

# Antarctica: Does it Differentiate Between Scientist and Tourist?

A fugue in five voices

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## **Introduction**

To explore the question we must first explore the terms used to pose the question - Antarctica, differentiate, scientist, and tourist. What do these terms mean or represent and how should they be interpreted in the context of the question? Taken literally, the question becomes nonsense, but with some interpretation a meaningful and revealing question can be derived.

The term 'differentiate' is fundamental to the question. To differentiate is to detect, or draw or make distinctions, based on unlikeness. Taking this a step further we could introduce discrimination, that is setting up exceptional treatment against, or in favour of, a distinct object. Thus it is seen that differentiation is a cognitive process followed by action. This must be reflected in the interpretation of the term 'Antarctica'.

Antarctica is a continent; a landmass largely covered by ice, unique in the absence of an indigenous human population. It is host to a diverse ecosystem still not well understood, and is now recognised as a fundamental, yet sensitive, component in global climate systems. It has no voice, no self-determination, and no cognitive function. It is passive, yet its reaction to external influences can be of global proportions. To personify a landmass we traditionally use the

concept of a nation, a people or race distinguished by commonality of descent, language, history, or political institutions. Antarctica can not be personified in this way. It is not a nation state. Transient populations from other nations have established precarious footholds on the continent, reliant on extensive external support. The region is administered internationally by a collective of nations with varying degrees of interest and involvement in the continent. We term this the Antarctic Treaty System (ATS). There is a problem here in that nations not directly involved in Antarctic decision-making through the ATS can still collectively impact on Antarctica from all corners of the globe through direct means such as fishing, or indirect means such as nuclear explosion, greenhouse gas emissions, etc. Likewise they may be subject to global effects emanating from Antarctica. So how is it appropriate to personify Antarctica, to provide the cognitive ability to differentiate and subsequently perform discriminatory actions? It is the organisations or institutions representing various communities of Antarctic interest that have the ability to differentiate and act accordingly. These organisations may be governmental or non-governmental, local, national or international. Some of these organisations may be directly involved in formulation and implementation of policy. Others may be limited to, and motivated by, influencing public perception of issues. Collectively these organisations represent the values of the international Antarctic community, and as such can be considered as a representation of Antarctica.

Finally, we must consider the terms 'tourist' and 'scientist'. As a starting point we could say that 'the tourist' represents all those participating in Antarctic tourism, and 'the scientist' as all those undertaking science in Antarctica. But, are we really interested in the people, or is it the nature of the activities they are involved in that we wish to compare? Neither tourist nor scientific activities can be conducted in the Antarctic environment without major logistical support. By considering science activities and tourist activities in a very general way, we have a more meaningful basis for comparison.

At this point we can reconsider the original question and interpret it as follows:

**Do the various bodies representing the Antarctic community perceive differences between science and tourism activities, and does discrimination occur as a result?**

## The Antarctic Community

The Antarctic community can be defined broadly by describing it as the collection of international organisations/bodies/individuals who have a significant role in determining the

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value systems surrounding the concept of Antarctica. The Antarctic community represents the Antarctic continent and the Southern Ocean. The members of this community have been represented under broad umbrella terms and it is possible that there are other members of the Antarctic community that have been excluded or are yet to emerge. It is possible to perceive differences between these different members of the community and to conclude that different value systems are at work. There are also a number of overlaps between the different bodies, and there are no mutually exclusive or inclusive activities as a result of this. There is however an overwhelming consensus of opinion that Antarctica is an important place. The institutionalised result of this consensus is the Antarctic Treaty System, but there is much subtler dissemination of values at work within and outside this community. Consequently, no body is disinterested and everybody is implicated.

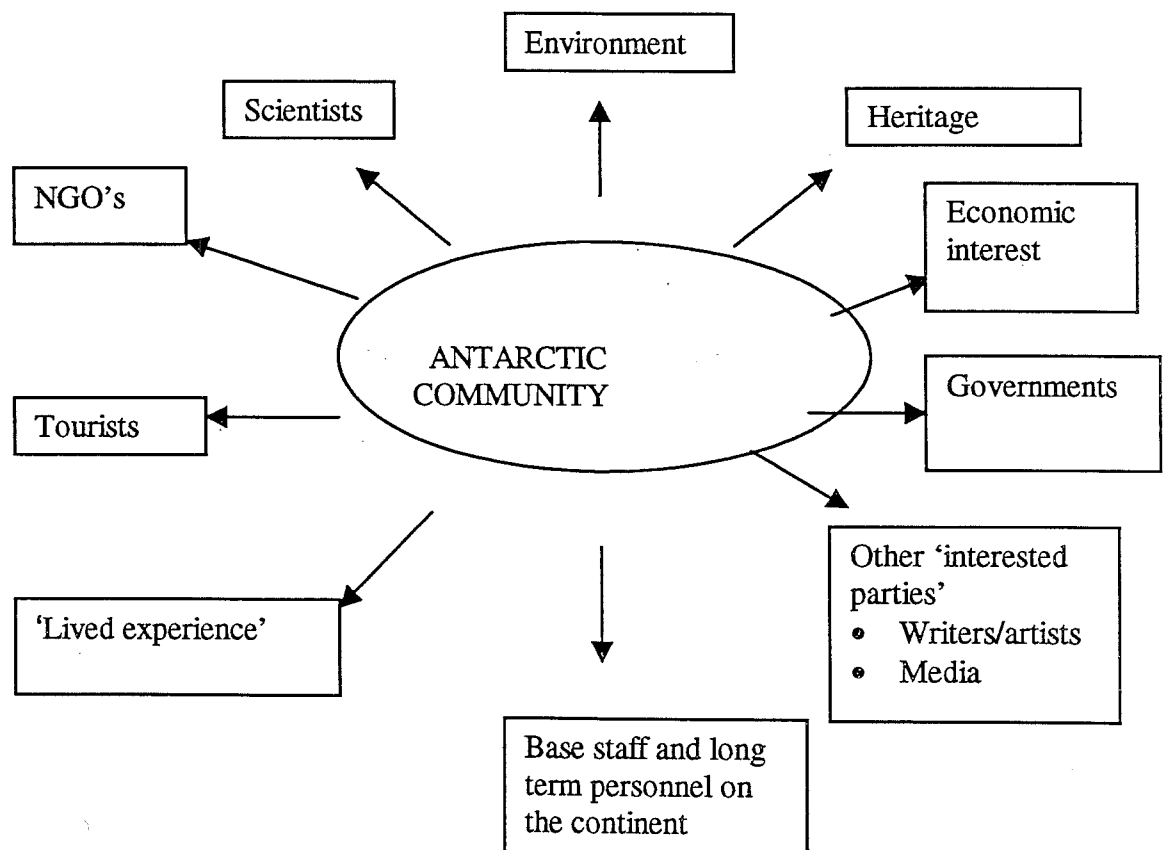


Figure One: The Antarctic Community

*The 'key players' may not adequately represent the Antarctic community. Some of the members of the community may have much less of a voice than others.*

