’s Scott Polar Research Institute (SPRI), the main scientific centre – together with the newly established British Antarctic Survey (BAS) – for polar studies in Britain. When in 1963 the SPRI set up an Antarctic bibliographic project, Roberts complained that the scheme was jeopardized by a similar project developed at the OAP. The secretary of the Royal Society of London, David Martin, protested with NSF officials over the incident, and Roberts noted that ‘they are thus entering into direct competition [with us], with almost unlimited funds, instead of joining the international co-operative schemes sponsored by the SPRI.’ The USA, he added, were ‘increasingly dominating Antarctic affairs by

lavish expenditure which the rest of us cannot match.<sup>55</sup> Roberts was not the only person who interpreted NSF international projects as aiming to dominate others. As observed by A.D. Parson, another British Foreign Office official: 'We are faced by the problem that the United States, while publicly advocating international collaboration in Antarctic investigations, is at the same time actively attempting to dominate all activities there.'<sup>56</sup> It was not only Antarctic science that US scientists and policy-makers sought to dominate; it also harbored more traditional geographical expansionist ambitions.

### American science and the Antarctic Peninsula

The Antarctic Peninsula had long been a region of special strategic interest because of its extension into the Drake Passage; its proximity to the South American continent; and because of the archipelago of islands surrounding it. The Peninsula's value was evidenced by the number of states laying claim to it: Britain, Argentina and Chile. The next section traces the way in which US science administrators used scientific cooperation to dominate affairs in the area.

Brian Roberts hoped that the AT would have allowed Britain to defuse tensions with its rivals. However, the *Antártida Argentina* and the *Territorio Chileno Antártico* were reaffirmed at the legislative level before and after the AT was signed. Moreover, in 1948 Argentina and Chile had already signed an agreement – the 'La Rosa–Vergara Donoso Declaration' – reaffirming mutual assistance. The accord was agreed at the conference of Perito Moreno in 1959, just before the AT conference in Washington, strengthening their alliance even further and isolating Britain.<sup>57</sup>

Roberts remained eager to work towards greater collaboration and integration between countries with bases in the Antarctic Peninsula. His associate at the FO Polar Regions section, John Heap, argued in 1976 that since the AT was signed, Britain's policy in Antarctica had been one of 'creeping internationalization.' An international regime was being consolidated in Antarctica by advancing 'along the lines of gradually developing a series of multi-lateral agreements about specific practical problems such as scientific co-operation,' in order to reach a stage where no state would any longer press territorial claims.<sup>58</sup> This policy did not result from dispassionate internationalism, but rather from an urgent need to manage financial and logistical constraints. In particular, trusteeship was needed to retain Britain's possessions in the South Atlantic, despite significant budgetary limitations imposed by the Treasury upon British foreign and colonial agencies.<sup>59</sup>

The creation of the British Antarctic Territory (BAT) had been more of a step towards establishing more friendly relations with Argentina than a robust reaffirmation of sovereignty. It was true that Britain's Antarctic Treaty Order of 3 March 1962 laid out the country's entrance into the AT regime and at the same time reaffirmed the validity of its territorial claims on the British Antarctic sector, but this was mainly an attempt to divide the sector's administration from that of the Falkland Islands, which further embittered relations with Argentina. Thus the formerly titled Falkland Islands Dependency (FID) became the BAT and its administration was assigned to the BAS (formerly known as the FID Survey).<sup>60</sup>

Britain's plans were partly jeopardized by the ways in which international scientific projects were arranged by the NSF. Although during the 1960s the USA's main concern was to use scientific cooperation to strengthen its presence in the Antarctic, in some circumstances it was used to 'infiltrate' British outposts, or to create tensions between traditional rivals in the Antarctic Peninsula. For instance, in 1960 a US collaborative program with Argentina led the USA to relinquish the small Ellsworth Island, in West

Antarctica, in Argentina's favor. In 1961, the OAP developed a cooperative program in the Antarctic peninsula in collaboration with Chilean geologists, which led to the setting up of a new US–Chilean laboratory in Graham Land. In light of these events the BAS director, Vivian Fuchs, wondered: 'Is this to be the future of these or other stations and huts now to be built by them [the Americans] in the BAS Territory?' Fuchs considered the US research strategies to indicate a 'considerable penetration' of Britain's 'sphere of influence.'<sup>61</sup>

That said, the foreign affairs agencies of both countries did try to reduce the significance of some of these issues. James Simsarian, head of the Division of International Scientific and Technical Organization Affairs at the US Department of State, was consulted regularly by the FO Polar Regions section in an attempt to reduce frictions with the NSF regarding scientific operations that denoted territorial penetration. For example, in 1968 Roberts agreed with Simsarian to work towards a boundary adjustment of special protected AT areas in order to avoid major diplomatic repercussions deriving from the establishment of the USSR base Bellingshausen in the South Shetlands (see Figure 2).<sup>62</sup> The placement of a Soviet base there had caused great anxiety, and was vigorously opposed by Argentine diplomats. The collaboration between UK and US diplomats dealing with Antarctic affairs continued until the end of the 1960s, at which time the US State Department effectively gave the NSF freer control over US Antarctic policy.

Diplomatic relations between Argentina and Britain suffered especially from the ways in which scientific internationalism was practiced in the area. From the mid 1960s Britain and Argentina had enjoyed cordial relations, while Chile had become more isolated. Mutual opposition to Chilean attempts to gain a monopoly over the routing of Antarctic telecommunications and seize Antarctica's natural resources facilitated this perhaps unlikely relationship,<sup>63</sup> but US and Russian scientific activities disrupted these friendlier relations by developing controversial research projects, especially on the island of South Georgia. The island was claimed as part of Argentinean territory, even though, just as with the Falklands, it hosted a small British community.<sup>64</sup> In 1969, the Russians asked to use a BAS station on the island as part of their whaling survey program. Britain promptly rejected the request, fearing the intensification of Russian naval activities, which the Argentineans in turn considered a threat to their national security.<sup>65</sup> Noticeably, the US continued to offer logistic support to all three parties, mostly in bilateral agreements. For example, from 1969 the US had offered to cooperate with Argentina over the operation of the ice-breaker *Glacier* in the Weddell Sea.

