Antipodes to Terra Australis

Avan Judd Stallard

A thesis submitted for the degree of Doctor of Philosophy at
the University of Queensland in December 2010
School of History, Philosophy, Religion and Classics
Declaration by author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

I acknowledge that an electronic copy of my thesis must be lodged with the University Library and, subject to the General Award Rules of The University of Queensland, immediately made available for research and study in accordance with the Copyright Act 1968.

I acknowledge that copyright of all material contained in my thesis resides with the copyright holder(s) of that material.

Statement of Contributions to Jointly Authored Works Contained in the Thesis
No jointly-authored works.

Statement of Contributions by Others to the Thesis as a Whole
No contributions by others.

Statement of Parts of the Thesis Submitted to Qualify for the Award of Another Degree
None.

Published Works by the Author Incorporated into the Thesis
Avan Stallard, “Navigating Tasman’s 1642 Voyage of Exploration: Cartographic Instruments and Navigational Decisions”, *The Portolan*, v. 69, 2007 – incorporated into Chapter Seven in the subsections “Van Diemen’s Lands” and “Searching for Terra Australis”.

**Additional Published Works by the Author Relevant to the Thesis but not Forming Part of it**

Avan Stallard, “‘Better than the *Da Vinci Code*’: The Theological Edifice that is Gavin Menzies’ *1421*”, *History Australia*, v. 5, no. 3, 2008.

**Acknowledgements**

I would like to acknowledge the academic contribution made to this thesis by the following people. My primary and associate supervisors, Associate Professor Marion Diamond and Dr Martin Crotty. Dennis Cheshire, whose technical support averted multiple disasters and allowed me to focus on the stuff that mattered. Professor Bob Elson. Professor John Moorehead. Chet Van Duzer. Thomas Suarez. Dr Peter van der Krogt. Professor Tom Griffiths and Dr Libby Robin. Associate Professor W.A.R. Richardson. Professor John Logan Allen. Professor Edward Grant. Tony Campbell. Carlos A. Furuti. Dr Tas Van Ommen. Dr Martin Woods and Damian Cole. Mrs Pat McCann, who funds the Normann McCann Summer Scholarships to the National Library of Australia where I spent six weeks in 2005-2006, and the entire staff of the National Library of Australia who were welcoming and extremely helpful. Finally, a special debt is owed to Robert J. King, a fine scholar working outside the university system, who time and again selflessly shared research and insights.

**Abstract**

The idea of an imaginary southern continent persisted in European discourse for two millennia in an unbroken chain of scholarship stretching from antiquity to the cusp of modern times. The unavoidable question is what drove belief, and what compelled people to persist with the notion of a southern continent even when faced with falsifying evidence? In addressing this question I attempt to draw the historical traces together in a way that not only illuminates what people thought and what actions came from those beliefs, but also suggests how belief, desire and expectation structured the interpretation and reception of geographical data. Misconceptions
about the role that theories of hemispheric balance played in the discourse of a southern continent have long obscured the more complicated interplay of geographical lore and empirical discovery with the imperial and commercial milieus of early modern Europe. To say that people believed and held onto their belief in a southern continent because they wanted it to exist is to answer the basic question addressed to all imaginative geographies – why did people believe in something that does not exist? Where I attempt to go further is in showing exactly how desire and expectation structured the entire discourse as it evolved across the centuries.

**Keywords**

Antipodes; Terra Australis; southern continent; equipoise; symmetry; imaginative geography; historical geography; historical cartography.

**Australian and New Zealand Standard Research Classifications (ANZSRC)**

210399 Historical Studies not elsewhere classified 100%
## Contents

<table>
<thead>
<tr>
<th>List of Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>v</td>
</tr>
<tr>
<td>Introduction:</td>
<td>1</td>
</tr>
<tr>
<td>Un-Telling the Story</td>
<td></td>
</tr>
<tr>
<td>Chapter One:</td>
<td>12</td>
</tr>
<tr>
<td>Origins: Antipodes, Ancient and Medieval</td>
<td></td>
</tr>
<tr>
<td>Chapter Two:</td>
<td>50</td>
</tr>
<tr>
<td>The World as Palimpsest: The Dawn of New Worlds in the Age of Discovery</td>
<td></td>
</tr>
<tr>
<td>Chapter Three:</td>
<td>83</td>
</tr>
<tr>
<td>The Cartographers’ Southern Continent</td>
<td></td>
</tr>
<tr>
<td>Chapter Four:</td>
<td>112</td>
</tr>
<tr>
<td>Terra Australis Takes Shape</td>
<td></td>
</tr>
<tr>
<td>Chapter Five:</td>
<td>148</td>
</tr>
<tr>
<td>Mercator’s Southern Continent</td>
<td></td>
</tr>
<tr>
<td>Chapter Six:</td>
<td>170</td>
</tr>
<tr>
<td>Seeking Terra Australis</td>
<td></td>
</tr>
<tr>
<td>Chapter Seven:</td>
<td>193</td>
</tr>
<tr>
<td>Dutch Discovery</td>
<td></td>
</tr>
<tr>
<td>Chapter Eight:</td>
<td>223</td>
</tr>
<tr>
<td>Terra Australis Adrift</td>
<td></td>
</tr>
<tr>
<td>Chapter Nine:</td>
<td>260</td>
</tr>
<tr>
<td>An Icy End</td>
<td></td>
</tr>
<tr>
<td>Conclusion:</td>
<td>298</td>
</tr>
<tr>
<td>Mistaking Australia for Terra Australis</td>
<td></td>
</tr>
<tr>
<td>Bibliography</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Appendix One:</td>
<td>320</td>
</tr>
<tr>
<td>Origins of the Idea of Antipodes: Errors, Assumptions, and a Bare Few Facts</td>
<td></td>
</tr>
<tr>
<td>Appendix Two:</td>
<td>341</td>
</tr>
<tr>
<td>The Challenges of Aristotelian Cosmology</td>
<td></td>
</tr>
<tr>
<td>Appendix Three:</td>
<td>348</td>
</tr>
<tr>
<td>The Theory of Hemispheric Balance (Equipoise) and its Role in the Discourse of</td>
<td></td>
</tr>
<tr>
<td>the Imaginary Southern Continent</td>
<td></td>
</tr>
<tr>
<td>Appendix Four:</td>
<td>366</td>
</tr>
<tr>
<td>Squaring the Map</td>
<td></td>
</tr>
</tbody>
</table>
List of Figures

Figure 1a Representation of the ancient theory of zones.
Figure 1b Reconstruction of knowledge articulated by Hecataeus of Miletus.
Figure 1c A minimalist interpretation of Crates’ cosmography.
Figure 1d Reconstruction of Crates’ globe according to Norman J.W. Thrower.
Figure 1e Reconstruction of Crates’ globe according to Oliver J. Thomson.
Figure 1f Reconstruction of Crates’ globe according to J.B. Harley and David Woodward.
Figure 1g Reconstruction of Crates’ globe according to Günter Schilder.
Figure 1h T-O map from a 1472 edition of Isidore’s *Etymologies*.
Figure 1i Zonal map showing the Antipodes, from the *Liber Floridus*.
Figure 1j Eleventh century Macrobian map.
Figure 1k Beatus world map, 1086, Osma copy.
Figure 2a Giovanni Schiaparelli, map of Mars, 1886.
Figure 2b Representation of Ptolemy’s world geography in the Ulm edition of *Geographia*.
Figure 2c Henricus Martellus, world map *circa* 1489.
Figure 2d Martin Waldseemüller, world map, 1507.
Figure 2e *Cantino Planisphere*, 1502.
Figure 3a Giovanni Contarini, world map, 1506.
Figure 3b Johannes Ruysch, world map, 1507.
Figure 3c Lopo Homem, world map, 1519.
Figure 3d Alessandro Zorzi sketch map focused on the Indian Ocean, *circa* 1508-1526.
Figure 3e Alessandro Zorzi sketch map focused on Africa, *circa* 1508-1526.
Figure 3f Piri Reis, map fragment, 1513.
Figure 3g Francesco Rosselli, world map, 1508, Greenwich version.
Figure 3h Francesco Rosselli, world map, 1508, Holzheimer copy.
Figure 3i Francesco Rosselli, world map, 1508, Zwickau version.
Figure 3j Globe gores of a map contained in the collection of papers of Leonardo Da Vinci, *circa* 1512-1516.
Figure 3k Francesco Rosselli, world map, 1508, Florence version.
Figure 3l Reproduction of Johannes Schöner’s globe gores of the southern hemisphere, 1515.
Figure 4a Reproduction of Martin Behaim’s globe of 1492, detail.
Figure 4b Franciscus Monachus, map of the world, *circa* 1527.

Figure 4c Battista Agnese, world map, 1544.

Figure 4d Battista Agnese, portolan map centred on the Atlantic, 1544, detail.

Figure 4e Battista Agnese, world map, 1544, detail.

Figure 4f Jodocus Hondius, *Vera Totius Expeditionis Nauticae*, 1595, detail.

Figure 4g Antoine de la Sale, world map, 1521.

Figure 4h Oronce Finé, *Nova, et Integra Universi Orbis Descriptio*, 1531.

Figure 4i Anonymous world map *circa* 1530 held by the Biblioteca Apostolica Vaticana.

Figure 4j Jean Rotz in the *Boke of Idography*, 1542.

Figure 4k Pierre Desceliers, world map, 1550.

Figure 4l Pierre Desceliers, world map, 1550, detail.

Figure 4m Sebastian Münster, *Typus Universalis*, 1540.

Figure 4n Giacomo Gastaldi, *Universale*, 1546.

Figure 4o Gerard de Jode, *Universalis Exactissima*, 1555.

Figure 4p Paolo Forlani, *Universalis Descrittione di Tutta la Terra Conosciuta Fin Oui*, 1565.

Figure 4q Paolo Forlani, world map, 1560.

Figure 4r Sebastian Münster, *Typus Universalis*, 1569.

Figure 5a Gerhard Mercator, *Nova Et Aucta Orbis Terrae Descriptio Ad Usum Navigantium*, 1570.

Figure 5b Abraham Ortelius, *Typus Orbis Terrarum*, 1570.

Figure 7a 1670 copy of an original chart made onboard the *Duyfken*.

Figure 7b Hessel Gerritsz, map of the Pacific, 1622.

Figure 7c Chart based on an original by Hessel Gerritsz *circa* 1618, updated with discoveries to 1632, detail of the Western Australian coast.

Figure 7d Jodocus Hondius, *Vera Totius Expeditionis Nauticae*, 1595, detail.

Figure 7e Map depicting the discovery of a passage round Cape Horn by Schouten and le Maire, 1619.

Figure 8a Jodocus Hondius senior, *Orbis Terrae Novissima Descriptio*, 1602.

Figure 8b William Greent, *A New and Accurate Map of the World*, 1625, detail.

Figure 8c Jodocus Hondius junior, *Nova Totius Terrarum Orbis Geographica Ac Hydrographica Tabula*, 1625.

Figure 8d Henricus Hondius, *Polus Antarticus*, *circa* 1637.
Figure 8e João Teixeira, *Mapa Detodo El Mundo*, 1630.

Figure 8f João Teixeira, map of South East Asia and the Indian Ocean, 1630, detail.

