Book Reviews

Antarctic Science, **26** (2014) doi:10.1017/S0954102014000418

Exploring Antarctic Values

Edited by D. Liggett & A.D. Hemmings University of Canterbury Gateway Antarctic Special Publication Series No. 1301, New Zealand, 2013. ISBN 978-0473248512, 158 pp.

This small book contains the proceedings of the first workshop of the SCAR Social Sciences Action Group. The editors boldly state at the outset that it describes a peculiar project, by a diverse community, about a theme that does not lend itself to canalised thinking. Something to look forward to then! They emphasise that the discussion cannot be as clear cut as subjects such as 'protected areas', or 'Southern Ocean fishing', and as no work in the field has been done before there is no precedent for guidance on how to proceed. Prepare yourself for a journey into uncharted territory.

The book contains eight main chapters as well as an introduction and some conclusions. The first main chapter tackles value theory in the context of the Antarctic and it elegantly outlines the problem. Axiology, the study of values, is beset with ambiguities which are apparent in everyday language e.g. measured value (cash value), empirical value and moral value etc. No unique, generally accepted, definition of 'value' exists but at the core of the philosophical discipline lies the question of what is 'good' and 'right'. Intrinsic, economic and human values are discussed in the context of the Antarctic and consideration is given to the use of values as the underlying basis of decisions. The difficulties of reconciling individual's and society's values in reaching consensus are critical in the context of Antarctic affairs.

The next seven chapters are a veritable smorgasbord of subject matter. Chapter 3: Wilderness and aesthetic values, starts by discussing intrinsic and instrumental values or the difference that something has in "itself" and that bestowed on it by people. An online survey polled perceptions of wilderness and the aesthetic appeal of the Antarctic and revealed that these are identified as intrinsic and that built infrastructure is perceived as detracting from these values when present. Interestingly, respondents placed higher value on ice covered areas which might be of concern for conservation of ice free regions.

Chapter 4 reports on another survey which found that the Chilean public recognise the idea of Chilean sovereignty in Antarctica together with ideas of global common heritage, environmental protection and the importance of science and civilian occupation. Thus, in the eyes of the public, the notion of sovereignty extends beyond geopolitics to science, environmental management and cultural activities. The author identifies a concern that non-English speaking countries, with little capacity for scientific research, become disadvantaged if science is used as a "mode of colonisation".

Chapter 5 on 'Environmental management' concerns the advancement of strategic national interest in Antarctica, discussing how science might be used as a currency to promote nationalism and territoriality and exploring environmental initiatives as diplomatic strategy. Comprehensive environmental evaluations can be used to exert influence. New Zealand's attempt to designate the Ballenv Islands a Marine Protected Area failed because it was seen as bolstering sovereignty over the Ross Sea Dependency - an unfortunate outcome for environmental management. Similarly the Indian plan for a station in the Larsemann Hills failed as it was seen as a geostrategic play but ironically the main opposition, which came from Australia, could also be seen as a strategic game! Using examples in three areas of environmental management in Antarctica: the continental shelf, bioprospecting and tourism, the author demonstrates that either strategic national interests have been pursued under an environmental rationale or, on the other hand, there have been instances where effective environmental management has been thwarted if seen to compete with strategic national interests.

Next is chapter 6: The utility of official Antarctic inspections: symbolism without sanctions. This describes the inspection provisions under Article VII of the Antarctic Treaty, Article 24 of CCAMLR and the Madrid Protocol, and examines the findings of past inspections. Reports reveal disparities between nations, some being exemplars while others are far from perfect. There is no compelling evidence that inspections change behaviour and they are clearly more symbolic than practical. The most serious problems relate to fuel depots and waste management. Nevertheless, all Parties prioritise Antarctic values, especially scientific value and peace (no military activity, nuclear explosions or disposal of radioactive waste). Wilderness, aesthetic and intrinsic values relating to state of the environment and perception of human impact on the pristine state are more subjective and so it is hard to quantify how Parties plan and conduct themselves in the Antarctic. The work described in this chapter highlights the need to measure compliance with inspection recommendations.