When in 1970 the NSF put forward a request for the installation of a geological laboratory in South Georgia, it unnerved already anxious British officials. From the BAS headquarters Vivian Fuchs described the scientific pursuit as 'a US invasion.'<sup>66</sup> The NSF research program certainly had important scientific implications – the request had been put forward to assist the tectonic investigations of the geologists Ian Dalziel and Robert Dott, of the Lamont-Doherty Observatory, Columbia University, who wanted to find fresh evidence for the theory of continental drift and their ideas about the margins of Antarctica and America once having been united.<sup>67</sup> Nonetheless, the BAS director was furious and made sure that Philip M. Smith, the incoming deputy director of the newly established NSF Office of Polar Programmes (OPP, previously OAP), knew he saw the whole project as a 'swamping' exercise:

Brian, John Heap and I all attacked Phil about this swamping of our area, and in particular South Georgia. Brian was particularly forceful, if not almost rude. I doubt Phil will take note, but he may.<sup>68</sup>

Diplomatic and scientific relations in the Antarctic Peninsula continued to be tense. This was in contrast to what happened in other areas of the Antarctic, particularly in East Antarctica, where international scientific cooperation instead helped to defuse tensions.

### The International Antarctic Glaciological Project

By signing the AT, Australia had committed itself to a new international regime that entailed a policy of coordination with other Antarctic signatories, including Soviet Russia. Partly because of this, the Australians remained apathetic toward the new regime – in other words, they accepted the Treaty but did not actively work towards its success. Australian diplomats considered scientific activities as the best means of reaffirming their sovereignty. They also believed that arrangements in the AT did not safeguard them sufficiently from the threat of Soviet nuclear installations.<sup>69</sup> This was reflected in recommendations made by the Australian government at Antarctic Treaty Consultative Meetings (ATCM): Given their belief that current AT legislation on inspections was insufficient, during the first ATCM in Canberra in 1961, the Australians put forward a recommendation that military and nuclear information should be exchanged.<sup>70</sup> It was certainly the case that Russian bases in Antarctica had grown in number and size. Moreover, the Australian Antarctic Territory sector continued to be a key area for Russian occupiers, who, in addition to the four bases already set up there, established Molodyozhnaya in 1962 and Leningradskaya in 1971. The Cuban missile crisis of October 1962 exacerbated existing concerns at the time. Indeed, shortly after it in 1963, the US State Department arranged a round of inspections of Antarctic bases, including the Soviet bases.<sup>71</sup>

Australia's resistance to internationalization and resulting 'negative policy of maintaining the status quo' led to some heated debate between UK and Australian diplomats in the mid 1960s over Antarctic policy.<sup>72</sup> In a discussion between Roberts and A.J. Eastman of the Australian High Commission Office (AHCO) in London, Eastman stressed that the aversion to internationalization was motivated by the potential for Antarctica to be used as a base for enemy missiles, or vessels carrying such weapons.<sup>73</sup> Roberts did not share the Australians' concerns, being adamant that Russia had no intention of placing nuclear missile bases in Antarctica. The altercation resulted in a serious breakdown in communication on the occasion of the fourth ATCM in Santiago, Chile, in 1966. Meetings were organized in London between British and Australian diplomats, where the two countries' views on the strategic role of Antarctica were reiterated but articulated in a more conciliatory way:

Although, in both the Australian and British view, the Antarctic had no present strategic significance, it was agreed that future developments could not be foreseen. As the nearest neighbour to Antarctica, the Australians naturally had reservations on these grounds.<sup>74</sup>

In the light of existing tensions in the Australian sector, it is not surprising that East Antarctica was chosen as the location for an international multilateral project that might facilitate a better integration of the Australian polar research community. The offer of logistic support by US science administrators was again extremely influential in engineering consensus around research efforts and at the same time defusing political and diplomatic tensions.<sup>75</sup> This program of research, known as the International Antarctic Glaciological Project (IAGP), broke new ground in polar research. It followed the initiative of the OAP to aid French and Soviet glaciologists interested in surveying the East Antarctic icesheet, where Russia, Australia, and France had located their bases. The US-led proposal was put forward at the International Symposium on Antarctic Glaciological Exploration (ISAGE)

held at Dartmouth College, New Hampshire, on 2–7 September 1968. This was organized by the SCAR working group on glaciology with the support of the glaciological commission of the International Association of Scientific Hydrology (now the International Commission on Snow and Ice).<sup>76</sup> The OAP offered to the French glaciologist Claude Lorius logistical support to complete the 800 km traverse, planned in coordination with SAE to reach Vostok from Dumont d'Urville, the French base in its sector, Adélie Land.<sup>77</sup> Given its origin, the IAGP was initially named the International Antarctic Glaciological Expedition (IAGE). An IAGP council was set up, comprising of two representatives from each national group and one from SCAR.

The IAGP was a 'concentrated programme of collaborative glaciological studies.' Focusing on the area of Antarctica bounded by longitude 60° East and 160° East and latitude 80° South, it aimed to determine 'the glaciological regime and processes, and [to deduce] some of the history and future, of a sizeable part of the East Antarctic Ice Sheet'.<sup>78</sup> It also considered the icesheet's impacts on patterns of atmospheric and oceanic circulation. A number of experimental techniques were deployed in glaciological studies including ice core-drilling, radio-echo sounding (RES) and geochemical analysis.

Given its diplomatic and political implications, the program was soon extended to the Eastern Antarctic's main occupier, Australia. Two researchers in particular made Australia's participation possible: Uwe Radok and William Budd, both of the Meteorology Department at the University of Melbourne. The research facility had already become a focus of international scientific coordination between states with an interest in the region. Since 1959 it had hosted the International Antarctic Analysis Centre (IAAC), a 'notable new development in the field of international scientific co-operation' in connection with the World Weather Watch.<sup>79</sup> Radok and Budd had been pioneering meteorological research in Australia as well as the development of international coordination in the field. It was because of Radok and Budd that when the first IAGE meeting took place in Paris, on 27–29 May 1969, the Australian contingent decided to participate with the other three national research groups.