Figure 8g Melchior Tavernier, *Charte Universelle de Tout le Monde*, 1628, western hemisphere.

Figure 8h Joseph Moxon, *A Plat of all the World*, 1655.

Figure 8i Nicolas Sanson, *Mappe-Monde, ou Carte Generale du Monde*, 1651.

Figure 8j Giovanni Battista Nicolosi, world map, 1660.

Figure 8k Giovanni Battista Nicolosi, world map, 1660, detail.

Figure 8l Alain Mallet, *Isles de Salomon*, 1683.

Figure 8m Melchisedech Thevenot, from his *Relations de divers voyages curieux*, 1663.

Figure 8n Emanuel Bowen, *A Complete Map of the Southern Continent*, 1744.

Figure 9a John Bowles, *A Map of the World or Terrestrial Globe in Two Planispheres*, 1740.

Figure 9b John Senex, *A Map of the World*, 1725, detail.

Figure 9c Philippe Buache, *Carte des Terres Australes*, 1739, detail.

Figure 9d Philippe Buache, *Carte des Terres Australes*, 1754.

Figure 9e Philippe Buache, *Carte du Globe Terrestre*, 1746.

Figure 9f William Whitchurch, *Chart of part of the South Sea, circa. 1771-1779*.

Figure 9g William Hodges, “Ice Islands with the Resolution and the Adventure”.

Figure 9h Jean-Claude Dezauche, *Hémisphere Méridional pour voir plus distinctement les Terres Australes*, circa. 1785.
Introduction

Un-telling the Story

Student: And this is a map of the whole world. Do you see? Here’s Athens.
Strepsiades: What do you mean? I don’t believe you; I don’t see any jurors on their benches.
Student: I assure you this area is Attica.
Strepsiades: Then where are the men of Cicynna, my fellow-demesmen?
Student: They’re in this part. And here, as you see, is Euboea, lying stretched out beside the mainland for a very long distance.
Strepsiades: I know; we laid it out, we and Pericles. But where’s Sparta?
Student: Where is it? Here.
Strepsiades: How close to us! Rethink that one, please, so as to take it a good long way away from us.
Student: In that case, by Zeus, you’re going to howl!

-- Aristophanes (circa. fifth century BC)

Terra Australis, Antipodes, the Great South Land: these are familiar names to a familiar story. That story normally goes something like this.

Upon the disk that was figured to be the Earth it was known in ancient times that three connected lands existed, collectively known as the oikoumene, or known world: they were Asia, Africa, and Europe. Only a fraction of each land was known, but it was still enough to comprise a vast territory. But then some genius scholar – probably Pythagoras, though perhaps some other ancient Greek – realised that the earth was not flat, but spherical. With this revelatory knowledge, some other scholar – probably Aristotle, maybe Eratosthenes – struck upon an obvious conclusion on the basis that the physical world is ordered by a principle of symmetry: if there is a large landmass in terms of the oikoumene on one side of the earth, then there must be a symmetrical reflection of that landmass on the opposite side. That meant Antipodes. What is more, some other ancient scholar – just who is never mentioned – struck upon the principle of

---

equipoise: the theory that without an equal volume of land in each hemisphere of the globe the earth would be unbalanced on its axis, and calamity would ensue. That line of reasoning also led to the conclusion that Antipodes existed. With the compelling reasoning of symmetry and equipoise underwriting the concept of Antipodes, scholars from ancient Greece through to medieval Europe perpetuated the notion of Antipodean lands. In the early modern period, when new geographical knowledge of the world started flooding into Europe, the idea of symmetry lost relevance, but the theory of equipoise became increasingly prominent. It is that theory which propelled the southern continent into the geographical limelight, where it became a geography so richly imagined by cartographers and cosmographers that it was as if this imaginary continent truly did exist – which it sort of does, in the guise of Australia. It is only when Captain Cook proves there is no southern continent by sailing through its purported borders that the Antipodes and the theory of equipoise are finally laid to rest.

This is the story of the southern continent as I have normally encountered it, and, in the early days of my PhD researches, it was the story I accepted. With time, however, I have come to understand that key tenets of this story are wrong. It was not Aristotle, nor can we be sure it was Eratosthenes, who first posited a southern continent. Crates, the first person who we can be sure did posit a southern continent, did not subscribe to a principle of cosmographic symmetry, or to a theory of equipoise. As for the belief in Terra Australis that burgeoned during the early modern period: it was not the product of widespread subscription to ideas about the need for the hemispheres to be balanced. And the notion that Terra Australis can be considered a prefiguring of Australia is muddled and wrong-headed. In short, the story of the southern continent as told in countless books and articles has been premised upon a set of fundamental errors and assumptions. Thus, while the general chronology of the discursive construct that started as Antipodes and evolved into Terra Australis has been established, and while there is a corpus of evidence (maps, journals, cosmographic texts, etc) that all scholars will have recourse to, the
analyses of the discourse – the attempts to make sense of the proliferation of the imaginary southern continent – have been lacking.

To be clear, it is not that there is any shortage of information or evidence already in the public domain; it is that the vast majority of books and articles are underwritten by false assumptions that preclude deeper analysis. For example, recently I leafed through *The Dutch Down Under* to check for any insights into the mindset of the Dutch. Instead, in the second paragraph, the reader is told this:

> As early as the time of Ptolemy of Alexandria (±AD85–161), the existence of a Great Southland had been postulated, even though at that time people still believed the world was flat. A flat sphere, with such a large landmass as exists in the northern hemisphere, was believed to require a landmass of equal size in the south, to prevent that sphere from tilting. Ptolemy’s *Geographia* remained current right up to the 16th century.

Starting with such a catalogue of errors and assumptions, the prospect of deeper analysis and insight is guillotined from the outset. This is a shame, for it means that most of the innumerable historical artifacts that have been tirelessly dug up by researchers have never really been put to work. For all the impressive collections of minutiae, when I began this project there was not a single text that brought together the disparate traces that go into forming the story of southern lands and attempted to articulate a bigger picture – a syncretic analysis of how the discourse worked, and

---

2 One notable exception is Alfred Hiatt’s recent book, *Terra Incognita*. (Alfred Hiatt, *Terra Incognita: Mapping the Antipodes before 1600* (London: University of Chicago Press, 2008).) There are also a number of studies on specific topics within the framework of the general subject which bring considerable insight and analysis to their discussions, such as works by W.A.R Richardson, Chet Van Duzer, and Günter Schilder, to name a few. (W.A.R. Richardson, "Mercator's Southern Continent: Its Origins, Influence and Gradual Demise," *Terrae Incognitae* 25 (1993); Chet Van Duzer, "The Cartography, Geography, and Hydrography of the Southern Ring Continent, 1515-1763," *Orbis Terrarum* 8 (2005); Günter Schilder, "Organization and Evolution of the Dutch East India Company's Hydrographic Office in the Seventeenth Century," *Imago Mundi* 28 (1976.).

how it evolved. The big picture had already been assumed on the basis that people in both ancient and early modern times believed in a southern continent on the basis of their subscription to theories of symmetry and balance. Take those chestnuts away, and a whole world of inquiry beckons. Things no longer make sense. Whether it is the Inland Sea, the Northwest Passage, the Mountains of the Moon, or Terra Australis Incognita, the same question always applies to imaginative geographies: why would people construct and then choose to passionately believe in something that they cannot know to exist? It is a good question – a fundamental question – but, I realised, it is a question that has never been satisfactorily answered in regards to the southern continent.

The historiographic problem as I have approached it is that what starts out as a fairly simple conjecture about the possibility of a southern continent in ancient and medieval times transforms into a highly detailed geography that is treated as a geographical fact in early modern times. Considering this, three basic lines of enquiry beckon. First, how does a simple conjecture about the possible existence of a southern continent transform into the positing of the probable existence of an elaborately detailed, verisimilitudinous geography, all in the course of just a few decades? Second, why does belief in the existence of Terra Australis become so widespread, and why does it evoke such conviction in so many of its advocates? And, third, why do people continue to believe in the southern continent in the face of repeated acts of empirical falsification – each time seeing the prospective continent revised to fit with the new borders of knowledge, in turn leading to new voyages in pursuit of the re-imagined continent? In short, why did people believe, and why did people continue believing?

These are questions I address and attempt to answer in this thesis. By dint of the depth and breadth of the discourses surrounding the idea of southern lands, they are not simple answers, though they belie a simple proposition: people believed in the
southern continent because they wanted it to be real – it was a geography worth believing in. People then continued to believe in the southern continent in the face of overwhelming proof of its non-existence because authorities on the matter had always taught that it was real, and people still wanted it to be so.

To tell this story I have let the narrative of the southern continent determine the structure and rhythms of the thesis, though every section is informed by epistemological analysis, with insights sometimes original, sometimes borrowed. The result of this is a story – and a fascinating one, at that. To borrow a phrase from Captain Cook, I flatter myself that by the end of its telling it is a story that is starting to make good sense. However, unlike Cook, I hope this is only the start of further explorations into the subject – explorations conducted by more learned or more skilled historians than myself. I do not presume, nor wish, to have written the last word on the subject – rather, merely the first word in a new chapter.

**Literature**

It must be the nightmare of every PhD candidate to find out that another scholar is releasing a work on the very subject over which you have been toiling. When I found out in 2008 that Alfred Hiatt was in the process of publishing his work, *Terra Incognita: Mapping the Antipodes Before 1600*, I had a momentary conniption.\(^4\) I did not have the work – yet to hit the printers – to hand, but the thought naturally struck me: what if he says everything I say? What if all my arguments become redundant in the light of his? But as I say, it was a momentary conniption, a morning turn that had straightened out by the afternoon, when I brought to mind the words of Tom Griffiths from whom I had been lucky enough to receive guidance as a member of the Australian National University’s biennial Environmental History PhD Workshop. “Scholars have a natural inclination to be boundary riders – marking out their turf then spending their time protecting it from rivals,” he said. It

\(^4\) Hiatt, *Terra Incognita: Mapping the Antipodes before 1600.*
struck me as true then, and has been reinforced to me ever since – both in watching my own jealous mind creep up on me, and observing the actions of others. But here is the point, well made by Tom: scholarship thrives from cross-pollination. Many voices covering the same ground are many perspectives; collaboration and cooperation inevitably results in better work than the scholar seeing off the forays of other scholars onto his or her turf. Boundary riders should be boundary welcomers. So it was that even without Hiatt’s scholarship before me, I realised this could only be a good thing.