Chapter 7 focuses a theme running through the preceding chapters on the case of South Africa in the Antarctic. The colonial and apartheid past of South Africa has alienated black South Africans from conservation, which is perceived as an elitist concern associated with dispossession, and anti-development resulting in low economic growth and job creation. This perception has relevance for understanding how other developing countries may perceive an apparently hegemonic environmental debate about conserving Antarctica. There exists the possibility that the legitimacy of the Antarctic Treaty could be undermined by the marginalisation of developing countries. The challenge is to develop measures of environmental values in the Antarctic relevant to the multi-cultural. multi-lingual population operating there.

Chapter 8 "Lines in the ice: classifying Antarctic Environments", discusses how Antarctica, although widely perceived as pristine is, in places, under pressure from human activities especially research, tourism and the logistics required to sustain these. There is a need for a regional approach to managing the issues and to develop classifications of environmental domains which go beyond previous classifications of Antarctica - much of the chapter is concerned with progress in this area. Past approaches have defined boundaries based on knowledge and belief of what drives variation in Antarctic environments so human values have played a significant role in classifications. To resolve these issues a numerical and spatial framework has been adopted for future conservation planning.

The final substantive chapter "Exploring the Southern Ocean: rational use or reversion to the tragedy of the commons", focuses on the Ross Sea fishery for the Antarctic toothfish and invokes Garrett Hardin's 'tragedy of the commons', a theme which is relevant to any discussion of the values we attach to the only continent with no native human population.

The differing backgrounds of the various authors have inevitably produced different understandings of values and as the editors point out the book provides a snapshot in time of the values and motivations presently driving Antarctic governance. Nevertheless, there is a fascinating theme running through the book of the interplay between national agendas in the Antarctic and values. There is more work to do in the future, for instance the arts were omitted here so no emotional dimension of values and aesthetics was considered. Furthermore, the editors conclude that the subject will undoubtedly need to integrate disciplines as it develops in order to provide a more detailed understanding and operationally useable context of Antarctic values.

There is fascinating writing here by people who have taken a step back and thought hard about the drivers of our attitudes to the Antarctic and how these shape the way we identify and deal with the problems that face us down south.

PAUL G.K. RODHOUSE

Antarctic Science, **26** (2014) doi:10.1017/S095410201400042X

Antarctic Futures: human engagement with the Antarctic environment

Edited by Tina Tin, Daniela Liggett, Machiel Lamers & Patrick T. Maher Springer, Dordrecht, Heidelburg, London, 2013. ISBN 978-94-007-6581-8, 360 pp. £90.

This book attempts a timely task of trying to bring the many strands of human impact on Antarctica together and make a stab at predicting the changes likely to occur over the next 50 years. The 35 authors have varying degrees of experience of Antarctic Treaty meetings but all have relevant Antarctic experience in one form or another. Of course, the Committee on Environmental Protection at the annual Antarctic Treaty Consultative Meeting is specifically charged with oversight of almost all the activities reviewed but access to its deliberations is limited and much of the dialogue there is both less well informed than this book and often ends up being politicised. This volume tries to focus on the published data and what we can learn from it, although politics necessarily intrudes through discussion of governance. With 15 chapters, the scope is wide but still not complete.

The Introduction gives a useful potted history of human discovery and exploitation in respect of whaling and sealing, research stations, tourism and fishing and then considers briefly how these impact the continent and surrounding sea, before outlining the governance tools used to manage these. Since the authors of this chapter apparently intended to provide here a conceptual framework for the rest of the book I was quite surprised that the framework was simply half a paragraph in the very short conclusions and consisted of three rather open ended questions. Surely a conceptual framework could be rather more, establishing a wider brief in which the human impacts could be seen to interact in various ways? My conceptual framework would have asked what role the Antarctic environment played at a global scale, how was its functionality damaged by historic impacts, what was the relative importance now of direct impacts versus indirect impacts on present and future functionality, what needed to be assessed to make management decisions, was the management/ governance tool set adequate and if not why not and then how these elements interacted in predicting the future. Many of these elements are considered in the