The USA again used logistic support as a lever to encourage participation. For the Australian contingent, the OAP offered the support of a US Geophysical Survey team, which provided the geocounters for icesheet measurements.<sup>80</sup> The OAP also made available its airborne RES survey program, a collaborative initiative with the SPRI. Established in 1967, the joint program helped British glaciologists gather data on Antarctic icesheet thickness and bedrock morphology by providing them with US Navy long-range aircraft Hercules C-130s.<sup>81</sup> The primary object of the study was to produce a glaciological and geophysical map of Antarctica. At the same time RES data offered a contribution to other IAGP initiatives. Because of the NSF–SPRI survey, in 1971 Britain was invited to join the IAGP. In 1973 the Royal Society of London accepted the invitation.<sup>82</sup>

The OAP managed to extend cooperation to other parties who were not initially involved in Antarctic affairs, but whose involvement was important for other regions of strategic significance. For example, a Danish group examined ice-cores from Antarctica produced by the French team, while RES instrumentation for the SPRI missions was provided by a Danish research group based at the Technical University of Denmark.<sup>83</sup> Danish involvement had wider geopolitical implications, given their governance of Greenland – a key territory in the Cold War for the US-led NATO.

The USA understood that offering logistical support in a vast, frozen and isolated continent like Antarctica offered enormous returns to research projects, at the same time as it strengthened US-led scientific internationalism. Indeed, the positive effects of promoting international coordination and cooperation in Antarctica were soon felt: On 14 August 1969,

a few months after the Paris meeting, the Australian Minister of External Affairs emphasized that ‘Australia has to be watchful, but need not panic whenever a Russian appears. It has to avoid both facile gullibility and automatic rejection of opportunities for co-operation.’<sup>84</sup> In turn, projects that did not have the support of the USA were likely to fail. For example, the European Antarctic Project aimed to use RES techniques to survey Dronning Maud Land, the Norwegian sector. The project failed because the eight nations, led by Belgium, were unable to meet the growing costs of logistics.<sup>85</sup>

### The decline of international scientific collaboration in the 1970s

Although most collaborative programs in glaciology and other research areas of polar science developed across the late 1960s and 1970s, the 1970s represented a watershed for Antarctic scientific internationalism. Organizing projects with a political and diplomatic significance comparable to that of the IAGP became increasingly difficult. Although the USA maintained its dominance of Antarctic science through the offer of logistical support, it was never able to meet demand for its services. At the same time, attempts were put forward to re-define – and to an extent reduce – US operations in the Antarctic. Many factors, including the transition to a new funding policy at the NSF; the oil crisis and the general climate of economic recession; and the transition from a Democratic to a Republican administration (with Richard Nixon, 1969–74 and Gerald Ford, 1974–77) all contributed to a re-shaping of US Antarctic policy. Moreover, the growth of militarist regimes in Argentina and Chile made it impossible to plan bilateral or multilateral cooperative projects with a similar purpose to that of the IAGP.

Signs of change were visible from the late 1960s. When in 1969 the OAP was renamed the Office of Polar Programs to include Arctic research, the re-organization led to an emphasis on project-oriented programs. The deputy director of the OPP, Philip M. Smith, had worked at the NSF from 1958 and had been associated with polar programs from 1955. In particular, he had been involved in the transfer of responsibilities in Antarctica from the Department of Defense to the NSF.<sup>86</sup> Smith believed that the opportunities provided by the AT should be exploited to a greater degree than anything offered within the remit of SCAR activities, arguing that:

It is my belief that the decade of the 1970s must see a renewed effort in scientific cooperation if we are to achieve the full opportunity which has been afforded under the terms of the AT. The problem now is to utilize the general framework of cooperation which has been established to enhance very specifically the scientific programs of all nations, and to provide the *additional understanding* among the countries, an understanding that slowly but surely may lead to resolution of the difficult, *unresolved political and managerial* problems in Antarctica.<sup>87</sup>

Smith stressed that SCAR activities had helped plan collaborative scientific research, especially between nations with overlapping claims. He was concerned that ‘Antarctic research cooperation remains bi-national to a large degree’ and made the case for cooperation between Britain, Chile and Argentina.<sup>88</sup> Smith argued that SCAR activities should work with independent international collaborative projects on a larger scale. Coordination and cooperation offered an opportunity to exchange data and take to completion projects that individual national research crews would not have been able to complete.

Roberts, who as we have seen had met Smith in London in occasion of the outcry about the ‘swamping’ of South Georgia, was apprehensive about these new trends in policy-making and he was very critical, especially of what he saw as Smith’s attempt to ‘flog the

Treaty along at a cracking pace to shake up and shake out reactionary nationalism.<sup>89</sup> The FO diplomat believed Smith's approach to be the consequence of a lack of interest in the US State Department towards the management of Antarctic affairs, which in turn gave freer rein to the NSF administrators. Smith certainly reviewed NSF's financial commitments. In May 1970 he wrote to the SPRI Director, Gordon Robin, stressing the importance of cutting down the number of organizations requiring financial assistance to keep them running. Indeed, because of budget limitations the RES survey that year would not run.<sup>90</sup> A few months later he wrote to the BAS director, Vivian Fuchs, lamenting a 'very tight financial situation for the Antarctic in 1971.'<sup>91</sup> The 1971–72 RES campaign actually was successful but that did not entirely dissipate the problem. In June 1972 the OPP director Joseph O. Fletcher informed Robin that new aircraft for Antarctic exploration would be delivered only from November 1973, making it impossible to resume operations before that time.<sup>92</sup> When resumed, in the austral summer of 1974–75, two C-130 aircraft were lost in the Vostok area, which meant a further relapse in surveying.