*Antarctic community = a living body of organisations that represent the collective range of value systems of those with an interest in Antarctica.*

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*Organisation = a structured body or system of representatives chosen by institutions to represent and facilitate their interests*

*Values = the conferring of importance*

## Value Systems

We can broadly say that organisations have different value systems. Value systems can be institutionalised through mission statements. However, the language of some mission statements can often cloud or skew the interpretation e.g. explorative may really in practice be exploitative. Not all mission statements are a true reflection of the value system of the institution. There is often divergence between the stated value system and the values demonstrated in the resultant actions.

Individuals may have different value systems to those of their employers or patrons and they may have internal conflicts within their own personal value systems. The value systems are mutable but can be difficult to alter once they have been institutionalised. Value systems of organisations are easier to decipher than those of society – anthropological observations record great inconsistencies between human values and human practice. What may be perceived as values in a community are often responsive and reflective of particular situations. Many individuals do not initiate action as a result of their value systems, and many communities have theoretical value systems that are not translated into practice. The values that organisations confer on their activities are often at odds with the values others confer on them. The communication of value systems may differ from within and outside the organisation.

Different members of the Antarctic community may differentiate between themselves and other organisations. Differentiation may be by mission statement / planned objectives / direction of funds or by a myriad of other subtle processes.

### What Determines Values?

Heritage or perceived heritage is an important historical tool for legitimising activities or assigning national 'rights'. The artefacts of historical endeavours, such as the Huts are particular sites of contention in Antarctica. Currently the legislators for the historic monuments differentiate between 'scientist' and 'tourist', the former being allowed free access and the latter having access on remuneration. The endurance of certain 'histories' often

indicates that they represented particular values that were admired and are still thought worthy of consideration.

Culture is the umbrella term for all the value sets at work within all levels of society. These values may not reflect the individual values entirely but they are the result of a consensus of understanding. The culture determining the values within the Antarctic community can be broadly called a 'European' culture. The dominant characterisation of this culture is capitalism and this tradition or 'way of seeing' is indicative of certain understood value systems. These value systems are modified to fit national values and can be viewed in the governmental interpretation of the ATS. Outside the Antarctic community, and even within it, there are other cultures with different value systems; many of these are not represented in the Antarctic Treaty System.

There is a great danger, stemming from the pervasiveness of the western intellectual tradition, that there can be an assessment of progress and contribution on the basis of the degree to which those traits and traditions are followed. (Drewry, 1994)

Education perpetuates and questions the culture of society and occasionally challenges it. Certain received ideas and values are reinforced as a consequence of this. Science and its value are acknowledged in this institution but they are not always understood.

Philosophical ideas can modify value systems and offer different 'ways of seeing'. An environmental ethic may deal with the effects of a situation; philosophy may deal with its cause.

The political value of the Antarctic community is enshrined in the ATS; it is a consensus of international values from elected governments. The ATS is unique in this sense because it embodies the values of state governments rather than the values of commerce that are prevalent in other governmental affairs. There is a danger that these elected governments may not be able to resist commercial pressure at a national level and thereby endanger the Treaty at an international level.

Mythologies are 'stories' that transmit certain values through narration. They are not necessarily falsities, but are the selection of particular ideas that reflect important values within the society. Mythologies are the transmission of perceptions within the community, and they can often be reflected in institutionalised action.

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### How are these values transmitted?

**Media** - probably the most powerful tool in the transmission equation. It has a captive audience, particularly outside the Antarctic community. Media is not always as rigorous and objective as some would like. It can often present 'snapshot' views that are pulled out of context.

"No matter what kind of business or organisation you are, your fundamental job these days is competing for attention".

*(James Hall, Saatchi and Saatchi)*

**Journals / papers / conferences** - Within the Antarctic community there are many bodies that transmit information to or between other members of the Antarctic community and into the forum of professional publication. The audience tends to be discipline specific and provides useful peer review. Publication and conference presentations do not necessarily communicate as well with wider audiences.

**Images** - The persuasiveness of images in the formation of perceptions is often underrated and poorly analysed. Significant images have the power to transform our perceptions.

**Language**- the manipulation of language can and does change perceptions.

"In the same way there is a history of our relationship with the continent frozen in the language used at each stage of human contact, as Klaus Dodds pointed out. When one set of words becomes restrictive then we slough it and secrete a more comfortable or more serviceable carapace." (Tetley, 1998)

Language also establishes the difference between different communities of thought. As Graeme Tetley commented at the Futures Workshop, "The Antarctic Brand- The what?"

### The Voice of Antarctica

One identified part of the Antarctic community is the experiential nature of visiting the continent, the 'lived experience' of Antarctica. In this scenario Antarctica becomes the interface of this community and its value system. This is a highly problematic area, but has been included because of the dramatic difference this experience has been seen to have in determining individual value systems. The 'voice of Antarctica' is an unquantifiable term with many pitfalls, yet it has featured throughout the narrated history of Antarctica.

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If the continent itself has been assigned a voice it is through these human mouthpieces of expression. The question that one must consider is, 'how does Antarctica change the views and perceptions (and/or alter the actions) of those that go there?' The expedition leader of Aurora expeditions, Greg Mortimer is reported as, "having enormous faith in the power of the place", a similar sentiment as that expressed by Anne Kershaw of Adventure Network International. If we accept the premise that the 'lived experience' of Antarctica does alter (maybe significantly) the perceptions of its visitors, we must then ask whether there is any differentiation between 'scientist' and 'tourist'? To assign Antarctica the ability to differentiate we have personified her beyond logical reason - the question that is perhaps more valid is, 'does the nature of activities undertaken in Antarctica significantly alter the 'lived experience'? Could this subsequently alter the perceptions (and/or actions) that may result from that experience? Subsequently we must ask where the interface is between Antarctica and us, and how can this be manipulated to give a preferred experience? The base level question could be, 'Is one person's "experience" more valid than an other's is?' If we think in terms of different experiences within Antarctica we could moderate that question to ask, 'Do scientists and tourists have different experiences because of the activities they undertake and could this be a contributory factor to their engagement and subsequent relationship with the continent?' If the answer to this question was 'yes' we could conclude that Antarctica, the 'lived experience', did differentiate between scientist and tourist.