As it turns out, in many ways I think Hiatt’s work and my own are complementary. Where Hiatt is focused mainly on medieval times, my focus is principally the early modern period. Where Hiatt’s strength lies in delving deep into texts and deconstructing them, my own focus has been on the broad sweep of the narrative. In pursuing this approach, my work has been most influenced by the scholars who loosely coalesce into a school of thought sometimes known as ‘geosophy’. It was John Wright who coined this term in 1947, offering the following definition:

Geosophy, to repeat, is the study of geographical knowledge from any or all points of view. To geography what historiography is to history, it deals with the nature and expression of geographical knowledge both past and present – with what Whittlesey has called ‘man's sense of [terrestrial] space’. Thus it extends far beyond the core area of scientific geographical knowledge or of geographical knowledge as otherwise systematized by geographers. Taking into account the whole peripheral realm, it covers the geographical ideas, both true and false, of all manner of people – not only geographers, but farmers and fishermen, business executives and poets, novelists and painters, Bedouins and Hottentots – and for this reason it necessarily has to do in large degree with subjective conceptions. Indeed, even those parts of it that deal with scientific geography must reckon with human desires, motives, and
prejudices, for unless I am mistaken, nowhere are geographers more likely to be influenced by the subjective than in their discussions of what scientific geography is and ought to be.\textsuperscript{5}

Such a holistic approach to historical geography is just as valuable as layer upon layer of minutiae drawn from the chronicle of past deeds and the archive of real geographies. It is a point that J. Wreford Watson makes much better than I do:

> The geography of any place results from how we see it as much as from what may be seen there. Not all geography derives from the earth itself; some of it springs from our \textit{idea} of the earth. This geography within the mind can at times be the effective geography to which men adjust and thus be more important than the supposedly real geography of the earth. Man has the peculiar aptitude of being able to live by \textit{notions} of reality which may be more real than the reality itself. Thus mental images should be of prime importance to the study of geography.\textsuperscript{6}

Watson’s comments are neither complicated nor abstruse; perhaps what he says even seems obvious. Yet few works have been able to maintain the sort of focus Watson, and Wright before him, were interested in. To follow a narrative from the primary perspective of epistemology rather than ontology – of our idea of the earth rather than the realities of it (of course, our ideas are intrinsically linked to realities) – has proved a challenge for scholars. The works of John Allen are rare for this quality – and thus they have been an important source of inspiration for this thesis. Though Allen’s oeuvre is mainly concerned with North American geography, he has consistently explored the ways in which geographical lore affects exploration and


the interpretation of empirical data, and the ways in which geographical illusions are found to persist in the face of counter-evidence.\(^7\) The success of Allen’s approach—and, likewise, of James Ronda, Martyn Bowden, Fransesc Relaño, Clark Firestone, and J.D. Overton—is something I have attempted to replicate in this study on the imaginary southern continent.\(^8\)

There are other works which scholars, particularly Australian scholars, might expect me to have made use of, but which I have found unhelpful. For instance, Paul Carter’s *The Road to Botany Bay: An Essay in Spatial History* is often lauded by Australian historians for what it says about the way in which language constructs landscape. While interesting, deconstructionist insights of this sort tend to be either too narrow or otherwise not applicable to the sort of historiography which I am interested in—history that attempts to bridge the divide between deeds, realities, and perception.\(^9\) Another text often referenced by Australian historians who write about spatial history is Simon Ryan’s *The Cartographic Eye: How Explorers Saw Australia*. This book is focused on the colonial gaze—that is, how reality was constructed and meaning infused through the prism of imperial and Eurocentric thinking. I have no particular quibble with Ryan’s scholarship, but this text did not offer up the sorts of insights applicable to my own subject.

---


I could go on. But rather than reviewing the vast array of literature I have digested, I have spent my words building on relevant arguments within the body of the thesis.

**On Words**

To make length, this thesis has been cut considerably. In particular, Chapter One on ancient and medieval origins has been shortened by two thirds of its original length. But I can afford to do this for two reasons. First, Hiatt’s scholarship is mainly concerned with this period, and so the reader already has a valuable source of information at their disposal. Considerable overlap would be inevitable if I discussed these periods at length. I have trimmed my material down to the minimum sufficient to provide context for later chapters. Also, I have set out my research and conclusions on the origins of the idea of Antipodes in an article for *Terrae Incognitae*. That article is included as Appendix One, so if the reader desires more detail, it can be found there. (However, none of the appendices need to be read for this thesis to make sense. They are ancillary.) The second reason for brevity is that my main interest lies in the early modern period; it is in the early modern period that the imaginary southern continent flourishes, and it is where the greatest burden of explanation and analysis yet lies.

Chapter Seven, on the seventeenth century Dutch expeditions in search of a southern continent, has also been shortened considerably. I have foregone extensive passages of detail contextualising the events and circumstances discussed. A considerable amount of narrative detail has also been excised or abbreviated, and some expeditions are not discussed. Likewise, a number of arguments developed in an article published in *The Portolan* have been condensed.  

---


As for style, my imperatives have been transparency and readability. I accept that many academics expect a certain tone that ‘feels’ academic. I have been criticised in this regard before – the criticism suggesting not that my writing necessarily constitutes bad prose, but that it is not the right kind of prose. For example, a referee to an article I once submitted wrote that, “In terms of the author's style, the prose is peppered with informalities (e.g., ‘mind you’) and even has the sense of being the verbatim transcript of a spoken unscripted lecture which has not yet been formally edited.” If formally edited means writing that has been converted to the ‘formal voice’, then he is right – I do not exclusively write in the formal voice. As for the suggestion I might have just transcribed my prose from a Dictaphone, the machine pouring out words spontaneously spoken as if uttered by some idiot savant (or just idiot) – an amusing thought, but no. Each word is written, and meant.

How do I justify the use of a style that moves between formal and informal? I am tempted to suggest that this being a long treatise it would have been as painful to write in the normal style of a PhD thesis as it would be to read. But, really, it is because my sole interest is in getting information across, and making my arguments apparent, digestible, and reproducible. A story about Michel Foucault comes to mind. I have always thought highly of Foucault – not so much for his writing style, but for the concepts (most of which strike me as relatively straightforward) that belie the awkward phrasing and convoluted syntax and sentence structure. A few days ago I read an old interview with him where the interrogator asked him why he wrote in such a manner when in day to day life he conversed in straightforward language. Foucault answered that it was not because he wanted to, but, rather, it was because if one wanted to be taken seriously within the French academy, at least one third of your writing should be nigh on impenetrable. He was not, it would seem, doing what was best to elucidate his arguments, but he was ensuring those
arguments would be taken seriously. Imagine how much more valuable Foucault’s works would be – how much more accessible his insights for thousands of readers – if he had not felt the need to honour such a ridiculous prerequisite to be considered a serious scholar.

I consider myself a serious scholar – but I also write in the most accessible way of which I am capable, and that means I write in what is often described as an informal style (though I acknowledge occasional lapses in this regard – indeed, I apologise in anticipation of my repeated use of the word ‘verisimilitudinous’, but no other word captures the right meaning).

I do not mean to imply that formal academic writing is necessarily inadequate to the task, only that I believe my choice of style is right for my material and my arguments. I have not set out to convince the reader that I am erudite by means of an academic idiom. If the insights and arguments to which I profess are in any measure worthwhile, the reader will know – for they are set out in (what I hope is) clear and engaging language. I am not interested in hiding bad arguments in convoluted or highfalutin writing. I understand that to have written in this mix of styles is unconventional; my hope is that it is the content that resounds, not the style.

A final note. Where I quote a text that diverges from conventional spellings of a word, I do not employ the Latin adverb, sic. I consider it an unnecessary, distracting, and often supercilious intrusion into an original text. I frequently quote from an array of historical sources; if sic was used it would populate and consume these pages. Hence, where a word in a quotation is spelled in an unusual manner, it may be taken that the quotation is an accurate spelling of the original. In this vein, I have taken special care to ensure quotations are correct – especially where a word is spelt in two different ways in the one quotation (eg, New Zeland/New Zealand).
Chapter One

Origins: Antipodes, Ancient and Medieval

*It is not given man to envisage reality. His is the greater gift to brood over chaos and shape it as he will.*

-- Clark Firestone

When I began looking into the origins of the idea of Antipodes, I knew that there would be a few challenges and a few surprises in store. I suspected, and soon confirmed, that the consensus in scholarship that the ancient Greeks subscribed to certain principles of symmetry and balance – principles that supposedly determined their cosmographic ideas – was irredeemably at odds with the evidence. The unexpected challenges, however, were many. Despite a few shining beacons of erudition, the corpus of knowledge on which modern studies of the ancient idea of Antipodes are based – studies relating to who first posited a spherical earth, who first conceived the theory of zones, and who first posited a southern continent – is a confusion of competing claims and dubious attributions. Comparing the many authorities on these subjects, I found that classicists and historical geographers frequently disagreed with one another over what should have been (or so I thought) simple statements of fact. This involved questions as fundamental as who first figured the earth to be a sphere. Each authority told a different story, and few of the authorities critically engaged with conflicting accounts of their peers. Authors who subsequently look to the discourse about ancient ideas relevant to the history of the idea of a southern continent are thus handicapped before they have even begun: without intimate acquaintance with the ancient texts themselves, how can an author possibly know whose account to follow? What is more, tracking down the ancient texts themselves is no simple proposition; many commentaries are so vague about their sources as to be more hindrance than help. Thus the entire field of study appears to the callow researcher to be of such impenetrable complexity that there is no enticement to truly engage with the subject. Just get a few facts – or what a given authority passes off as

---

facts – and move on to the more interesting, more accessible material in the early modern period. That thought, at least, crossed my mind.

However, I persevered, resolved that the only way to make sense of the conflicting authorities was to go back to the original Greek and Roman texts. What I found was that many scholars made dubious attributions based on scanty or shoddy evidence, choosing incautious conclusions over the less appealing prospect of admitting that to some questions we simply do not know the answers. William Heidel is one of the few scholars willing to admit to the vagaries of the historical record, and draw limited and conditional conclusions, rather than construct arguments of priority on evidence unequal to the task. Having myself now gone back to those ancient texts, I have been able to formulate my own set of conclusions – conclusions which invariably contradict some authorities, though I also share many opinions with earlier scholars. Many of my conclusions are negative in their content: to the effect that we do not know the answer to a question, and cannot reasonably hazard a guess. Yet in making these conclusions I do not see myself as restricting the scope of scholarship, but rather opening up new avenues of inquiry. By removing false certainty from the corpus of Antipodean knowledge, new questions are prompted, questions that bring us closer to the central thread of my inquiry: why believe in a southern continent? In the subsequent pages, space and the sometimes esoteric nature of the topics precludes me from presenting my findings in full. Those findings have been published unabridged elsewhere, allowing me here to provide a digest of conclusions that provide the backdrop to subsequent chapters where I launch into detailed discussions of the evolution of the discourse of Antipodes.

**Hemi-Spheres and Zones**

For there to be a southern hemi-sphere – and with it, Antipodes – there must first be a sphere. The earliest scholar whom we can be sure did posit the earth as a sphere is Plato

---

13 I give fuller details in Stallard, “Origins of the Idea of Antipodes”. I have included this article as Appendix One.
(420 – 348 BC), though there are no indications that sphericity was an idea original to Plato or Socrates (470 – 399 BC). The popular notion that Pythagoras (580 – 500 BC) was the first to conceive a spherical earth is not supported by evidence. This is not to say, however, that later disciples of the Pythagorean school were not the progenitors of this notion, but with the evidence at hand such a conclusion cannot be sustained. What is clear is that by Aristotle’s time (384 – 322 BC) the subject of the earth’s sphericity was an established philosophical subject, and this particular conception of the earth soon became common, and eventually orthodox. At this point, with the earth conceived of as a sphere, the notion of a southern hemisphere comes into play – but for the time being the southern hemisphere exists as a knowledge void. Eventually curiosity and the temptation to complete the earth’s cosmographic ontology would compel philosophers to question whether a landmass existed there; but before that they would wonder whether human existence in the southern hemisphere was possible – a question of climate.