In the meantime, the OPP developed new glaciological programs in Antarctica that were somewhat less wide in scope than the IAGP and more focused on specific issues, such as the monitoring of glaciological and geophysical structures, in order to assess the presence of natural resources (and oil in particular). When in 1973 the US research vessel *Glomar Challenge* found a pocket of gas that suggested the presence of substantial amounts of petroleum in the Ross Ice Shelf, drilling became a far more urgent endeavor than other scientific pursuits. The current oil crisis made the OPP more aware of the need to concentrate resources on monitoring precious natural resources, leading it to invest 12 million dollars into the investigation of potential drilling sites. The problem of managing natural resources became more apparent at the ninth ATCM in London in 1977, when diverging opinions on economic resources such as oil, metals and krill surfaced for the first time.<sup>93</sup>

Two such OPP projects were The Dry Valley Drilling Project (DVDP, 1972–75) and the Ross Ice Shelf Project (RISP, 1972–74). The DVDP marked the beginning of a very unusual international collaborative effort that united the USA, New Zealand and Japan. Japan was unable to put forward territorial claims because of the 1951 Peace Treaty. However, it did have one of the most active fishing fleets in the Antarctic Ocean, and wished to be involved in oil prospecting on land. The OPP therefore organized a new international scientific endeavor consisting of drilling fourteen holes in the dry valleys of Antarctica facing the Ross Sea (mostly at McMurdo Station and McMurdo Sound). The main Japanese contribution to the project was the development of accurate mineralogical studies based on X-ray diffractometry.<sup>94</sup> New Zealand provided a drilling crew.

It is possible to speculate on the geopolitical implications of the project. The prospect of international collaboration could have been used to bargain for more favorable conditions for Japanese whaling. In the 1970s whaling became a very sensitive political issue in Antarctica as the USA, Britain, France and Australia sought to protect depleted whale stocks, while Japan challenged the limits sets through the International Whaling Commission, together with the USSR.<sup>95</sup> Meanwhile, the RISP was an OPP program developed by the Geophysical and Polar Research Center at the University of Wisconsin and the US Army Cold Region Research and Engineering Laboratory based in Hanover, New Hampshire. It consisted of the use of seismic techniques and RES to investigate the geological and glaciological structure of the Ross Ice Shelf. The project saw the participation of the Geophysical Isotope Laboratory of the University of Copenhagen, which provided sampling methods for drilled ice cores.

After 1975, when RISP and DVDP were concluded, other US-led international projects began to be wound down. Two more SPRI RES seasons (in 1977–78 and in 1978–79) were



supported by the NSF but after that the RES program was abruptly cancelled.<sup>96</sup> By the end of the 1970s, the IAGP lost its impetus and never really managed to regain its importance. This was reflected in the frequency of the publication of IAGP newsletters, the sixth of which encompassed three years of research from 1975 to 1978. In the opinion of the leading US Antarctic geophysicist, Professor Charles Bentley, the IAGP ‘gradually petered out’.<sup>97</sup> From a scientific point of view satellite observation and remote-sensing promised greater accuracy in data-gathering than work on the ground or airborne. Geopolitical conditions in the 1980s also shifted, making it less imperative for the USA to pursue scientific internationalism. Radok’s paper ‘The Antarctic Ice’, in the *Scientific American*, unofficially marked the IAGP’s termination.<sup>98</sup>

The promotion of multilateral undertakings on the Antarctic Peninsula were no more successful. The Glaciology of the Antarctic Peninsula (GAP) project was conceived by BAS personnel under the auspices of SCAR in an attempt to provide new glaciological data in collaboration with old and new Peninsula’s occupants: the US, the USSR, Argentina and Chile. The GAP was the brainchild of Charles Swithinbank, a British glaciologist who had contributed to RES development testing as early as 1967 and who became responsible for the BAS glaciological program as well as secretary of the SCAR working group on glaciology.<sup>99</sup> However, in contrast with the IAGP, the British project – at least as a multilateral endeavor – developed rather haphazardly from the outset.

Initially positive relations between Britain and Argentina convinced diplomatic and scientific personnel to consider establishing joint research programs based on the RES technique.<sup>100</sup> Juan Carlos Beltramino of the Argentine Ministry of Foreign Affairs and Roberto Guyer, the Argentine UN ambassador, were particularly active in seeking collaboration. Although Heap was initially wary about this (because of a concern about ‘inter-service rivalry’ between the Argentine Army and Navy, which may have jeopardized co-operation if one was to take control of Argentine Antarctic policy), by 1973 he had become convinced that a multi-lateral RES project could strengthen dialogue between Argentina and Britain and so assist diplomatic discussions between the two countries.<sup>101</sup> He suggested that Captain Guillermo Mackinlay, the director of the *Instituto Antártico Argentino* (IAA), was invited to the first GAP meeting in Cambridge, on 27–30 April, while Fuchs would discuss the project while visiting the IAA during his last trip to Argentina as BAS director.<sup>102</sup>

Despite these ambitions, GAP never became a multilateral project. The 1973 Argentine elections, and the promise of a governmental shake-up, made it impossible to present openly British plans for scientific co-operation.<sup>103</sup> Following the elections, Mackinlay was dismissed as IAA director and Fuchs’ proposal for a RES joint program was rejected. BAS personnel nonetheless began work on the GAP project in the hope that Argentine and other scientific crews operating in the Antarctic Peninsula would eventually join in, but new hostilities emerged. In 1973 delays were suffered by a BAS air consignment in transit through Argentina, because it was addressed to the Falkland Islands rather than the *Islas Malvinas*.<sup>104</sup> The flight of Interim President Raúl Alberto Lastiri of June 1973 over the Falklands and into the Antarctic air force base of Marambio showed that no collaboration with Britain was forthcoming.<sup>105</sup> Unsurprisingly, the GAP continued to be a BAS rather than a multi-lateral project.