### A Case Study in Differentiation

By looking at two different members of the Antarctic community we can determine two different value systems at work. What is important in this case study is determining how these value systems operate at different levels within the institution, and how they align with common perceptions.

#### **Antarctica New Zealand**

Antarctica New Zealand was created by an Act of Parliament in 1996, and the Institute was developed to

"Develop, manage and execute New Zealand activities in respect of Antarctica and the Southern Ocean, in particular the Ross Dependency."

(part5:Functions:1996)

From this act and the subsequent purchase agreements we can immediately identify the values that are being contracted as an interpretation of the ATS. The act is ambiguous in its language and the interpretation of this act could be varied. Is development consistent with management? The purchase agreement between the New Zealand Government and Antarctica New Zealand is an annual institutionalised refinement of these ideas (the interpretation of the Treaty). From



1996 science and tourism (later changed to commerce in 1997) have been identified as key outputs purchased, with equal weighting in the document. The interpretation from this document could be that the two are equal stakeholders. There is a divergence from the ATS here. It is inevitable that there will be future divergence and interpretation by Antarctica New Zealand as policies develop as a matter of course in the running of an institution that has to 'develop, manage and execute' activities with conflicting value systems. Thus the mission statement becomes a fait accompli of interpretation.

*Mission Statement:*

Advancing knowledge, appreciation and conservation, of Antarctica and the Southern Ocean for the benefit of New Zealand and the world community through leadership, partnership, and involvement in high quality Antarctic related activities.

*Vision:*

Antarctica: refreshing global ecosystems and the human spirit  
(1998-99 Annual Report)

The question that is unasked in the mission statement and vision is, how can these conflicting value systems exist alongside each other without resulting in an amalgamation – edutainment, science for profit, self promotion and 'selling beds'. If we ask 'is the mission statement reflective of the activities of the organisation', we can see that the commercial interests of the institution have been excluded, or re-termed 'high quality Antarctic related activities'. Is there any divergence between statement and action? Yes, there is divergence from the outputs purchased in the statement and there is divergence from the activities of the organisation. What the mission statement achieves is a controlled and 'managed' initial interpretation that is indisputable.

Comparing snapshot images – Two 'shots' of scientists and tourists from Antarctica New Zealand.



Figure Two: Tourist 'consuming' Antarctica through film. The tourist has an observatory role in the environment. The tourist is an object of consideration within the frame of the environment. (Source: Gillian Wratt).

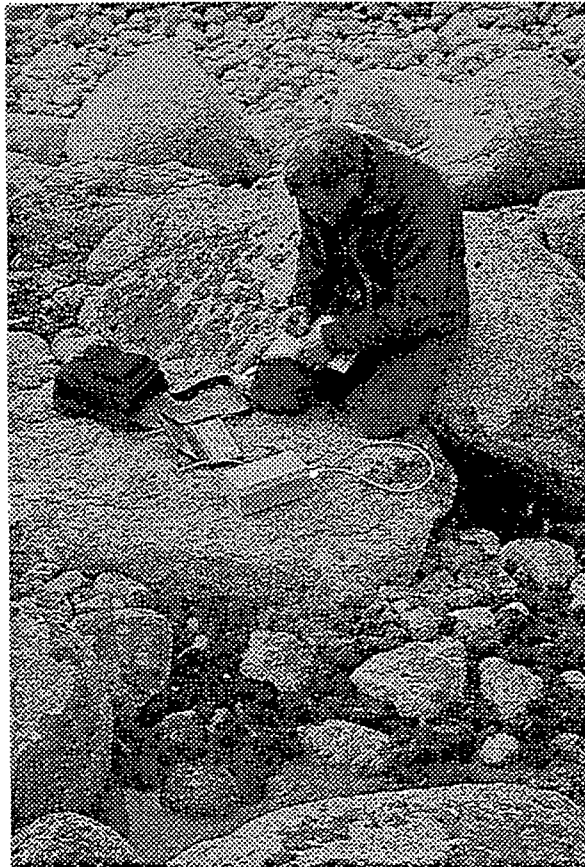


Figure Three: Scientist involved in an activity, unravelling some understanding not seen by the viewer. The scientist is a participator in the environment, analysing, unravelling immersed in the activity. (Source: R Seppelt).

The scientist is in a position of power, because their activities are exclusive, whereas the tourist activity is common. The 'scientist' is an intriguing picture, the 'tourist' a parasitical one. What value systems are at work here? Firstly, the perceptions of the photographer on how and what was important to photograph, and secondly the perceptions of viewers interpretation.

### **ASOC (Antarctic and Southern Ocean Coalition)**

ASOC is a coalition of environmentally/ethically concerned bodies (230 organisations in 50 countries). Their role in the Antarctic community is manifold and within ASOC there is a continuum of value sets. In this sense ASOC mirrors the Treaty members. Consequently there is no mission statement to summarise a 'vision', but institutionalised (through a web site and papers) responses to particular problems. The different value sets are homogenised into a particular response to tangible environmental issues through consultation. Values are disseminated in a variety of ways, often through a three tiered response - public advocacy, engagement with officials, debate with key political figures. The body is international, and is able to cut across national lobbying and link similar members of the Antarctic community and general public. There is much evidence within publications to suggest that differentiation occurs by ASOC between scientist and tourist. Differentiation also occurs between large scale and small-scale tourism and between regulated and unregulated tourism.

As the level of human activity in Antarctica grows a mechanism for making basic value judgements about the desirability of proposed activities, types and scale of activities is a necessary companion to the evaluation of environmental impacts.

*(Large Scale Antarctic Tourism: ASOC: 1999)*

The values that are at work here are not merely interpretative but recommend significant alternatives to current practice and the interpretation of ATS.