Because the ancients generally believed the earth was at the centre of the universe – known as the geocentric model of cosmology – it appeared that the stars travelled around the earth, often conceived as part of a great celestial sphere. The apparent rotation of this celestial sphere around the earth determined north and south, east and west. Like the stars, the sun also appears to travel around the earth, yet not quite in conjunction with the celestial sphere – it seems to travel roughly east to west, but on a slight tilt to the equator. Hence it was thought that the sun independently travels around the celestial sphere over the course of a year. The path of the sun around the celestial sphere is known as the ecliptic. The *klimata*, then, are latitudinal bands circling the earth determined by ‘inclination’ towards – or exposure to – the sun. In this sense *klimata* is more an astronomical term than a geographical one, but of course solar exposure seems to have a clear relationship to temperature.

---

16 For more detail see Appendix One, specifically the section, “A Spherical Earth”.
At some stage the relationship between *klimata* (exposure to the sun) and meteorology (particularly winds, heat and cold, and precipitation) was developed into the theory of zones. Unfortunately, it is not clear what the intermediate stages in the development of this theory were; the first clear discussion we find of the zonal theory of climate is contained in Aristotle’s *Meteorologica* (2.5.362b), where he explains that “it is not difference of longitude but of latitude that brings great variations of temperature.”

Aristotle posited the following zonal scheme (see Figure 1a for a diagram of the scheme):

For there are two habitable sectors of the earth’s surface, one, in which we live, towards the upper pole, the other towards the other, that is the south pole... These are the only habitable regions; for the lands beyond the tropics are uninhabitable, as there the shadow would not fall towards the north, and we know that the earth ceases to be habitable before the shadow disappears or falls towards the south, while the lands beneath the Bear are uninhabitable because of the cold. (2.5.362b)

![Figure 1a. Representation of the theory of zones in its most basic form. Only the temperate zones are, in principle, habitable. Drawn by the author.](image)

---

18 Aristotle, *Meteorologica*, trans. H.D.P. Lee (London: Heinemann, 1952). It is clear that Aristotle is not the originator of the theory of zones. In this regard, other scholars often cite Pythagoras and Parmenides as likely progenitors, but, again, there is insufficient evidence to provide any certainty.
It is around the time of Aristotle, then, that we can confidently say the earth was recognised as spherical, and was conceived of as being divided into a series of climatic zones which determined habitability for humans. We now have the antecedent to Antipodes thanks to the postulate of a southern hemisphere, and also the potential for Antipodeans thanks to the theorised climatic habitability of the southern temperate zone.  

**Antipodes and Antipodeans**

I have suggested that for Antipodes to exist, the earth must first be conceived as a sphere so that there is a place to situate the Antipodes. Strictly speaking, however, an antipodean landmass – that is, a landmass posited opposite to the *oikoumene* (the known world of Europe, Asia, and Africa) – could exist on a flat or drum-shaped or disk-like earth. Could – but to the best of knowledge, no ancient scholar ever postulated such an entity. In contemplating why this might be the case, consider how an ancient philosopher might regard a flat or flat-ish earth. A disk-like earth can be readily conceived to have a surface and an underside – the upper-side is the surface of the earth where you find the *oikoumene*, while the other (under-) side is also technically a surface, but is inevitably conceived as the foundations of the earth. We know that while the earth was still considered to be flat or a cognate shape, philosophers pondered what peoples or lands lay beyond the boundaries of their limited knowledge. They were curious about what existed upon the surface of the earth – only that surface was not seen as extending to their geometric antipodes. A sphere presents an entirely different conceptual challenge. A sphere is comprised of one single, unbroken surface. There is a conceptual underside in terms of that region opposite to the *oikoumene*, but one cannot avoid conceiving of the earth’s surface holistically. Thus, when the earth was eventually conceive as a sphere a new knowledge void appeared, because the surface of the earth now extended around the

---

19 To avoid confusion, it should be noted from the outset that while throughout this thesis “Antipodes” refers to the idea of southern land, the term “antipodes” (*podes* meaning feet) originally referred to a place opposite to one’s feet (see Plato’s *Timaeus* 62d-63a, discussed in Appendix One). Thus, “antipodes” can be used to mean opposite, and in some cases it is used to indicate inversion.
globe. With that in mind, the inquiring of natural philosophers as to whether that other, connected, hemisphere was comprised of land, water or both was a predictable line of inquiry.

Who, then, first posed the question: might a southern continent exist? According to some authors, Aristotle looms as the most likely contender, while others have posited Plato or Eratosthenes (circa. 276 – 194 BC). But the evidence for each of these candidates does not stand up to scrutiny.\(^{20}\) The earliest ancient scholar who we can be certain did posit a southern continent is Crates of Mallos (circa. 180 – 150BC), librarian at the Greek city of Pergamum, and a man whose name has become totemic for writers introducing the history of the southern continent. Though we have no original texts from Crates, through Strabo’s *Geography* we are given a rare glimpse of an ancient cosmography. Strabo (63BC – 24AD) tells us:

> Crates, following the mere form of mathematical demonstration, says that the torrid zone is ‘occupied’ by Oceanus and that on both sides of this zone are the temperate zones, the one being on our side, while the other is on the other side of it. Now, just as these Ethiopians on our side of Oceanus, who face the south throughout the whole length of the inhabited world, are called the most remote of the one group of peoples, since they dwell on the shores of Oceanus, so too, Crates thinks, we must conceive that on the other side of Oceanus also there are certain Ethiopians, the most remote of the other group of peoples in the temperate zone, since they dwell on the shores of this same Oceanus; and that they are in two groups and are ‘sundered in twain’ by Oceanus. Homer adds the words, ‘abiding both where Hyperion sets and where he rises,’ because, inasmuch as the celestial zodiac always lies in the zenith above its corresponding terrestrial zodiac and inasmuch as the latter does not by reason of its obliquity extend outside the territory of the two Ethiopias, we must conceive that the entire revolution of the

\(^{20}\) For more detail see Appendix One, specifically the section, “Antipodes and Antipodeans”.
sun takes place within the width of the celestial zone, and that his risings and his settings take place herein, appearing differently to different peoples, and now in this sign and now in that. (1.2.24)

Within this passage and a few others, Strabo reveals to us that Crates – a prominent Homeric scholar – was driven to make sense of the following comment found in Homer’s *Odyssey* (Book I): “the Ethiopians that are sundered in twain, the uttermost of men, abiding some where Hyperion [the Sun] sinks and some where he rises.”

The issue was that whereas Homer had made this comment in the sixth century BC before it was even known the earth was a sphere, Crates was now driven to make sense of this statement in the context of contemporary knowledge, knowledge which taught that the earth was a sphere comprised of five main climatic zones. Using Figure 1b for orientation, it can be seen that the Ethiopians were considered to be those humans inhabiting the southern African part of the oikoumene – the land labelled Libya. Thus, to ‘sunder the Ethiopians in twain’ Crates figured that they must be sundered in twain by the great river Ocean that Homer and many others had spoken of, an ocean that encircled the oikoumene. So, Crates posited Ethiopians in the temperate zone of the southern hemisphere, divided from the oikoumene by both the torrid zone and Ocean.

But there was more. Those Ethiopians were said by Homer to abide both where the sun rises and sets – so in both east and west. For whatever reason, Crates interpreted this to mean that the Ethiopians in the southern hemisphere must exist as two separate populations – separated, once again, by Ocean. In sum, then, the Cratesian cosmography found in Strabo’s *Geography* – a cosmography Strabo does not endorse – simply comprises the oikoumene in the northern hemisphere, and two additional landmasses in the southern hemisphere within the temperate zone. And that is all we know about

---

Crate’s cosmography – which is more than enough to celebrate: with this cosmography we have the first extant, unambiguous postulation of Antipodes, and Antipodeans.\footnote{I say ‘Antipodes’, though to be clear, I mean no more than southern continent – a mainland in the southern hemisphere, beyond the equator and torrid zone. I make this clarification because, obviously, in Crates’ system his southern landmasses are not necessarily geometrically opposite the oikoumene.}

\textbf{Figure 1b.} This reconstruction represents the range of knowledge articulated by Hecataeus of Miletus, \textit{circa} sixth century BC. The reconstruction is based on written, not graphic, sources. Based on the original by Edward Herbert Bunbury, \textit{A History of Ancient Geography among the Greeks and Romans from the Earliest Ages till the Fall of the Roman Empire}, 2 vols., vol. 1, New York: Dover Publications, 1959 (original 1883), p. 148. This version by Bibi Saint-Pol, released as public domain, available from http://en.wikipedia.org/wiki/File:Hecataeus_world_map-en.svg, accessed June 27 2010.

\textbf{The Illusions of Symmetry and Equipoise}

Pick up almost any book or article that discusses the Antipodes, however, and you will be given a different story entirely. Most authors who write about Crates and the Antipodes explain with every confidence that Crates posited four landmasses: two in the north, two
in the south. What is more, they will almost certainly tell the reader that those landmasses were situated in a symmetrical arrangement, with the earth divided into four quadrants by Ocean rivers, with a landmass in each of those quadrants. So where do these authors get this fourth landmass, and how do they know how Crates’ landmasses were arranged? The answer is from a combination of other passages in Strabo – passages not attributed to Crates – combined with the cosmographies articulated by later scholars. For example, Strabo states that “we call ‘inhabited’ the world which we inhabit and know; though it may be that in this same temperate zone there are actually two inhabited worlds, or even more, and particularly in the proximity of the parallel through Athens that is drawn across the Atlantic Sea” (1.4.6). Here, then, is a vision of the earth in which it is recognised as possible that there exists a second or third or even more landmasses in the northern hemisphere. But there is no mention of Crates. Later, Strabo says that “the northern hemisphere contains two-fourths of the earth, which are formed by the equator with the circle that passes through the poles, a quadrilateral area is cut off in each of the two fourths” (2.5.5). Again, there is no mention of Crates. However, if one combines these statements together with the cosmography which Strabo does attribute to Crates, we get something that might look like an earth divided into four quadrants, with four landmasses – one in each quadrant.