## Conclusion

Previous historical work has shown that post-IGY scientific activities in Antarctica had important political implications, and that the AT ratified the use of Antarctica as a continent for science partly because of the need to find a political solution that would accommodate

the interests of old and new colonizers. In this respect, the conventional wisdom is that scientific internationalism played a key role in putting the debate on Antarctica's future into 'hibernation' for almost 20 years; and that Antarctic science by necessity had to contain a 'political element' so as to overcome traditional frictions over sovereignty. For example, as John R. Rowland, an Australian diplomat who had been deeply involved in the AT negotiations as well as Australian–Soviet relations, put it:

The scientific cooperation that dominated the so-called period of hibernation certainly contained a political element, more or less apparent, in matters like the placement of bases and the degree of national effort thought necessary to safeguard a territorial claim. Thus the pattern of Soviet bases was probably not dictated solely by scientific interest.<sup>106</sup>

This paper shows that Rowland's words gloss over a far more intriguing (and possibly disquieting) reality. It demonstrates that scientific internationalism was evoked in order to manage the threat represented by the placing of Soviet bases in Australian Antarctic Territory. Thus to diplomats of the 'free world', scientific internationalism was a better option than the containment of the Soviet Union in Antarctic, and should be pursued consistently as a political, diplomatic and strategic tool.

As a diplomatic tool scientific internationalism somewhat paradoxically served a set of specific (and vested) national interests: for instance, the USA's wish to establish control on the continent without depending on territorial appropriations; Australia's interest in establishing defense measures against hostile powers; and Britain's need to balance its own geopolitical ambitions with budgetary constraints. Yet, because these interests were known by only a few influential diplomats, scientific internationalism was able to be upheld as encompassing values that were alien to traditional forms of colonial diplomacy. In turn, scientific internationalism could be used as a valuable weapon of propaganda aiming at convincing the wider public that a new experiment of civilization was taking place through the Antarctic Treaty; an experiment that had replaced traditional colonial practices.

In the meantime, scientific cooperation and coordination started to be used as diplomatic weapons more regularly by US agencies in the administration of Antarctic affairs. After 1961, the OPP became the most active promoter of international cooperation as well as provider of logistic support. Scientific internationalism flourished in the 1960s under OPP guidance and funding; it became diversified and more centered on project-oriented programs in the early 1970s; and it declined towards the end of the decade, when the USA began to reduce its level of support for science in the region.<sup>107</sup> However, US support for international collaborative projects was not uniformly distributed; in some circumstances bi-lateral collaborations prevailed over multi-lateral projects and vice versa. This asymmetrical application of US Antarctic policy lends support to the hypothesis that the USA's geopolitical ambitions varied by area. In East Antarctica and the Ross Dependency the organization of multi-lateral research projects was used to promote a positive and conciliatory approach to the management of Antarctica. In the former, it was used especially to address the concerns of one of its key-allies, Australia, in relation to the fear of installation of Soviet bases on its territory.

However, US-led scientific internationalism on the Antarctic Peninsula added another level of contention to an already fraught situation. Smith's appeal against 'bilateralism' in polar research may well have been genuine, but in practice it was dismissed or downplayed in the organization of US activities there. The ambiguity of US policy in the Antarctic Peninsula was typified by what UK science administrators considered forms of 'penetration' and 'invasions', which made it more problematic for Britain to pursue a policy of

creeping internationalization. What crept in, instead, was the return to Antarctic sovereignty claims in combination with the rise of militarist regimes in South America.

In 1977 the Argentine base of Marambio was declared a national capital, while Chile (with the dictator Augusto Pinochet in power from 1973), responded with a counter-declaration indicating that the Antarctic was the extension of 'national territory' and moved Chilean families there.<sup>108</sup> Historians have recently detailed the relations between South American dictatorships and covert operations by the US Central Intelligence Agency and allied South American service. This potentially complicates further our understanding of US and other countries' activities in the Antarctic Peninsula. Only time and the release of yet-to-be-declassified government documents will allow us to explore further this period of Antarctica's history.

## Notes

1. Lewis and Smith, *Frozen Future*. The collection contains reprinted articles from a special issue on 'Antarctica after the IGY' first published in the *Bulletin of Atomic Scientists* in December 1970 and from several issues of the *Antarctic Journal of the United States*.
2. The prospect of exploiting Antarctic oil and minerals was abandoned only in the 1980s after painstaking negotiations that saw Australia and France opposing any agreement on these matters, because of protests by environmentalist groups. Elzinga, 'Antarctica,' 73–74.
3. As a leading Antarctic scientist put it in 1986: 'The role of Antarctic regions in any future conflict is not clear. The importance of the extensive sea ice zone around Antarctica, however (up to 25 million square kilometres in the July of each year), for the relatively undetected operations of ICBM submarines cannot be minimized (due to the acoustic noise generated by sea ice and its complex patterns of leads and polynas). Nor can the potential use of coastal and inland locations for some military activities'. Drewry, 'International Scientific Coordination,' 25–26.
4. On the difference between coordination and cooperation, see Drewry, 'International Scientific Coordination,' 27.
5. See Doel and Harper, 'Prometheus Unleashed,' 66–85 and Miller, "'An Effective Instrument of Peace",' 133–60.
6. See for example Krige, *American Hegemony* and Krige, 'The Peaceful Atom,' 4–55.
7. Elzinga, 'Antarctica,' 73–106; Elzinga, 'Science as Continuation,' 127–53. On the history of Antarctica and scientific internationalism see also: Fifield, *International Research*; Fogg, *A History of Antarctic Science*.
8. Buck, *The Global Commons*, 45–69. See also Ostreng, 'Polar Science,' 88–113.
9. Young, *International Cooperation*, 34–35.
10. Beck, 'International Relations,' 106. See also Auburn, *Antarctic Law*; Suter, *Antarctica*; Joyner and Chopra, *The Antarctic Legal Regime*.
11. Thanks to a study of the archival papers of Britain's Foreign Office (FO) and Foreign and Commonwealth Office (FCO), deposited at the British National Archive, Kew Gardens, London (hereafter NA); the US National Science Foundation (NSF) deposited at the National Archive Research Administration (hereafter NARA), College Park, Maryland; and the British Antarctic Survey (BAS) deposited at the BAS archive, Cambridge (hereafter BAS).
12. Beck, 'International Relations,' 106.
13. On the history of RES see: Turchetti et al., 'Accidents and Opportunities,' 417–44. For a technical analysis see Plewes and Hubbard, 'A Review of the Use,' 203–36.
14. Dodds, *Pink Ice*, 13–75. See also: Dodds, *Geopolitics in Antarctica*.
15. Cited in Dodds, *Pink Ice*, 78.
16. Boczek, 'The Soviet Union,' 837.
17. An important portrayal of the IGY written immediately after its completion was Sullivan, *Assault on the Unknown*. For a historical study of the IGY see Korsmo, 'The Birth of the IGY,' 1312–16. For an analysis of the scientific implications and achievements see Millbrooke, 'The International Geophysical Year'. See also Naylor et al., 'Science, Geopolitics,' 144.
18. See Dodds, *Pink Ice*, 77.
19. Scientific activities were organized through the Leningrad-based Arctic and Antarctic Research Institute. Logistical arrangements were made through the Ministry of Sea Transport. Boczek, 'The Soviet Union,' 838.