ASOC believe that the Antarctic Treaty System needs to re-examine the priority and effectiveness of regulating Antarctic activities solely through EIA"

*(Large Scale Antarctic Tourism: ASOC: 1999)*

There is a marked divergence between the interpretation of the ATS by the Ministry of Foreign Trade and Antarctica New Zealand. Whereas Antarctica New Zealand negates the issue of commercial activities in their mission statement, ASOC identifies the conflicts that exists between these values and the protocol.

Profit making may pose conflicts with the fundamental purposes of the Protocol, namely the protection of the Antarctic environment and its dependent and associated ecosystems.

*(Large Scale Antarctic Tourism: ASOC: 1999)*

The distinction is made between instrumental value (tourism) and wilderness and intrinsic values. The distinction between values placed on science activities and tourist activities is great. A cautionary approach is applied to tourist activities and a promotional one to science.

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ASOC continues to place great emphasis on working with Antarctic research scientists to ensure that the Protocol is implemented, and to continue to promote the importance of Antarctic science with governments and citizens.

([www.ASOC.org](http://www.ASOC.org))

For the most part, we were encouraged by the willingness of most operators to really try and evaluate alternative ways of conducting their activities to minimise their impact.

([www.ASOC.org](http://www.ASOC.org))

The implicit suggestion is that there is conflict between tourist activities and minimising their environmental impact.

**Comparing snapshot images – Two ‘shots’ of scientist and tourist (a Greenpeace view).**

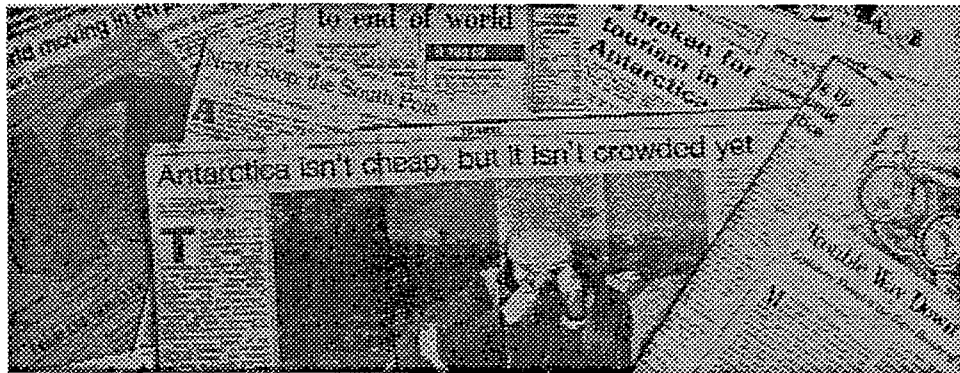


Figure Four: Tourism represented as a media event. The image shows the method of (re)presentation rather than individuals within an environment. The tourist is pictured in a media environment, as a site of contestation. The image is interesting because it shows the links and conflicts between media and tourist industry. (Source: Louise Bell).

and the alterations to their attitudes and actions as a result of visiting this unique place – is to be encouraged.

### ‘Information Sightseers’ – Perceptions of Science

In considering scientific and tourist activities in Antarctica at the *Antarctica 150: A Scientific Perspective <-> Policy Futures* Workshop, Brian Foster suggested “a valid question is whether scientists (information sightseers) have any more right to intrude than tourists (scenery sightseers), and whether the former are self-promoting or altruistic”.

Altruism is one of the common perceptions of science – that the results of research will contribute to the “common good”. Whilst recognising that commercial gain can, and does, arise from scientific research, the suggestion that information is the scientific “currency” highlights a fundamental difference between the discipline of science and other activities occurring in Antarctica. The freedom of information is safeguarded by Article Three of the Treaty.

Where commercial interests erode this freedom of information “for the common good”; the fundamental “right” to be in Antarctica must be called into question. This is not to suggest that commerce cannot sponsor scientific research, but that the motivation behind such sponsorship must be examined, and the scientific community take safeguards to protect the freedom of information in the same way that commerce might. It is not in the greater good of science or Antarctica to have expensive studies undertaken if the results are to be declared “commercially sensitive” and denied to others in the field. Traditionally, published data has been open to facilitate this process of peer-review that is essential to the credibility of scientific research. Should commercial interests dominate, Antarctica may no longer be able to pride itself on a system of management which some have held up to be a global model of international co-operation.

On an individual basis, scientists may be strong advocates for Antarctica, but they may also be equally strong advocates for their own field of study. Some scientists are focussed on one aspect of the whole, and may see far less of the geographical Antarctic than the average tourist. But the individuals are part of a collective body of knowledge, of the discipline of ‘Science’, quite apart from the activity associated with their work. Comprising many scientific disciplines, and encompassing a diverse and, at times, conflicting range of views, means that the resultant vision of ‘Science’ while at times unwieldy, is on a scale beyond that of tourism. The depth of combined knowledge available through the scientific community makes ‘Science’ – the predominant activity in the Antarctic – the most reliable ambassador for the region, if not the only one.

“Furthermore, through frequent personal interchange, sustained development of collaborative initiatives and the shared experience in this most challenging of regions, Antarctic scientists are outstanding ambassadors of peace. There are few places in this small planet where humankind has achieved so high a spirit of co-operation and so deep a mutual understanding of each other”.

(Drewry, 1994).

### “Environmental Stewards of Antarctica”

IAATO, the International Association of Antarctic Tour Operators, was set up in 1991 to “address issues between the operators regarding Antarctica”.

A set of Antarctic Visitor Guidelines, and guidelines for tour operators formed the basis for tourism which could provide “a model for environmental protection of other endangered areas on earth”. (Antarctic Visitors Guidelines, IAATO, 1991)

In defending their right to operate in Antarctica, tour operators have sought to present themselves on an equal footing with other parties involved in Antarctica. For example, the introduction to the above guidelines describe Antarctica as “a landmark example of the capacity of a tri-partite coalition comprising scientific organisations, governmental bodies and the travel industry to facilitate responsible tourism” The language of equality used assumes equal rights to the continent.

“Responsible tourism” can be taken a stage further, with the suggestion that the tourist industry has a significant responsibility additional to that of maximising profit to shareholders and protecting Antarctica as a commercial asset. Anne Kershaw, Managing Director of Adventure Network International, made the claim at the 1998 Futures Workshop that “tour operators and tourists are the true environmental stewards of the Antarctic”. The differentiation embodied in this choice of language here is self-imposed positive discrimination.

The ATS seeks to protect Antarctica for science – here we have the suggestion that tourism might protect Antarctica *from* science. Is this desirable? Is it warranted?