But this cosmography is a Frankenstein – a collection of vague cosmographical comments unhappily married together to fabricate a particular cosmography. It is certainly not Crates’ cosmography. But the problem does not end there. Scholars have also drawn on cosmographical material contained within the texts of various later ancient and medieval scholars. For instance, Geminos, writing (as best we know) in the first century BC, provides a detailed discussion of the different regions – and potentially peoples – of the globe in his Introduction to the Phenomena.23

---

Of those who dwell on Earth, some are called *synoikoi*, some *perioikoi*, some *antoikoi*, and some *antipodes*. *Synoikoi* are those who dwell around the same place in the same zone [as we do]. *Perioikoi* are those who dwell in the same zone but around the circle. *Antoikoi* are those who dwell in the southern zone in the same hemisphere. *Antipodes* are those who dwell in the southern zone in the other hemisphere, lying on the same diameter as our *oikoumene*, which is why they have been called ‘with feet opposite’. (16.1)

Other scholars including Cicero, Cleomedes, Capella and Macrobius articulated very similar cosmographies – all falling into what is best labelled a quadripartite cosmography (rather than a Cratesian cosmography). What they have in common is they all present a world divisible into four quadrants, whereby there is a landmass conceived to exist in each of those four quadrants. Where scholars fall foul of the dictates of evidence and argument is when they simply assume that this cosmography is a faithful account of Crates’ cosmography, and thus countless authors tell us that Crates posited four landmasses which he specifically labelled *synoikoi, perioikoi, antoikoi*, and *antipodes* (or versions of the same). Were these ancient and medieval authors basing their cosmographies on Crates’ cosmography, bastardised or otherwise? Possibly. Certainly that is what many medieval and early modern authors thought. But the truth is there is no evidence to support that proposition. Authors who blend the unattributed comments of Strabo together with the various cosmographies presented by the above scholars arrive surely but fallaciously at the conclusion that Crates divided the globe into four and put a landmass in each quarter. Such a cosmography was alive in the minds of scholars from around the first century BC, but to say it was Crates’ cosmography is a giant leap of faith. But, still, the problem does not end there.

Many of those modern authors have gone so far as to graphically illustrate what they suppose to be Crates’ cosmography. More, they tell us that their drawings are not merely representations of what they erroneously think Crates’ cosmography looked like, but that
they are faithful reproductions of an actual globe Crates constructed. The reason authors make such claims is that we know Crates did, more than likely, produce a globe. Strabo tells us: “the man who would most closely approximate the truth by constructed figures must needs make for the earth a globe like that of Crates”. (2.5.10) Where we must be more circumspect is in guessing what this globe might have looked like. The only specific detail Strabo furnishes about this globe is contained within his suggestion to readers that if they are to produce such a globe they should “lay off on it the quadrilateral [quadrant], and within the quadrilateral put down the map of the inhabited world.” That is it – entirely unhelpful. From this very minimal body of information scholars have boldly set forth to reproduce the globe of Crates. Remember, as best we know, Crates only posited three landmasses on the sphere, and when it comes to their specific location all we know is that there is one landmass (the oikoumene) in the northern temperate zone, and two landmasses in the southern temperate zone. We are not told how far apart the latter two landmasses are, their configuration, size, shape, and so on. We know almost nothing. If one was to map this cosmography, it should look like Figure 1c (or something similarly austere), and needs to be clearly labelled as an original production, not as an actual reproduction of Crates’ globe. Yet modern authors pretend to very specific knowledge. Consider the following maps described by their authors as reproductions of Crates’ globe, in Figures 1d-1g.
Figure 1c. One possible interpretation of Crates' cosmography. Drawn by the author.
Figure 1d. Reconstruction of Crates’ globe in Norman J.W. Thrower, *Maps and Civilization: Cartography in Culture and Society*, 3rd ed. (Chicago: University of Chicago Press, 2007). Thrower’s accompanying commentary frames the map thus (p. 22.): “Crates of Mellos...constructed a large globe on which were delineated four approximately symmetrical continents...”
Figure 1e. Reconstruction of Crates’ globe in Oliver J. Thomson, History of Ancient Geography (New York: Biblo and Tannen, 1965), p. 203.
These simple drawings – each of which presents a system of oceans and lands that look to be symmetrical – are so compelling it is easy to forget they are representations: that is, they are not redrawings of Crates’ globe, they are interpretations of Crates’ globe. My suspicion is that these representations of Crates’ globe have taken a lot of the attention away from the real point of any inquiry into Crates’ cosmography, which should be about interpreting written texts. Expounding a representation of Crates’ globe presents as a fait accompli – all we need to know is seemingly tied up in that single graphic.
There are two main problems caused by this confusion over what we know about Crates’ cosmography as opposed to what has been attributed as Crates’ cosmography. The lesser of these is a terminological issue. As an example, Claude Nicolet states that Crates put forward “three other oikoumenai in the other three sections of the world which he called the periokoi, the antoikoi, and the antipodes.”\textsuperscript{24} There is, however, no evidence that Crates employed these terms (not to mention the fact that as best we know Crates only posited three landmasses). Rather, these are terms applied to Crates’ cosmography by later scholars of antiquity and the Middle Ages. This, however, is a comparatively minor quibble.

The far more serious problem is the now orthodox understanding that Crates’ cosmography was symmetrical, based on a principle of cosmographic symmetry. For instance, in the highly authoritative and much-admired History of Cartography series, we are told that Crates

represented four inhabited worlds on the surface of his terrestrial globe. Two were in the Northern Hemisphere – the one where the Greeks lived, occupying far less than half of the Northern Hemisphere, and another symmetrically situated in the other half. Two other inhabited worlds are found in the Southern Hemisphere, symmetrical with the two north of the equator.\textsuperscript{25}

The truth, however, is that we do not know what Crates’ globe looked like, even if we do have a rough description of his cosmography. Nor is there any indication in any trace that Crates’ cosmography was symmetrical either by design or accident. Nevertheless, most authors who mention Crates assert that his cosmography is symmetrical, based on a principle of cosmographic symmetry. Take, for example, the often exemplary online old maps resource constructed by Jim Siebold, Cartographic Images, which distils the


\textsuperscript{25} Harley and Woodward, eds., \textit{History of Cartography, Volume One}, p. 163.
It is worth quoting because it is representative of both lay and expert understanding:

various measurements of the earth’s size by Eratosthenes raised a curious problem. The known dimensions of the oikumene were too small relative to the estimated size of the earth sphere, the oikumene occupied only one quadrant of the sphere. Such an imbalance in a spherical object was contrary to the Greek sense of symmetry. Crates, therefore, solved the problem on his globe by drawing three other ‘continents’ (an anticipation/prediction of the existence of the Americas, Antarctica and Australia) to provide the necessary ‘balance’ and symmetry.26

It is not only Crates who scholars suggest subscribed to such a principle, but ancient Greek philosophers in general. So, for instance, the accomplished classicist James Romm suggests that it was a type of “symmetrical” thinking that led to the positing of the Antipodes; he comments that Eratosthenes used “the adjective antipodes for both northern and southern races, implying a strict symmetry across the equatorial plane.”27 This is, however, Romm’s own interpretation, as the term ‘antipodes’ means opposite, not mirror. Romm seems to bring to his reading the baggage of modern scholarship which suggests symmetry ordered Greek cosmography, and thus he has allowed the principle of symmetry to be assumed where it is neither a necessary consequence nor probable intimation of the passage in question.28

It should also be said that while scholars have at least argued that certain passages of ancient texts constitute evidence of a principle of symmetry, as far as I am aware no

28 Benjamin Olshin is the only other author I have found who has challenged the orthodoxy amongst modern authors who believe symmetry was an important ordering principle in Greek geography and cosmography. (Benjamin Olshin, "A Sea Discovered: Pre-Columbian Conceptions and Depictions of the Atlantic Ocean" (PhD, University of Toronto, 1994), pp. 168-169.)
author has ever presented any evidence – erroneously or otherwise – to support their claims about equipoisure (that is, the theory that lands in the northern hemisphere must necessarily be balanced by an equal quantity of land in the southern hemisphere so as to provide the earth with its poise). It is an assumption which thus far has completely escaped the historiographic strictures of evidence and argument – and yet it has become one of the most deeply entrenched fallacies in the literature. Moreover, authors often conflate and confuse symmetry and equipoise, as can be observed in the following passage from Jeffrey Wigelsworth: “For reasons of global symmetry, Greek philosophers posited the existence of a large continent in southern waters to balance the lands known to exist in the north (i.e., Europe, Asia, and Africa).”

Such statements have the double ignominy of being both conceptually confused and factually incorrect.

There quite simply is no mention of a theory which even loosely approximates to a theory of equipoise in any ancient text. This absence is all the more conspicuous when it is realised that there is a long tradition of inquiry in which scholars from antiquity sought to explain how the earth remained at equable rest, or in equable motion. What stopped the earth from tumbling off in to space? What gave an apparently fixed and immobile earth its balance? No scholar ever answered equipoise.

Antipodes

So what we know for certain is that from at least the time of Crates in the second century BC (perhaps earlier, but we cannot be sure) the possible existence of Antipodes and Antipodeans was being contemplated. From the first century BC references to Antipodes

---

occur more frequently, some texts even using the Antipodes as a metaphor. As an intellectual proposition, the question of southern hemispheric lands is treated as an open inquiry by most scholars who broach the subject; southern lands are presented in the form of theory and conjecture; scholars are not compelled to proclaim any particular ontology, for the existence of such lands is not taken as a geographical fact.

The antipodal locale was intangible, unknown, unknowable; it was space, not place. Observe the comments of Cleomedes (thought to have written sometime between the first century BC and 44 AD) who posits other lands and other peoples on the basis of theory and reason:

The theory of Nature teaches us that circumhabitants, antipodes, and contrahabitants must exist, since none of these are described by direct reports. We simply cannot travel to our circumhabitants because the Ocean separating us from them is unnavigable and infested by beasts; nor to the inhabitants of the contratemperate zone, since we cannot traverse the torrid zone. Yet the regions of the Earth that are equally temperate are necessarily inhabited to an equal extent, given that Nature loves Life, and Reason requires that all of the earth, where possible, be filled with animal life, both rational and irrational. (1.1.262)

---

31 In the works of Seneca, Plutarch, Lucretius, and Lucian, the Antipodes are invoked to articulate a meaning of oppositeness or inversion. For example, Seneca (circa. 4BC – 65AD) says of his Roman country-folk: “There are some who invert the functions of day and night and do not separate eyelids leaden with the previous day’s carousal before night sets in. Their way of life, if not their geographical situation, resembles the state of those peoples whom nature, as Virgil says, has planted beneath our feet on the opposite side of the world…There are some antipodes living in the same city as ourselves who, as Marcus Cato said, have never seen the sun rise or set. Can you imagine that these people know how one ought to live when they do not know when one ought to live? Can they really be afraid of death like other people when this is what they have retreated into in their own lifetimes? They are as weird as birds that fly by night.” (Seneca, Letters from a Stoic, ed. Robin Campbell (London: Penguin Classics, 1969), pp. 220-221.)

32 That ancient scholars do not treat southern lands as a pre-determined reality also hints that notions of equipoise and symmetry played no role, for if either theory was in play it would be compelling reason to believe in a particular ontology – as southern lands are a necessary theoretical requirement of both symmetry and equipoise.

As a number of other scholars also do, Cleomedes makes clear to his readers that antipodality is a normal and necessary fact of spherical geometry:

Our antipodes become contrahabitants of our circumhabitants, since such relations resemble those of friends and brothers, rather than those of fathers and children, or slaves and masters; that is, they convert, in that we become circumhabitants of our circumhabitants, antipodes of our antipodes, and similarly contrahabitants of our contrahabitants. (1.1.209)

So Europeans are antipodeans too. We are all antipodeans! Note that Cleomedes’ nomenclature is literal and descriptive, as was typical of the natural philosophers across antiquity. *Perioikoi* translates to circumhabitants, *antoikoi* translates to contrahabitants, *antomoi* translates to aligned to our shoulder, *antipodes* to opposite dwellers. It is the descriptive language of space. Across the millennia, these terms lose their currency in favour of nouns for geographies real and imagined. America, Terra Australis, Mer de la Sud, Oceanus Meridionalis, the Northwest Passage – the language of place. For the time being, however, there was nothing remotely geographical about the postulate of Antipodes. It was a cosmographic conjecture postulating the possible existence of a landmass, without any specific details attached. The Antipodes were amorphous, abstract, conceptual, and in no way real. And so they would remain into the Middle Ages.