20. Naylor et al., 'Science, Geopolitics,' 145. See also Collis and Stevens, 'Cold Colonies,' 239.
21. Boczek, 'The Soviet Union,' 839.
22. The 12 signatory members, 'Recognizing that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes ... . Acknowledging the substantial contributions to scientific knowledge resulting from international cooperation in scientific investigation ... . Agreed that Antarctica shall be used for peaceful purposes only ... (Article 1) and that Freedom of scientific investigation in Antarctica and cooperation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty (Article 2):' The Antarctic Treaty, 1959.
23. See for example Joyner, 'The Antarctic Treaty,' 1–10.
24. On Australia's government: Edwards, 'The Liberals as Managers,' 451–58; Waters, 'Casey,' 380–88. Government officials believed that 'posts originally established under the sheep's clothing of scientific research may subsequently be revealed the wolf reality of political and military gains', cited in Ostreng, 'Polar Science,' 94.
25. Dodds, *Pink Ice*, 82–83.
26. *Ibid.*, 88–89. It is worth noting that in 1954, Australia broke off diplomatic relations with the Soviet Union following the defection of the high-ranking Soviet embassy official, Vladimir Petrov, and the espionage frenzy that followed.
27. On 12 July 1957 Australia signed a new defense agreement with the USA, although US President Dwight Eisenhower downplayed the role of Australia and New Zealand as logistical and production bases for nuclear weapons. At the same time the Australian government terminated a joint program with Britain that was aimed at developing a nuclear capacity. By 19 September 1957, Menzies stated in the Australian Parliament that the government had 'at present' ruled out plans to produce nuclear weapons, the reason being 'the modern attitude of the US' in setting the conditions for coordinated defense. Reynolds, 'Rethinking the Joint Project,' 872. See also Reynolds, *Australia's Bid*, 182; Arnold and Smith, *Britain, Australia and the Bomb*.
28. Signed by Australian in 1951, the so-called ANZUS treaty ensured a coordinated military defense between the three nations concerned. In turn, in September 1954 the Manila agreement ratified Australia's entrance into the South-East Asia Treaty Organisation (SEATO).
29. 'More Than a Hope', *Time Magazine*, 4 November 1957.
30. In particular, Daniels had detailed knowledge of Anglo–Argentine–Chilean conflicts in the polar south. See Belanger, *Deep Freeze*, 370.
31. 'In 1957 the UK initiated the talks with Australia, New Zealand and the USA which led eventually to the signing of the Antarctic Treaty by twelve countries in 1959'. J. Heap, 'The Future Direction of British Policy in the Antarctic. A Background Paper,' 26 May 1967, Confidential, 2. In UK Policy in the AT area, Secret, 1976, FCO 7/3248, NA.
32. Casey's diary shows that he had departed after the ANZUS for New York to participate in United Nations talks. Millar, *Australian Foreign Minister*, 279. South African diplomats, who were also in Washington DC because of the Commonwealth meeting, knew about the Antarctica talks but were not invited. They were deliberately kept in the dark about the proposal put forward, following a suggestion by Daniels. Summary report of informal talks held among officials of Australia, Great Britain, New Zealand and the United States. Secret, 1–13. Copy in FCO 7/3248, NA. This was viewed as a necessary evil and was common practice; holding treaty meetings was seen to 'encourage candor, helps the parties put aside contentions brewing elsewhere, and softens the voice of ideology'. Belanger, *Deep Freeze*, 383.
33. Summary report of informal talks held among officials of Australia, Great Britain, New Zealand and the United States, Annex I – UK Document, Secret, 2–3. Copy in FCO 7/3248, NA.
34. *Ibid.*, 3.
35. Summary report of informal talks held among officials of Australia, Great Britain, New Zealand and the United States. Secret, 7. Copy in FCO 7/3248, NA. See also US Department of State Memorandum Concerning Claims to Antarctica and United States Participation in the International Geophysical Year, 30 March 1956, in US, *American Foreign Policy*, 1950–1955, Vol. 1, doc. 42, 430–31. Copy in Bush, *Antarctica and International Law*, Vol. 3, 472.
36. Summary report of informal talks held among officials of Australia, Great Britain, New Zealand and the United States. Secret, 4. Copy in FCO 7/3248, NA.
37. *Ibid.*, 11.
38. The fear was justified. In July 1958 India raised again the 'question of Antarctica'. The Indian ambassador at the UN eventually dropped the question of Antarctica's sovereignty from his talk, focusing mainly on the request that Antarctica be utilized exclusively for peaceful purposes.