Historically, there are many examples of undesirable environmental practices associated with scientific activity and the logistical support of such in the Antarctic. One well-publicised example is that of refuse disposal, which has been highlighted by concerned “environmental watchdog” groups – who often back up their observations with their own scientific research.

It might be recalled, as an aside, that early explorers and scientists from what we now term the “heroic era” followed the environmental ethos of their time and left large amounts of refuse, personal belongings and abandoned buildings and equipment. These are now regarded as

Antarctic Treaty

Differentiation between science and tourism, or perhaps positive discrimination in favour of science, is evident in the Antarctic Treaty itself. (Appendix). It is likely that any differentiation at this level will be mirrored by national policy, legislation and programmes of signatory nations.

The Treaty was agreed to ensure the “use of Antarctica for peaceful purposes only”. Military use is expressly prohibited. Scientific research and investigation is the only use of Antarctica specifically referred to and many of the Treaty provisions are specific to science activities in Antarctica. This is evidence of differentiation between science and other activities, perhaps implying that other activities are secondary to science but not actually discriminating against any particular activity.

The major case of discrimination occurs in Article IX requiring a Contracting Party to “demonstrate its interest in Antarctica by conducting substantial research activity there”. There is no provision for a State to demonstrate its interest in Antarctica through substantial involvement in any other activity. This effectively ensures that science maintains a central role, to the detriment of nations and non-governmental organisations having other interests.

The ideas of co-operation, peaceful purposes, international harmony and interests of all mankind recur throughout the document. It is implied that science embodies these concepts. It could be argued that other uses of Antarctica not only have to be peaceful, but also encourage co-operation, international harmony and be of benefit to all mankind.

The Antarctic Treaty established co-operation in Antarctica based on two main pillars, peace and research, and Antarctica has often been called “a continent for science”.

The ATS continued to evolve to accommodate new circumstances and demands, reflecting changing public opinion. Conservation, barely mentioned in the Treaty has been a recurring theme as reflected in the 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora, the 1972 Convention for the Conservation of Antarctic Seals, and more recently the 1991 Protocol on Environmental Protection (Madrid Protocol). Reflecting the growing importance placed on the environment the ‘Continent for Science’ concept has also evolved and the Madrid Protocol designates Antarctica as “A Natural Reserve Devoted to Peace and Science”. Clearly, this establishes a primary role for science in Antarctica with other activities being of less importance.

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### New Zealand Government Strategic Interests

The Antarctic Treaty is implemented in New Zealand by Government policy and legislation to achieve the Government's strategic interests. The New Zealand Government strategic interests in Antarctica and the Southern Ocean reflect the principles of the ATS, namely peace, science and conservation for the benefit of the world community including New Zealand. However, promotion of New Zealand's economic wellbeing is specifically identified as a strategic interest, providing such economic opportunities fall within the Treaty System. Science itself does not come across as a strategic interest in its own right, but rather as a means of achieving other interests via the Treaty System. There is differentiation here between science and economic opportunities, i.e. tourism, in that science is perceived to be underlying New Zealand's involvement in Antarctica as opposed to a specific strategic interest.

### New Zealand Antarctic Legislation

The principal New Zealand legislation relating to Antarctica includes:

- Antarctica Act 1960 – ratifying the Antarctic Treaty
- Antarctic Marine Living Resources Act 1981 – ratifying CCAMLR
- Antarctica (Environmental Protection) Act 1994 – ratifying the Madrid Protocol
- New Zealand Antarctic Institute Act 1996 – establishing Antarctica NZ

The Antarctica (Environmental Protection) Act 1994 states its purpose as the protection of the Antarctic environment, valuing the area for scientific research. This differentiates scientific research from other activities giving precedence to science. Another fundamental requirement of the Act is the submission of Environmental Evaluations for all proposed activities in Antarctica. This applies to both science and tourism activities.

The New Zealand legislation is not specifically biased towards either science or tourism beyond reflecting the differentiation inherent in the international agreements on which it is based.

### New Zealand Officials Antarctic Committee (OAC)

The OAC comprises representatives of many government organisations including the Ministry of Research, Science and Technology (representing science interests) and Ministry of Foreign Affairs and Trade (tourism interests) and is the primary source of policy advice to the Government. Item 8 of the Terms of Reference states "The Committee is expected to liaise



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with domestic stakeholders, including tourism interests, the relevant scientific community and environmental groups on Antarctic matters". Both science and tourism interests are covered.

### Antarctica New Zealand Statutory Responsibilities

The New Zealand Antarctic Institute, Antarctica New Zealand, is charged to develop, manage, and execute New Zealand activities in Antarctica, and additionally, to maintain and enhance the quality of New Zealand Antarctic Science. There is differentiation here in that science is given specific mention but at the same time there is no exclusion of tourism, or any other activity. Once again, science is automatically recognised as an acceptable activity.

### New Zealand Visitor Guidelines

In 1991 the International Association of Antarctic Tourist Operators (IAATO) compiled a set of guidelines for visitors to the continent. These have been adopted for use by various nations. The New Zealand Antarctic Society published guidelines for New Zealand Vessels in 1993. More recently, in 1997, The Ministry of Foreign Affairs and Trade published a document "Guidelines & Procedures for Visitors to the Ross Sea Region". The document is explicitly aimed at commercial tourist operations but states "The rules, procedures, and environmental management principles, however, apply to *all* visitors to the Ross Sea Region". Government activities are covered by Antarctica New Zealand guidelines and codes of conduct etc. One instance in which commercial operations are treated quite differently is the established practice for national representatives to accompany commercial tours. This gives a greater degree of control over enforcement of the guidelines. There appears to be no "observer" requirement for national parties undertaking scientific activity. Riffenburg (1998) has documented several instances of tour groups witnessing members of national programmes, both science and support staff, violating the guidelines, apparently unaware of the requirements. This causes confusion amongst tour clients and resentment at what appears to be a case of 'one set of rules for them and another for us'.

While the intention is for the same principles to guide all Antarctic activities, the reality is somewhat different. By requiring observers there is considerably more control and enforcement with respect to tourism than there is to science activities.

There is evidence that differentiation and discrimination between science and tourism does occur within ATS Institutions. Much of this stems directly from The Antarctic Treaty. Governments are required to reflect the Treaty within their own national legislation and

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institutions. Examination of the New Zealand system shows evidence of this differentiation being perpetuated.