**The Christian Era**

One of the most striking aspects of the discourse of southern lands is that there is an unbroken chain of scholarship from ancient Greek to early modern times across which concepts touching climatic zones, the earth’s sphericity, and southern lands can be traced. For all the changes that the Middle Ages herald, when it comes to these subjects of learning there is no significant expansion of knowledge, nor contraction, to be found. As

---

34 Ibid., pp. 34-35.
historical geographer George Kimble points out, in the Middle Ages work in cosmography and geography stagnated more than anything else:

the opinions of Herodotus, Eratosthenes, Hipparchus and Strabo were no longer accepted, as they had been hitherto, as authoritative. In their stead, the De Situ Orbis of Pomponius Mela and the Natural History of C. Pliny, palpably poorer works in a modern estimation, were promoted to positions of high regard. . . . Scholarship is more and more restricted in its range and ceases to be cultivated for its own sake.\textsuperscript{35}

However, while there were few advances in learning, the key tenets of Greek cosmography were kept alive in scholarship. The works of Pliny and Pomponius Mela, though mere compendiums of earlier scholarship, became touchstones in medieval times, alongside a number of other scholarly texts, similarly unoriginal but nevertheless important for the ancient knowledge they reproduced. Where the real difference between ancient and medieval periods lay was not in the quest for enlightenment that has vivified inquiry within natural philosophy throughout the ages, but in the way in which Christianity became the locus for social, political, and intellectual pursuits. As Kimble also noted:

\begin{quote}
From the fourth century onwards many writers considered geography to be of importance only in so far as it bears on Biblical sites and place-names, and map-making only in so far as it gives them a local habitation.\textsuperscript{36}
\end{quote}

When it comes to cosmography, this is the key distinction between ancient and medieval times. Knowledge did not much change, nor the methods used to get to knowledge. What changed was how knowledge was used. As we pass from the Roman to the

\textsuperscript{36} Ibid, pp. 10-11.
Christian era, the Bible becomes the single most powerful focus of and limitation on the cosmographic discourses. Specifically, those discourses were used to illuminate the Bible, and interpreted to conform to the Bible. In terms of cosmography, there was little that natural philosophy taught which was adapted to help illuminate biblical teachings, and so the main concern of scholars was to ensure scholarship conformed to biblical strictures. But when it came to cartography, the Greek and Roman focus on representing spatial relationships became subordinate to the role maps could play in illuminating key biblical teachings. In quite a significant shift from antique cartography, maps in the Christian era were used principally to provide a pictorial and figurative rendering of Earth, whereby distance, proportion, orientation and borders were subordinated to allegory and symbolism. The T-O or tripartite maps of medieval Europe were the most popular manifestations of this type of cartography.Originating, it is thought, in the seventh century to illustrate the cosmography of Isidore of Seville (circa. 560 – 636 AD), T-O maps showed the three continents of the oikoumene separated by a T-shaped junction of rivers or seas (see Figure 1h).

---

Asia’s location at the top of these maps can be seen to variously symbolise the region’s vastitude within which it was believed the biblical paradise (normally fixed at the furthest edges of the oikoumene) would be found, and the understanding that divine power was centred in the east.\textsuperscript{38} Most powerfully, the division of lands with a T-shaped series of

\begin{quote}
\end{quote}
rivers and seas evokes the iconography of the biblical cross. The arrangement has also
been used to represent the four biblical rivers which are meant to flow from Jerusalem,
the holy land at the centre of the world (and the map); the resulting division of the
oikoumene into three lands was then interpreted as the world after the great flood, as
divided by God amongst Noah’s three sons, Shem, Ham, and Japheth.39

Whilst in many ways the medieval T-O maps can be said to compare poorly with earlier
cartographic models like that of Ptolemy, it needs to be made clear that we are not so
much confronted by a devolution in cartographic and geographic scholarship, as by an
altogether different application of these systems of knowledge. Constructed principally
as figurative emblems, medieval mappaemundi combine representative and symbolic
techniques to reveal geographic knowledge and simultaneously express allegorical,
biblical, and historical narratives. Far from being failures as cartographic mediums of
information, they are effective and well-evolved to their purpose. Like all maps,
medieval mappaemundi reflect the public to whom they are addressed and the mentality
of the period in which they are made.40 Thus, it was not so much knowledge that
changed in the Middle Ages, as how knowledge was used.

Pagan Learning, Christian Precepts
First impressions of the intellectual landscape of the Middle Ages – especially within the
context of the Antipodes – are, typically, bleak. To illustrate the schism between
medieval thought and its seemingly brighter antique and early modern bookends, authors
often invoke the strident views of the Christian zealots Lactantius (circa 250 – 320 AD)
and Cosmas Indicopleustes (sixth century AD) who unequivocally repudiate the notion of
Antipodeans as being contrary to nature and scripture, whilst simultaneously declaring
the contemplation of frivolous questions about southern hemispheric lands an utter waste

39 John Rennie Short, Making Space: Revisioning the World, 1475-1600 (New York: Syracuse University Press,
of time, that could otherwise be spent pursuing divine wisdom. Many texts have revelled in the commentaries of these zealots because they evoke the entertaining stereotypes of the Dark Ages. Yet, as it turns out, neither Lactantius nor Cosmas was very influential in the Middle Ages. A far more representative and important figure from the discourse is St Augustine (circa. 354 – 430 AD). In common with Cosmas and Lactantius, St Augustine repudiated the existence of Antipodeans due to his following of scripture; but he was also a rationalist. He believed in reason and argument, logic and learning. St Augustine’s greatest gift to Christianity and, ultimately, to Mediterranean civilisation, came from his unique position in time and space at the nexus of declining Roman traditions and the rise of the Christian era. He provided a model of scholarship which helped set the parameters of knowledge and argument for the following one thousand years – a model in which pagan scholarly traditions and knowledge were kept alive in service of biblical exegesis. St Augustine explained that if a pagan writer articulates a truth, that truth can and should be used to further Christian learning, for knowledge is pure even if its pagan advocates are not. His model of scholarship was adopted by generations of Christians who, rather than abandon pagan scholarship, adopted pagan rhetoric, pagan knowledge, and pagan rationality in service of their own agendas.


42 The writings of Cosmas and Lactantius were revived in the early modern period, but were not especially popular in the Middle Ages. Thus, their present ubiquity in discussions of medieval geography reflects not so much medieval as modern interest. In particular, Simek explains that Cosmas played next to no role in medieval scholarship, as his work was never translated into Latin, and was barely known through the Middle Ages. The first printed edition of his work dates to 1706. (Rudolf Simek, Heaven and Earth in the Middle Ages: The Physical World before Columbus, trans. Angela Hall (Woodbridge: Boydell Press, 1996), p. 2.) It is also worth pointing out that every time a Christian writer rejects the notion of Antipodeans for being an unfounded supposition or, worse, heretical, they bring to the attention of their medieval audiences ideas about the Antipodes. (Interestingly, some scholars have suggested that the Christian repudiation of the idea of Antipodeans has been largely for show, that is, to avoid the possibility of ex-communication or being charged with heresy. See, for example, Thomas Eckenrode, "The Growth of a Scientific Mind: Bede's Early and Late Scientific Writings,” Downside Review 94 (1976), p. 207.)

St Augustine’s own disquisition on the Antipodes in *City of God* is an epitome of this model of scholarship. His comments on the subject fall into two categories. One sees him reasoning from Christian dogma, but the other constitutes a purely rational discussion:

As for the fabled ‘antipodes’, men, that is, who live on the other side of the earth, where the sun rises when it sets for us, men who plant their footsteps opposite ours, there is no rational ground for such a belief. The upholders of this notion do not assert that they have discovered it from scientific evidence; they base their conjecture on a kind of *a priori* reasoning. They argue that the earth is suspended within the sphere of the heavens, so that the lowest point and the middle point are identical; and this leads them to suppose that the other half of the world which lies below this part cannot be devoid of human inhabitants. They ignore the fact that even if the world is supposed to be a spherical mass, or if some rational proof should be offered for the supposition, it does not follow that the land on that side is not covered by ‘the gathering together of the waters’. (16.9)

That the Antipodes were purely conjectural and that no evidence existed to support their existence was a reasonable observation. Likewise, St Augustine was aware of no theoretical argument which made a southern landmass more likely than not. Thus, while he did not repudiate the possibility of Antipodes existing, he showed there was no reason to believe that they do. He did not mention biblical learning here because it was not relevant to the discussion.

It became relevant when he turned his attention to the notion of Antipodeans. Granting the possibility of Antipodes, St Augustine nevertheless found in the biblical tenet telling that the apostles evangelised to all the world an absolute injunction against the possibility of humans living in distant southern lands:
Again, even if the land were uncovered, it does not immediately follow that it has human beings on it. For there is no untruth of any kind in the Scripture, whose reliability in the account of past events is attested by the fulfillment of its prophecies for the future; and it would be too ridiculous to suggest that some men might have sailed from our side of the earth to the other, arriving there after crossing the vast expanse of ocean, so that the human race should be established there also by descendants of the one first man. (16.9)

St Augustine wrote at a time when it was still believed that the closeness of the sun to the equator made the torrid zone impassable; even without the impediment of boiling seas, early medieval maritime technology had a long way to go before it would encourage transoceanic journeying. Thus it seemed clear that no-one had sailed – or, on account of the barriers, could sail – from Europe to southern lands. Thus if Antipodeans existed, it meant there must have been a second act of genesis. As Procopius of Gaza (circa. 465 – 528 AD) argued, “If there be men on the other side of the earth, Christ must have gone there and suffered a second time to save them; and, therefore, that there must have been there as necessary preliminaries to his coming, a duplicate Eden, Adam, serpent, and deluge.” And it was not just the tricky issue of genesis. If the torrid zone was impassable, and if maritime technology was ill-equipped to transport men across oceans anyway, it meant the apostles would have had no choice but to disobey Jesus when he commanded of them: “Go ye into all the world, and preach the gospel to every creature.” (Mark 16: 15-16) Perhaps it was an unreasonable request. Regardless, with at least two fundamental biblical doctrines at stake, the idea of Antipodeans posed a challenge to the certitude of biblical knowledge. To champion the subject of Antipodeans was to invite the censure of the Church.