- Indian Explanatory Memorandum in Support of a Request for the Inclusion of an Item on Antarctica in the Agenda of the 13<sup>th</sup> Session of the UN General Assembly, 15 July 1958. Copy in Bush, *Antarctica and International Law*, Vol. 1, 510. On the 1956 proposal see Dodds, *Pink Ice*, 83.
39. Summary report of informal talks held among officials of Australia, Great Britain, New Zealand and the United States. Secret, 10 and Annex I – UK Document, Secret, 14. Copy in FCO 7/3248, NA.
  40. Only the Russians received it in Washington rather than their own country. US Note to Eleven Countries Inviting Them to Participate in a Conference on Antarctica, 2 May 1956. Copy in Bush, *Antarctica and International Law*, Vol. 3, 473.
  41. 'All areas of Antarctica, including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, shall be open at all times to inspection by any observers designated ... .' The Antarctic Treaty, 1959. On inspections in the secret meeting: Summary report of informal talks held among officials of Australia, Great Britain, New Zealand and the United States. Secret, 11 and Annex I – UK Document, Secret, 9. Copy in FCO 7/3248, NA.
  42. Zubok and Harrison, 'The Nuclear Education,' 166–67.
  43. Anonymous, 'The Arctic Zone,' 153.
  44. For a detailed discussion of the Treaty negotiations themselves, see Dodds, 'Dr Brian Roberts'.
  45. Belanger, *Deep Freeze*, 369.
  46. Sollie, 'The Political Experiment,' 57–61.
  47. Statement by Harlan Cleveland, Assistant Secretary of State for international organization affairs, US Department of State before the House Subcommittee on Territorial and Insular Affairs, 1965. Copy in AD3-1-AS-131-1(3), BAS.
  48. Doel, 'Constituting the Postwar Earth Sciences,' 647. See also Doel, 'The Earth Sciences,' 361–88.
  49. McElroy, 'Antarctic Research,' 265. See also Doel and Harper, 'Prometheus Unleashed,' 66–85.
  50. Admiral Dufek of the US Navy did express concerns about this, worrying that the NSF would 'neglect' US interests due to its 'preoccupation' with science. Belanger, *Deep Freeze*, 360.
  51. Naylor, Dean and Siegert, 'The IGY,' 14.
  52. Barkov, 'Glaciological Studies,' 11–14. On the intelligence value of scientific internationalism, see Krige, 'Atoms for Peace', 166.
  53. Joint announcement of New Zealand and the United States Concerning the Maintenance of Hallett Station, the United States Air Facility in McMurdo Sound, and Scott Base, Beyond the Termination of the International Geophysical Year, 23 December 1958. Copy in Bush, *Antarctica and International Law*, Vol. 3, 73.
  54. New Zealand Statement at the Conference on Antarctica in Washington that it was prepared to consider the relinquishment of national rights and claims to Antarctica, 15 October 1959. Copy in Bush, *Antarctica and International Law*, Vol. 3, 77.
  55. Brian Roberts, 'Minutes on Exchange of Scientific Information, 30 May 1963,' in Antarctica: Exchange of Information: SPRI, 1963, FO 371/167775, NA.
  56. A.D. Parsons, FO to I.J.M. Sutherland, British Embassy, Washington DC, Confidential, undated but 1962, in AD3-1-AS-131-1(2), BAS.
  57. In 1964 the Argentine Minister of Home Affairs declared the 22 of February of each year as 'Antarctic day': 'Visto ... Que nuestra soberanía antártica se fundamenta en indiscutibles títulos históricos ... Que al nacer libre y soberana nuestra Nación, la Antártida Argentina integraba nuestro territorio sin necesidad de proclamarlo expresamente ... .' Decreto n. 1.032, 18/2/64, 'Día de la Antártida Argentina'. Copy in Bush, *Antarctica and International Law*, Vol. 3, 43. On the agreements between Argentina and Chile see Beck, 'International Relations,' 103.
  58. J. Heap, 'The Future Direction of British Policy in the Antarctic. A Background Paper,' 26 May 1967, Confidential, 3. In FCO 7/3248, NA. In particular, 'creeping internacionalisation' functioned on the premise that nations would become uninterested in pressing claims rather than firmly renouncing them.
  59. 'In 1964 Treasury mounted a sustained attack on the relevance of the BAS as an outmoded instrument of colonial policy'. J. Heap, 'The Future Direction of British Policy in the Antarctic. A Background Paper,' 26 May 1967, Confidential, 3. In FCO 7/3248, NA. From 1967 the BAS was incorporated into the National Environmental Research Council.
  60. 'The Antarctic Treaty Order, 26.2.1962,' in Bush, *Antarctica and International Law*, Vol. 3, 375–78. On the history of the FID Survey, see Dodds, 'Putting Maps in Their Place'.