### Why is differentiation institutionalised in the ATS?

In order to understand the institutionalised differentiation it is first necessary to look at the history of the Antarctic Treaty System and its evolution over time.

In the years leading up to the International Geophysical Year 1957-58 (IGY) "the omens for Antarctica seemed gloomy, with quarrels over sovereignty, overriding of science by military concerns, and ever-present in the background, the 'cold war' between the western nations and the USSR" (Fogg 1992). In 1948 the USA proposed to the seven claimant nations that Antarctica become territory under international trusteeship of an eight party condominium. This was unsuccessful and in 1950 the USSR advised those nations that it would refuse to recognise any decisions taken on the Antarctic regime without its participation. "At this juncture the only voice speaking clearly on Antarctica was that of science" (Fogg 1992).

In 1950, scientist Lloyd Berkner proposed a Third International Polar year in 1957-58. The scientific community took this idea forward, expanding the scope, to become the IGY. Political tensions threatened to intrude on the programme but the organising committee, CSAGI (Comite Speciale de l'Annee Geophysique Internationale), maintained that its members represented science and not their countries. Co-operation and free exchange of data were fundamental tenets of the IGY.

The IGY was an overwhelming success not only in terms of the valuable scientific results but also the political outcomes. A continuation of international scientific co-operation was proposed and agreed. From this position it was a small but significant step to agree to a treaty reserving the Antarctic continent for science. "The Antarctic Treaty is a thoroughly scientific document" (Fogg 1992). That is to say that it enables difficult problems to be resolved by providing a method of approaching them. Sovereignty, the major obstacle prior to the Antarctic Treaty, is relatively meaningless and unenforceable due to the inhospitable nature of Antarctica. It is also scientifically irrelevant so could be put aside within the scientific framework of the Treaty. Perhaps it is significant to note that one of the key figures involved in drafting the treaty, Dr Brian Roberts of the British Foreign Office, was a scientist by training. On the Antarctic Treaty Fogg (1992) notes "we need not give the politicians who framed it any great credit for altruistic desire to further science but they had the acumen to see that science offered a means of avoiding the problems which were besetting the Antarctic".

Science is so deeply entrenched in the ATS that to remove science would be to remove the ATS. While not perfect, this science-based model overcame the not insignificant divisions in international relations where traditional approaches had failed. However, it is not to say that politics are excluded from the Antarctic arena in this new era, but rather expressed in a different manner. "Science, proving the international currency of Antarctic law and politics is often utilised in an instrumental fashion for the pursuit of national policy interests" (Beck and Dodds, 1998).

The following diagram (Drewry, 1994) emphasises that science is not just another use of Antarctica but rather it is the core of the ATS. In this view, tourism is shown to be one of several examples of commercial exploitation, a use of Antarctica.

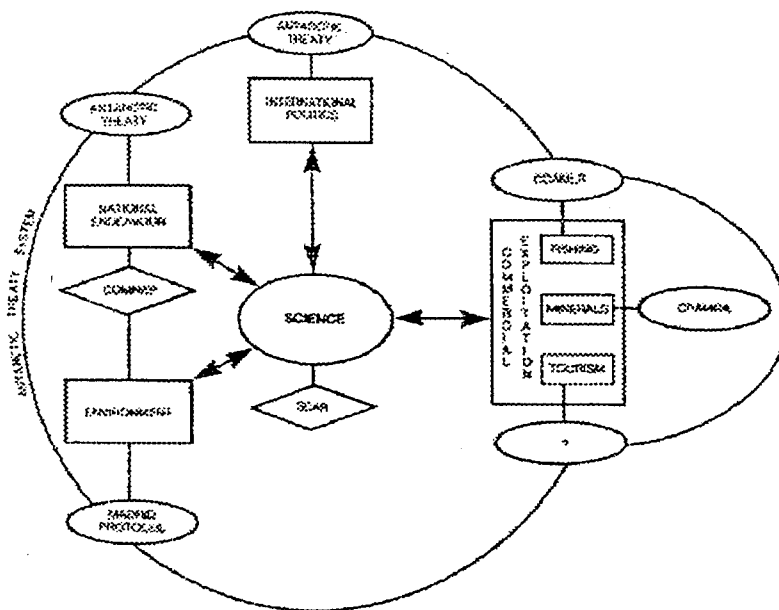


Figure Six: Interactions between science activity (*centre*) and various other uses of Antarctica (*boxes*), related elements of the ATS (*ellipses*) and international co-ordinating bodies (*diamonds*).

Institutionalised differentiation and discrimination between science and tourism is inherent in the ATS because the Antarctic Treaty is founded on science and embodies the values of science.

## Commercial Activity

Drewry (1994) proposes a framework of science and commercial exploitation in Antarctica that is wholly centred on science. To try and remove emotion from the discussion, we will refer to commercial activity rather than exploitation. This framework considers the interactions

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between science activity and various other uses of Antarctic (national endeavour, international politics, environment, fishing, minerals and tourism) related elements of the Antarctic Treaty System (Antarctic Treaty, Madrid Protocol, CCAMLR, CRAMRA), and international co-ordinating bodies, including SCAR and COMNAP but excluding IAATO.

The shape of the diagram could suggest an dividing amoeba with, for now, a very large nucleus around science, and a small but growing nucleus around commercial activity. The upstart nucleus of commercial activity may grow and separate from science, grow to consume science, or grow in a peaceful, if uneasy, co-existence with science.

The failure of the Treaty System to ratify CRAMRA, the Convention on the Regulation of Antarctic Mineral Resource Activities need not suggest a change of attitude toward commercial activities, or suggest that had CCAMLR followed after CRAMRA, instead of preceding it, that it would have not been ratified either. The two commercial activities of fishing and mining fulfil different needs for humankind, although with one common activity of Antarctic commercialism.

The immediate need for food may well be greater than the long term need for fisheries protection; whereas, the need for minerals could be seen by many as a device for economic expansion without immediate purpose. It is likely that within the 50 year period of the mining ban imposed by the Madrid Protocol, the mining industry will develop economic extraction methods to process Antarctic mineral deposits, as has been done in the Arctic region. Mineral and hydrocarbons deposits in Antarctica are generally considered to be exploitable if they were located in a less remote and inhospitable environment (<http://www.antarctic.com.au/encyclopaedia/physical/Minerals.html>).