45 Most Christian injunctions were against the notion of Antipodeans, but at least one Christian scholar – Alonso Tostatus, a Spanish theologian writing in the mid fifteenth century – would extrapolate from biblical first principles
The Cosmographical Canon

While it was the anti-Antipodean St Augustine who encouraged the continued use of pagan scholarship in the Middle Ages, it was largely Ambrosius Theodorus Macrobius and Martianus Capella (both writing in the early fifth century) whose writings, unconcerned with Christian strictures dictating what was and was not acceptable, acted as the repositories of pagan cosmographical knowledge in the Middle Ages. Capella’s *Marriage of Philology and Mercury* and Macrobius’s *Commentary on the Dream of Scipio* are a long way from the incisive and original works which vivified Greek cosmography, but as compendiums of classical scholarship they proved just as valuable to their own time. Especially in the mid and later medieval centuries, their popularity—indicated by the quantity of extant manuscripts, frequency of citations, and their listing in medieval library catalogues—was unrivalled; the cosmographic knowledge expressed in their treatises did not become redundant until the onset of the early modern period, and despite Capella’s sometimes tortuous monologues, neither work was abandoned for more elegant or more current compositions.48

47 William Harris Stahl, *Martianus Capella and the Seven Liberal Arts: Volume 1, the Quadrivium of Martianus Capella* (New York: Columbia University Press, 1971), pp. 55-71. Evidence that the quadripartite cosmography passed down by Capella and Macrobius was prominent in the Middle Ages comes from the oceanographic conceptions of William of Conches, Adelard of Bath, Bernard Sylvester, Giraldus Cambrensis, Geoffrey of St. Victor, Robert Grosseteste and Godfrey of Viterbo all of whom demonstrate some subscription to the idea that the globe is circumscribed by an equatorial ocean, then bisected by a second ocean running between the poles. (Wright, *The Geographical Lore of the Time of the Crusades*, pp. 158-9, 185.)
Capella’s text, in conjunction with later works by Boethius (circa 480 – 525 AD) and Cassiodorus (circa 485 – 585 AD), was integral in establishing the curriculum of subjects at the heart of medieval pedagogy. That curriculum focused on the ‘seven liberal arts’, comprised of the trivium – grammar, rhetoric, logic – and the quadrivium – geometry, arithmetic, astronomy, and harmony (music). Geometry was normally devoted to mathematics, but in Capella’s chapter on geometry he gives the lion’s share of space to a discussion of geography and cosmography. Whatever his reasons for doing so, it is what makes Capella so important: his *Marriage of Philology and Mercury* ensured that for centuries to come students would continue engaging with cosmographic subjects as a matter of course.\(^{49}\)

The cosmography at the heart of Capella’s *Marriage of Philology and Mercury* was a form of the quadripartite cosmography developed in ancient times. It is comprised of an earth divided into five climatic zones, two of which are habitable; in the north there is a landmass on the opposite side of the hemisphere to the *oikoumene*, inhabited by *antichthones*; in the south there are two landmasses, one inhabited by *antecians*, the other by those called *antipodes*.\(^{50}\) This cosmographic arrangement was the inspiration behind the world map of Lambert of St Omer (circa 1060 – 1125 AD) in his encyclopaedic *Liber Floridus*.\(^{51}\) The map from a twelfth century edition of this work (Paris manuscript, Figure 1i) contains an intriguing inscription on its southern continent:

> Southern region, temperate but unknown to the sons of Adam, extending nothing to our race. For the sea that lies between the lands, which flows from the east to the west and divides the world, is not visible to the human eye, which is always illuminated by heat of the sun, which from above runs through the Milky Way. It

---


\(^{51}\) Edson, *Mapping Time and Space*, p. 109. Lambert was also drawing upon Pliny, Isidore, Bede, and others.
repels the approach of men, nor does it permit transit to this zone by any means. Learned men assert that antipods inhabit this zone, whom they claim to be divided from us by the diversity of seasons. For when we are burning with heat, they are congealing with cold. To us it is moreover permitted to make out the northern stars, and to them it is completely denied. There are no other stars that are denied to their gaze, and those stars that for them rise at the same time, set at the same time, and they experience days and nights of equal length. However, the frequency of the solstice [differs], since the sun, returning to reach the winter solstice, induces winter twice for them.\(^52\)

What is interesting here is that the author wants the reader to know that although he has drawn on pagan traditions and depicted a southern continent of enormous proportions, he is no heretic, avowing that Antipodeans – who would necessarily be the sons of Adam – do not exist. Yet though careful to avoid heretical propositions, the map turns out to be a surprisingly complete representation of pagan cosmography, adapted to Christian precepts. Though not immediately apparent, two additional lands can be observed appended to the edges of the *oikoumene*. The first appears at the top of the map, and fulfils a dual function, representing the biblical paradise located in the far east (with the four biblical rivers flowing from it), while at the same time symbolising the second northern continent taught as part of Capella’s ‘geometry’. The second landmass is an island to the far west (i.e., bottom of the map). Despite being placed on the rim of the *oikoumene*, the inscription in the latter leaves no doubt that this island represents a second southern continent: “Here dwell our antipodes, but they endure a different night, contrary days and summer.”\(^53\) The inverted celestial phenomena make it clear the continent is to be found in the southern hemisphere on the opposite side of the globe.\(^54\)


\(^{54}\) Ibid., p. 110.
Figure 1i. Zonal map showing the Antipodes, from the *Liber Floridus*, by Lambert of St Omer, twelfth/thirteenth century, Paris copy. Image courtesy of the Universiteitsbibliotheek Leiden.
Altogether the map contains four distinct landmasses, and although the scale and frame of the map confuse the communication of this understanding, the quadripartite cosmography is represented in full – one of the earliest extant maps to achieve this.

The second scholar crucial to the perpetuation of the quadripartite cosmography was Ambrosius Theodorius Macrobius. Based on the writings of Cicero (106 – 43BC), Macrobius’s *Commentary on the Dream of Scipio* conveys a cosmographic arrangement very similar to Capella’s (an example of a medieval map based on Macrobius’s cosmography can be seen in Figure 1j):

That Ocean which is generally supposed to be the only one is really a secondary body, a great circle which was obliged to branch off from the original body. The main course actually flows around the earth’s torrid zone, girdling our hemisphere and the underside, and follows the circumference of the equator. In the east it divides, one stream flowing off to the northern extremity, the other to the southern; likewise, in the west, streams flow to the north and south, where they meet the streams from the east at the poles. As they rush together with great violence and impetus and buffet each other, the impact produces the remarkable ebb and flow of Ocean; and wherever our sea extends, whether in narrow straits or open coast, it shares in the tidal movement of Ocean’s streams. These we now speak of as Ocean proper because of the fact that our sea is filled from Ocean’s streams. But the truer bed of Ocean, if I may call it that, keeps to the torrid zone; it follows the circuit of the equator as the streams originating in it follow the circuit of the horizon in their course, thus dividing the whole earth into four parts and making each inhabited quarter, as we previously stated, an island.55 (2.9.1-4)

Another key figure in the cosmographical canon is Isidore of Seville (circa. 560 – 636 AD). Both Macrobius and Capella had considerably more to say about cosmography than Isidore, a revered father of the Church who was more concerned with geographical detail than the broad sweep of cosmography. Yet Isidore’s hugely popular *Etymologies* stands besides Capella’s *On Philology and Mercury* and Macrobius’ *Commentary* in terms of significance in the Middle Ages, for though Isidore’s comments were spare, they carried unparalleled authority. Nearly a thousand manuscript copies of this book survive, a phenomenal number in light of the appalling rate of attrition for medieval texts. His knowledge, too – as that of a father of the Church – transcended mere pagan philosophising. A reader could trust that nothing Isidore wrote was

---

idle; that any wisdom he divined from pagan learning was, in fact, God’s wisdom. Two passages of the *Etymologies* address the subject of Antipodes. Starting with the question of Antipodean inhabitants, Isidore proclaimed:

> Now indeed the people called Antipodes (i.e. ‘opposite footed’) – because they are thought to be contrary to our footprints, as if from under the earth they make footprints upside-down from ours – are on no account to be believed in, because neither the solidity nor the central space of the earth allows this. Indeed this is not confirmed by any knowledge of history, but poets conjecture it as it were by sheer inference.\(^{57}\) (9.2.133)

Having scotched the notion of Antipodeans, a subsequent passage in the *Etymologies* nevertheless became a key reference point for later scholars and disciples, as it provides support to that other subject of ‘poet’s conjecture’ of which Antipodeans are but one element – the question of the existence of Antipodes:

> Apart from these three parts of the world [of Europe, Asia, and Africa] there exists a fourth part, beyond the Ocean, further inland toward the south, which is unknown to us because of the burning heat of the sun; within its borders are said to live the legendary Antipodes. (14.5.17)\(^{58}\)

So, the ‘legendary Antipodes’ – meaning Antipodeans – are on no account to be believed in, but the place of their conjectured habitation is indeed a fourth part of the world. In subsequent centuries, these words were interpreted by scholars as confirmation of the existence of Antipodes.\(^{59}\)

---

\(^{57}\) Ibid., p. 199.

\(^{58}\) Note, there is argument over whether Isidore believed in a spherical or flat (or flat-ish) earth. His writings are less than definitive either way, though scholarly opinion favours sphericity. See William D. McCready, "Isidore, the Antipodeans, and the Shape of the Earth," *Isis* 87, no. 1 (1996); John Williams, "Isidore, Orosius and the Beatus Map," *Imago Mundi* 49 (1997); Wesley Stevens, "The Figure of the Earth in Isidore's 'De Natura Rerum'," *Isis* 71, no. 2 (1980); Marina Smyth, "Isidore of Seville and Early Irish Cosmography," *Cambridge Medieval Celtic Studies* 14 (1987).

\(^{59}\) There has been some argument over exactly what landmass Isidore was referring to with his comments about a fourth part of the world. See Williams, "Isidore, Orosius and the Beatus Map"; Hiatt, *Terra Incognita: Mapping the Antipodes before 1600*, p. 85.
We have already seen how Isidore’s division of the world into three parts was conceptualised schematically in Figure 1h, a T-O map typical of those produced during the Middle Ages to explain Isidore’s oikoumenical scheme. But we also get to see his addition of a fourth part of the world in a corpus of maps produced from the ninth through thirteenth centuries to accompany Beatus of Liebana’s (circa 730 – 800) Commentary on the Apocalypse. The most striking example is the Osma version of 1086 (Figure 1k), with its depiction of Sciopodes in a southern continent, accompanied by the following inscription:

This region remains uninhabitable and unknown to us on account of the heat of the sun. It is said that the Scopodes live there, who have single legs and [travel] with amazing speed. The Greeks call them Sciopodas, because, lying supine on the ground during the summer, they are shaded by the great size of their feet.

By populating the southern continent with a monstrous race rather than Antipodeans proper, it allowed the fable of southern inhabitants to be indulged, while avoiding any heretical contradiction of biblical tenets relating to the apostles, the genesis of man, and so on. Isidore proves the inspiration for the particular choice of Sciopodes, having explained that “The race of Sciopodes are said to live in Ethiopia; they have only one leg, and are wonderfully speedy. The Greeks call them ‘shade-footed ones’ because when it is hot they lie on their backs on the ground and are shaded by the great size of their feet.”