61. BAS (signed V. Fuchs), US Activities in the British Antarctic, 25 September 1962 in Antarctic Treaty General, AD3-1-AS-103-1 (1), BAS.
62. Roberts to Simsarian, 7 March 1968, in FCO 42/20, NA.
63. This isolation was mainly the result of controversial proposals put forward by Chilean officials, but it may have also resulted from the opposition of 'free world' countries to the establishment of a socialist regime in Chile in 1970 with the election of Salvador Allende as its new President. The Chilean position on the exploitation of Antarctica's natural resources (which in ATCM meetings was supported only by the USSR) is documented in Tore Gjelsvik, Norsk Polarinstitut, Oslo to Roberts, 13 April 1971 in Exploration for oil and minerals in Antarctic Treaty area, 1971, FCO 7/2153, NA.
64. In 1967 the British Treasury recommended relinquishing the small island of South Georgia, but Roberts, Fuchs and Heap worked to revise this plan. British diplomats certainly did not want to appear too weak to Argentine diplomats, especially in the light of the opening of the Falklands. Dodds, *Pink Ice*, 144.
65. Roberts to Smith, 17 March 1971 in Foreign Activities AMERICA, AD3-1-AS-131-1(6), BAS.
66. Fuchs to Ray Adie, 4 June 1970, in Foreign Activities AMERICA, AD3-1-AS-131-1(4), BAS.
67. Dalziel, 'Back-Arc Extension'.
68. Fuchs to Ray Adie, 4 June 1970, in Foreign Activities AMERICA, AD3-1-AS-131-1(4), BAS.
69. Policy in the Antarctic. Notes on discussion held at the FO, 17 March 1966 (Confidential) in UK/Australia relations on Antarctica, Secret, 1967, FCO 7/998, NA. The Antarctic Treaty Act ratified the Antarctic Treaty and, at the same time, reaffirmed the sovereignty over the Australian Antarctic Territory. The Antarctic Treaty Act, 2 November 1960. Copy in Bush, *Antarctica and International Law*, Vol. 2, 192-93.
70. 'As things stand, therefore, it would be theoretically possible for a country to open a station in Antarctica without necessarily being required to provide the full information on military personnel and equipment and nuclear equipment that we have thought desirable'. R.F. Osborn, OHCA to J. Heap, FO, 30 June 1966 in FCO 7/998, NA.
71. 'US Security Check on Soviet Antarctic Bases,' *The Times*, 14 October 1963. These anxieties also have to be considered in the light of military developments in the Southern Pacific area. In 1964 China completed its first nuclear test. The Australian government refused to recognize the Popular Republic of China for many years, even when the US did so in 1972. In 1965 Australia and New Zealand both sent troops to Vietnam to support the US army and South Vietnam. Pitty, 'Way Behind in Following,' 440-50.
72. J.A. Heap, 'Australian views on Antarctic Policy, 24 August 1965,' in FCO 7/998, NA.
73. B. Roberts, Minutes of lunch meeting with Mr Eastman, 28 October 1965, in FCO 7/998, NA.
74. Policy in the Antarctic. Note on discussion held at FO, 17 March 1966 in FCO 7/998, NA.
75. Using science to defuse tensions and engineering consent in the Southern Hemisphere was used systematically by the USA throughout the 1960s. Some examples are joint US programs in meteorology and weather control in India, such as GROMET; and genetic engineering for crop production in the Philippines. See, respectively, Doel and Harper, 'Prometheus Unleashed,' 78-83; Cullather, 'Miracles of Modernization,' 227-54.
76. SCAR Bulletin no. 33, January 1969 in *Polar Record* 14, 1968-69, 276.
77. Minutes of meeting of the SCAR Working Group on Glaciology, 3-6 September 1968, Hanover, USA. In SCAR Bulletin no. 34, January 1970 in *Polar Record* 15, 1970-71, 127.
78. Minutes of meeting of the SCAR Executive Committee, 14-16 July 1969, Cambridge, UK. In *Polar Record* 15, 829-33. The IAGP council met in Moscow in 1971, in Leningrad in 1973, in Cambridge in 1974, in Madison in 1976, Cambridge, 1977, Chamonix, 1978, in Canberra in 1979. In 1971 a document was laid out outlining the key standards in collaborative work. Bentley et al., 'The International Antarctic Glaciological,' 349-64.
79. The IAAC developed thanks to the collaboration of Argentina, Australia, France, Japan, USSR, USA, SCAR and the WMO. The IAAC was renamed in January 1966 as the IAMRC (International Antarctic Meteorological Research Centre). Gibbs, 'The International Antarctic Meteorological,' 143-45. On the World Weather Watch see Edwards, 'Meteorology,' 229-50.
80. Newsletter 1: International Antarctic Glaciological Project in *Antarctic Journal of the United States*, 9, no. 2, 1974, 46 and 49.
81. Turchetti et al., 'Accidents and Opportunities,' 417-44.
82. SCAR Bulletin no. 43, January 1973 in *Polar Record* 16 (1972-1973), 641.
83. Newsletter 1: International Antarctic Glaciological Project in *Antarctic Journal of the United States*, 9, no. 2, 1974, 46 and 49.

84. Millar, *Australia in Peace and War*, 351, emphasis added.
85. Elzinga, 'Geopolitics.'
86. Anonymous, 'P. M. Smith,' 60.
87. Smith, 'International Cooperation,' 87, emphasis added.
88. *Ibid.*, 87.
89. Roberts, Visit of Philip M. Smith, Deputy Director, OPP, NSF, Washington, 9 November 1971 in Policy and activities of USA in Antarctic Treaty area, 1971, FCO 7/2141, NA.
90. Ken Moulton (NSF Field Operations), diary note, 1 May 1970, and Smith to Robin, 7 May 1970 in UK 1970, Box 31, NSF 307/64, NARA.
91. Smith to Fuchs, 4 August 1970 in Foreign Activities AMERICA in AD3/1/AS/131/1 (4), BAS.
92. Robin to J.O. Fletcher, 16 June 1972, in UK 1972, Box 31, NSF 307/34, NARA.
93. Berlins, 'Antarctic Cooperation Threatened.' On the US investment in oil prospecting: Spivak, 'Oil Treasure Hunt.'
94. Torii, 'Japanese Activities,' 130–31.
95. Black, 'Did Greens Help.'
96. Drewry and Meldrum, 'Airborne Radio Echo Sounding,' 267. On the reasons for the cancellation see Dean et al., 'Data in Antarctic,' 588.
97. Interview with Professor Emeritus Charles Bentley at the University of Wisconsin – Madison, 6–7 October 2005, transcript page 36.
98. Radok, 'The Antarctic Ice,' 98–105.
99. Swithinbank, 'Glaciological Research,' 161–83; Swithinbank, *Forty Years on Ice*, 40.
100. Heap to Wallace, British Embassy, Buenos Aires, 22 September 1969 in Anglo/Chilean/Argentinian relations in the Antarctic, 1969, FCO 7/1379, NA.
101. Heap to Wallace, 22 September 1969 in FCO 7/1379, NA.
102. Alec Douglas-Home, FCO to British Embassy, Buenos Aires, 1 January 1973, in 'Co-operation between Argentina and the UK in the Antarctic Treaty Area, 1973,' FCO 7/2546, NA.
103. 'No Government Department or agency is going to commit itself even in principle to a programme of the kind you suggest, involving, as it does, inter-service participation and finance, until the elections are over and the political fog has cleared'. Evans to Heap, 20 February 1973, in FCO 7/2546, NA.
104. Douglas-Home, FCO to British Embassy, Buenos Aires, 25 January 1973, in FCO 7/2546, NA.
105. Evans to Heap, 20 August 1973, Restricted. In Policy and activities of Argentina in the Antarctic Treaty Area, 1973, FCO 7/2545, NA.
106. Rowlands, 'The Treaty Regime,' 12.
107. Drewry, 'International Scientific Coordination,' 32.
108. Rowlands, 'The Treaty Regime,' 19.

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