Tourism, as an industry, needs to examine it's own motives and values and reconcile these with the potential short and long term impacts of their operations in the Antarctic. The true comparison is not between responsible tour operators and "the bad guys" but between tourist activity and exclusion of tourism as an activity. The perceived benefits arising from tourism must be irrefutably demonstrated in order to justify the activity, in the same way that science can be called upon to justify it's activities and the resultant production of knowledge for "the greater good".

### Is Institutionalised Differentiation Valid?

Differentiation in favour of science is institutionalised in the ATS. This has come about as a result of the Antarctic Treaty developing out of the IGY in 1957-58. With a focus on scientific co-operation and peace, for the benefit of all mankind, the Antarctic Treaty succeeded

remarkably well in overcoming sovereignty issues that threatened international politics and harmony. Fogg (1992) indicated that in the Antarctic Treaty, science “seems to have given a hope of movement towards more rationality and more peaceful solutions to international problems”.

The success of the ATS is largely attributable to an understanding amongst member states that they act in the interest of the international community by limiting the Antarctic's use to peaceful purposes and scientific research. For as long as the benefits from Antarctic activities remain primarily intangible and communal i.e. peace, knowledge, conservation, there is little reason to pursue the question of ownership. “Conservation of the Antarctic ecosystem provides a public or collective good from which the whole international community or ‘all mankind’ (Preamble to the Antarctic Treaty) benefits, even if outsiders play the role of the free rider who does not contribute to its creation” (van der Lugt, 1997).

The nature of commercial activity is in direct conflict with present Antarctic values of co-operation and communal benefit. If resources are to be exploited for commercial gain the question of ownership cannot remain latent. In fact during the CRAMRA debate a number of nations quickly became involved in the ATS when it seemed that commercial mining may be permitted. Institutionalised differentiation may be necessary and justifiable in order to protect the values we have placed on Antarctica.

For this reason alone the institutionalised differentiation between science and tourism (commerce) can be justified.

## Conclusions

Antarctica is a unique place, governed by a unique system, and is valued as more than just a resource to exploit. Commercial values prevalent throughout other parts of the world need not be applied to Antarctica.

Science is the discipline underpinning the Antarctic Treaty System and, for all the commercial pressures brought to bear on it, does not hold identical values to the commercial sector. The examples of freedom of information and co-operation for the greater good, of collective effort and strict attention to methodology and reporting are dwelt on elsewhere.

Tourism can differentiate itself from science on the basis of fundamental values, or the need to remain commercially viable and return a profit, but not on the “right” to usurp an activity

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which, in everything from the development of logistics to the methods of monitoring environmental impacts, underpins its own activities in every way.

With increasing pressure from commercial operators, it is impossible that the ATS members identify a set of values against which to judge proposed activities in the Antarctic.

While “environmental monitoring will define the baseline from which to analyse interactions between ecological processes in the Antarctica, environments and tourist activities” (Acero and Aguirre, 1994), the carrying out of such monitoring is not, on its own, a justification for conducting of the activity.

This environmental focus is appropriate, but should not preclude consideration of a broader range of values.

While a mere 200,000 people have visited the Antarctic continent to date audiences in transport and technology will enable more people to travel to, and survive in, this inhospitable environment, with increasingly greater degrees of comfort. Remoteness and geographical isolation alone can not be relied on to protect Antarctica.

Paraphrasing Arapaho Indian Chief Niwot:

“People seeing the beauty ... will want to stay, and their staying will be the undoing of the beauty.”

As the scale of human activities in the Antarctic increases, the appropriateness of each activity must be continually reassessed.

Value systems can change, and arguments used by commercial operators in Antarctica need to be carefully examined. While responsible operators are proactive in environmental impact monitoring and in reducing criticism by engendering goodwill and co-operating with the scientific community, this should not lead to an automatic acceptance of their activities in the Antarctic.

Tourism should not be held in direct comparison to science, rather the values of each should be examined and, where appropriate, endorsed by the Antarctic community.

We'd like to propose another value, that of education. A value that we believe should be included and endorsed by the Antarctic Community.

As Brian Foster suggested at the *Antarctica 150: Scientific Perspectives <> Policy Futures Conference*, 1990,

“Maybe our justification of research and of tourism, or of any activity in Antarctica will have to depend on necessity, whether it is necessary to experience, or explore, or exploit the tangible and not so tangible resources of our only common continent.”

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## Appendix

### THE ANTARCTIC TREATY

The Governments of 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,

Recognising 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;

Acknowledging the substantial contributions to scientific knowledge resulting from international co-operation in scientific investigation in Antarctica;

Convinced that the establishment of a firm foundation for the continuation and development of such co-operation 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;

Convinced also that a treaty ensuring the use of Antarctica for peaceful purposes only and the continuance of international harmony in Antarctica will further the purposes and principles embodied in the Charter of the United Nations;

Have agreed as follows:

#### ARTICLE I

1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, inter alia, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvres, as well as the testing of any type of weapons.
2. The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.

#### ARTICLE II

Freedom of scientific investigation in Antarctica and co-operation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty.

#### ARTICLE III

1. In order to promote international co-operation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:
  - (a) Information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;
  - (b) Scientific personnel shall be exchanged in Antarctica between expeditions and stations;
  - (c) Scientific observations and results from Antarctica shall be exchanged and made freely available.
2. In implementing this Article, every encouragement shall be given to the establishment of co-operative working relations with those Specialised Agencies of the United Nations and other international organisations having a scientific or technical interest in Antarctica.

#### ARTICLE IV



1. Nothing contained in the present Treaty shall be interpreted as:

- (a) A renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;
- (b) A renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;
- (c) Prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.

2. No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.

#### ARTICLE V

1. Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.

2. In the event of the conclusion of international agreements concerning the use of nuclear energy, including nuclear explosions and the disposal of radioactive waste material, to which all of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX are parties, the rules established under such agreements shall apply in Antarctica.

#### ARTICLE VI

The provisions of the present Treaty shall apply to the area south of 60 deg. South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area.

#### ARTICLE VII

1. In order to promote the objectives and ensure the observance of the provisions of the present Treaty, each Contracting Party whose representatives are entitled to participate in the meetings referred to in Article IX of the Treaty shall have the right to designate observers to carry out any inspection provided for by the present Article. Observers shall be nationals of the Contracting Parties which designate them. The names of observers shall be communicated to every other Contracting Party having the right to designate observers, and like notice shall be given of the termination of their appointment.

2. Each observer designated in accordance with the provisions of paragraph 1 of this Article shall have complete freedom of access at any time to any or all areas of Antarctica.

3. 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 in accordance with paragraph 1 of this Article.

4. Aerial observation may be carried out at any time over any or all areas of Antarctica by any of the Contracting Parties having the right to designate observers.

5. Each Contracting Party shall, at the time when the present Treaty enters into force for it, inform the other Contracting Parties, and thereafter shall give them notice in advance, of

- (a) All expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organised in or proceeding from its territory;
- (b) All stations in Antarctica occupied by its nationals; and

(c) Any military personnel or equipment intended to be introduced by it into Antarctica subject to the conditions prescribed in paragraph 2 of Article I of the present Treaty.

#### ARTICLE VIII

1. In order to facilitate the exercise of their functions under the present Treaty, and without prejudice to the respective positions of the Contracting Parties relating to jurisdiction over all other persons in Antarctica, observers designated under paragraph 1 of Article VII and scientific personnel exchanged under subparagraph 1 (b) of Article III of the Treaty, and members of the staffs accompanying any such persons, shall be subject only to the jurisdiction of the Contracting Party of which they are nationals in respect of all acts or omissions occurring while they are in Antarctica for the purpose of exercising their functions.

2. Without prejudice to the provisions of paragraph 1 of this Article, and pending the adoption of measures in pursuance of subparagraph 1 (e) of Article IX, the Contracting Parties concerned in any case of dispute with regard to the exercise of jurisdiction in Antarctica shall immediately consult together with a view to reaching a mutually acceptable solution.

#### ARTICLE IX

1. Representatives of the Contracting Parties named in the preamble to the present Treaty shall meet at the City of Canberra within 2 months after the date of entry into force of the Treaty, and thereafter at suitable intervals and places, for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering, and recommending to their Governments, measures in furtherance of the principles and objectives of the Treaty, including measures regarding:

- (a) Use of Antarctica for peaceful purposes only;
- (b) Facilitation of scientific research in Antarctica;
- (c) Facilitation of international scientific co-operation in Antarctica;
- (d) Facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty;
- (e) Questions relating to the exercise of jurisdiction in Antarctica;
- (f) Preservation and conservation of living resources in Antarctica.

2. Each Contracting Party which has become a party to the present Treaty by accession under Article XIII shall be entitled to appoint representatives to participate in the meetings referred to in paragraph 1 of the present Article, during such time as that Contracting Party demonstrates its interest in Antarctica by conducting substantial scientific research activity there, such as the establishment of a scientific station or the dispatch of a scientific expedition.

3. Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting Parties participating in the meetings referred to in paragraph 1 of the present Article.

4. The measures referred to in paragraph 1 of this Article shall become effective when approved by all the Contracting Parties whose representatives were entitled to participate in the meetings held to consider those measures.

5. Any or all of the rights established in the present Treaty may be exercised as from the date of entry into force of the Treaty whether or not any measures facilitating the exercise of such rights have been proposed, considered or approved as provided in this Article.

#### ARTICLE X

Each of the Contracting Parties undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty.

#### ARTICLE XI

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1. If any dispute arises between 2 or more of the Contracting Parties concerning the interpretation or application of the present Treaty, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2. Any dispute of this character not so resolved shall, with the consent, in each case, of all parties to the dispute, be referred to the International Court of Justice for settlement; but failure to reach agreement on reference to the International Court shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 of this Article.

### ARTICLE XII

1. (a) The present Treaty may be modified or amended at any time by unanimous agreement of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX. Any such modification or amendment shall enter into force when the depository Government has received notice from all such Contracting Parties that they have ratified it.

(b) Such modification or amendment shall thereafter enter into force as to any other Contracting Party when notice of ratification by it has been received by the depository Government. Any such Contracting Party from which no notice of ratification is received within a period of 2 years from the date of entry into force of the modification or amendment in accordance with the provisions of subparagraph 1 (a) of this Article shall be deemed to have withdrawn from the present Treaty on the date of the expiration of such period.

2. (a) If after the expiration of 30 years from the date of entry into force of the present Treaty, any of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX so requests by a communication addressed to the depository Government, a Conference of all the Contracting Parties shall be held as soon as practicable to review the operation of the Treaty.

(b) Any modification or amendment to the present Treaty which is approved at such a Conference by a majority of the Contracting Parties there represented, including a majority of those whose representatives are entitled to participate in the meetings provided for under Article IX, shall be communicated by the depository Government to all the Contracting Parties immediately after the termination of the Conference and shall enter into force in accordance with the provisions of paragraph 1 of the present Article.

(c) If any such modification or amendment has not entered into force in accordance with the provisions of subparagraph 1 (a) of this Article within a period of 2 years after the date of its communication to all the Contracting Parties, any Contracting Party may at any time after the expiration of that period give notice to the depository Government of its withdrawal from the present Treaty; and such withdrawal shall take effect 2 years after the receipt of the notice by the depository Government.

### ARTICLE XIII

1. The present Treaty shall be subject to ratification by the signatory States. It shall be open for accession by any State which is a Member of the United Nations, or by any other State which may be invited to accede to the Treaty with the consent of all the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX of the Treaty.

2. Ratification of or accession to the present Treaty shall be effected by each State in accordance with its constitutional processes.

3. Instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America, hereby designated as the depository government.

4. The depositary Government shall inform all signatory and acceding States of the date of each deposit of an instrument of ratification or accession, and the date of entry into force of the Treaty and of any modification or amendment thereto.

5. Upon the deposit of instruments of ratification by all the signatory States, the present Treaty shall enter into force for those States and for States which have deposited instruments of accession. Thereafter the Treaty shall enter into force for any acceding State upon the deposit of its instrument of accession.

6. The present Treaty shall be registered by the depositary Government pursuant to Article 102 of the Charter of the United Nations.

#### ARTICLE XIV

The present Treaty, done in the English, French, Russian, and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the United States of America, which shall transmit duly certified copies thereof to the Governments of the signatory and acceding States.

In witness whereof, the undersigned Plenipotentiaries, duly authorised, have signed the present Treaty.

Done at Washington this 1st day of December 1959.[Here follow the signatures.]

The headings "Schedules" and "First Schedule" were substituted for the original heading "Schedule" by s. 3 (b) of the Antarctica Amendment Act 1970.