---

61 Edson, Mapping Time and Space, p. 154.
62 John Williams makes a strong argument that the Sciopodes may have been chosen to populate this land because of St Augustine’s identification of Sciopodes as descendants of Adam (Williams, “Isidore, Orosius and the Beatus Map,” pp. 24-25). St Augustine wrote: “There are accounts in pagan history of certain monstrous races of men…There is also a story of a race who have a single leg attached to their feet; they cannot bend their knee, and yet have a remarkable turn of speed. They are called Scopods because in hot weather they lie on their backs on the ground and take shelter in the shade of their feet…Now we are not bound to believe in the existence of all the types of men which are described. But no faithful Christian should doubt that anyone who is born anywhere as a man – that is, a rational and mortal being – derives from that one first-created human being. And this is true, however extraordinary such a creature may appear to our senses in bodily shape, in colour, or motion, or utterance, or in any natural endowment, or part, or quality.” (City of God 16.8)
Conclusion

Sometimes inhabited by Antipodean men, sometimes by Sciopodes; sometimes a singular non-oikoumenical landmass, sometimes one of three non-oikoumenical landmasses: so stood knowledge of the ancient concept of southern lands across the Middle Ages. Along the way there were various challenges to the cosmographic discourses espousing notions of Antipodes and Antipodeans. Aristotelian cosmology proved a particularly tricky hurdle to be overcome in the High Middle Ages, after natural philosophers rediscovered Aristotle’s *On the Heavens* and its complicated cosmology and system of physics around the twelfth century.\(^6^3\) And, of course, 

---

\(^6^3\) From the twelfth century Arabic scholarship preserving many of the great texts of antiquity became more accessible to European scholars. It was at this time that many of the classics were rediscovered – arguably the most important to the earth
the injunctions of biblical learning were a constant frustration on the limits of conjecture. Yet at no stage did the cosmographic discourses slip into the various stereotypes sometimes associated with the ‘Dark Ages’: through the cosmographical canon of Capella, Macrobius, Mela, Isidore and Pliny (amongst others) the concepts of the earth as a sphere, of the earth being divisible into habitable and uninhabitable climatic zones, and of there potentially existing non-oikoumenical landmasses never lost currency. The reality is that once the die was cast by the early fathers of medieval scholarship, the specific conjecture of Antipodes was maintained on the strength of that tradition of learning. The Antipodes served no geographical imperative (for example, it did not help make sense of any geographical discoveries or other phenomena), and certainly served no Christian imperative; the conjecture was perpetuated because it was knowledge, and though nearly always subordinate to theological concerns, knowledge continued to be valued for its own sake in the Middle Ages. In a way, it makes a lie of the comment quoted from George Kimble earlier – that in the Middle Ages scholarship ceased to be cultivated for its own sake.\textsuperscript{64} When it came to the Antipodes, there was no other reason.

Having arrived now at the cusp of the Age of Discovery in this narrative, the question of what lands existed where is poised to shift from a mere subject of ‘poet’s conjecture’, to a question of fundamental importance to societies undergoing radical changes. With geographical horizons expanding at a dizzying pace through the remarkable maritime discoveries of the early modern period, cosmography became increasingly relevant to both scholars, and people of more practical concerns. What the world looked like and how one might profit from that knowledge became central pursuits of cosmographers, cartographers, kings and queens, explorers and entrepreneurs alike. New worlds were opening up, and for the savants driven to make sense of it all, the idea of Antipodes became a crucial tool as they set about trying to organise the chaos of geographical fragments foisted upon them into some sort of cosmographic order.

\footnotesize
\textsuperscript{64} Kimble, Geography in the Middle Ages, pp. 10-11.
Chapter Two

The World as Palimpsest: The Dawn of New Worlds in the Age of Discovery

The mind will not tolerate a vacuum. When there is no knowledge there will be data; wish, desire, fear, and deductive thinking will provide them.

-- Bernard De Voto

The horror of the void. I am not alone in having used this borrowed phrase to describe the geographical and cosmographical imaginings that we observe in older societies; societies that go to great lengths to fill the unknown spaces of the world with places, whether they are the subject of conjecture, myth, or the whim of imagination. It is the anthropomorphic version of Aristotle’s horror vacui: it is not nature, but mankind who abhors a vacuum. There is some obvious truth to this, for all societies attempt to make sense of their world, no matter how limited their knowledge or intellectual tools. But is this filling of the void the manifestation of a horror of that void – of anxiety and loathing – or something else? With every new artifact of the past I encounter, the more I am sure that it is not a sense of repugnance which makes humankind fill these voids, but a response to opportunity – the opportunity to affirm our existence by creating an idea or an image that reflects how we see ourselves. Filling a void allows us to inscribe our beliefs, our cultures, and our geographies onto a blank slate.

Consider the late nineteenth century when the broad strokes of the earth’s geography were known – “this Globe has but few geographical mysteries; and it is losing its romance as fast as it is losing its wild beasts,” wrote Edward Arber – but other planets remained mysterious. Mars had become accessible through the power of the telescope, and so what had not long since been a blank slate was now able to be filled with a new geography. It presented an opportunity. Successive geographers and cartographers, both scientists and amateurs, scoured the skies and reported what they saw: continents, mountains, ice caps, seas, and built canals. It probably sounds familiar, and, indeed, a glance at Figure 2a will suggest it looks somewhat familiar, too.

67 I note that Alfred Hiatt and I have, independently, come to a similar conclusion on this point. See Hiatt, Terra Incognita: Mapping the Antipodes before 1600, p. 225.
Giovanni Schiaparelli inscribed onto the landscape of Mars the same cartographic grid and same geographical features that had long defined images of our own planet. He was not sketching a planet anew; he was interpreting the unknown through the known. Thus, anyone who looked upon this Martian geography could not help but see our islands, our seas, our canals and, ultimately, the promise of our civilisation – for in essence it was no map of Mars, but a map of Earth overlain on Mars. Just consider how some scientists framed the question of the possibility of Martian life:

These facts… lead us to speculate as to the kind of inhabitants there may be upon that far away world, and what they are doing; whether they are like ourselves. Are they devoted to science? Are they constructing immense telescopes and gazing at us, making maps of the Atlantic and Pacific Oceans and the eastern and western continents? Do they know whether, at the north pole of the earth, there is an open polar sea, or whether there is an
undiscovered continent near the south pole? Are they a great race of engineers, and do they construct public works on a gigantic scale?\textsuperscript{69}

We see everywhere ourselves. Sometimes it is our reflection we see, sometimes a refraction, and sometimes we look into the yonder and see our contrapart – what it is that we are not. Whatever the particular vision, geographical projections tell us more about the authors of those projections than about their subject. When ancient and medieval scholars imagined the biblical paradise, they imagined it to be an earthly geography like the most beautiful parts of Europe, except evermore wondrous and perfect. When St Augustine imagined the southern hemisphere, he confuted the idea of Antipodeans – because for his Christian world to exist, no other civilisation could. The images of the world we find in classical and medieval maps and books have a limited relationship to empirical inquiry. Rather, they demonstrate the subjective projection of the world as it was desired – and sometimes required – to exist, as determined by a given milieu in time and space.

Thus, we will find no horror of the void amongst classical or medieval geographers and cosmographers, but we will find opportunism. The world appeared to these societies not as a ghastly vacuum, but as a palimpsest: a vehicle through which any given savant could express their own particular religious, cosmographic, geographic, cosmological or historical interests and ideas. If the earth you inherited from your peers and forebears was not to your liking, then you could erase those bits which did not serve your purpose or disagreed with your ideas, and inscribe your own in their place. There was little in the way of hard empirical geographical data to limit the earth’s malleability; much more limiting was an individual’s own precepts, be they religious, historical, or otherwise. Thus, the world was a palimpsest: inscribed, erased, and re-inscribed based on whim, reason, fancy and folly – a different story told in every telling.

\textsuperscript{69} Even Martians wonder about Antipodes! Quoted in K. Maria Lane, "Geographers of Mars: Cartographic Inscription and Exploration Narrative in Late Victorian Representations of the Red Planet," \textit{Isis} 96, no. 4 (2005), p. 503. Also see \textit{———}, "Mapping the Mars Canal Mania: Cartographic Projection and the Creation of a Popular Icon " \textit{Imago Mundi} 57, no. 2 (2006).
Of course, if this is all predicated upon lack of empirical knowledge, it would seem that this malleability could not pertain to the Age of Discovery, for empirical data of geographies near and distant began trickling and eventually flowing back into Europe from the early fifteenth century. Yet the metaphor of the world as palimpsest is just as relevant to the early modern period.

Many modern treatises of historical geography furnish, for the reader’s edification, definitions of cosmography, geography, chorography, and topography based on the pronouncements of the various alumni of the cosmographic discourses – ancient, medieval, and early modern.\(^\text{70}\) The specific definitions depend on the scholar cited, but they generally suggest that topography is the study of a particular place, chorography of a particular region, geography of the regions together, and cosmography of the whole of the earth.\(^\text{71}\) The pitfall of these types of definitions is that they give the impression that cosmography relates as an empirical science to each of the other fields. But it does not. So long as cosmography (as an earth science) has been a true subject of inquiry – for it ceased to exist as a field of scholarship centuries ago – it has always been chiefly concerned with what we do not know. Cosmography fills in the gaps to connect known geographies with other known geographies, until we have a comprehensible whole: the earth. So long as there have been gaps between known geographies, speculation has been required to connect them; thus cosmography was the composite of data plus speculation.

Returning to the above definitions of cosmography and geography, they can be seen as two ways of saying the same thing: the whole of the earth is the equivalent of all the regions together. Thus, as the earth was more comprehensively explored, cosmography receded into irrelevance, for all that truly distinguished it from geography was speculation, and eventually there was little left about which to speculate.\(^\text{72}\)

\(^\text{70}\) For example, see Herman Moll, *The Compleat Geographer: Or, the Chorography and Topography of All the Known Parts of the Earth* (London: Awnsham and John Churchill, 1709), pp. i-ii.

\(^\text{71}\) Note that cosmography often took in a cosmological aspect, too.

\(^\text{72}\) John Rennie Short points out that the terms cosmography and geography were often used interchangeably, which is quite true – and makes sense given they essentially refer to the same thing. (Short, *Making Space*, p. 36.) Chorography and geography were also often used interchangeably, and chorography was often used in place of topography. There were no hard and fast rules about usage of these terms, mostly because a definition made no difference to the scholarship produced under these various guises – readers could always understand what an author meant by the detail of the work.
This means that in the early modern period the earth was yet a palimpsest, because the configuration of all the geographical regions of the earth as a composite whole remained one of the chief practical and intellectual pursuits of European civilisation. Each new unit of empirical data that became public required the addition of that data to geographical discourse, as well as a revision of cosmographical speculation. If Africa is shown to be an insular continent, then Ptolemy’s speculated land bridge between Asia and Africa must be erased. If land is discovered in the distant south-west of the Atlantic, then new speculation is required: is it connected to the lands found further to the north, and is it connected to other southern lands? So each discovery entailed both addition and revision. What made this all the more challenging – and simultaneously all the more invigorating an intellectual pursuit – was the sheer volume of non-empirical authorities, containing a huge diversity of often contradictory information, from which savants had to mould a comprehensible cosmography. In one form or another nearly all of the ancient and medieval sources discussed throughout Chapter One became available to industrious savants of the Renaissance. Thus, the task became one not just of interpretation, but of selection and construction. The inscription accompanying Martin Behaim’s globe of 1492 gives a sense of the burden of authority weighing upon the cosmographer who had to interpret the data about Africa’s extensive southerly aspect as revealed by Portuguese mariners throughout the fifteenth century:

Be it known that on this form of an apple [globe] here present is laid out the whole world according to its length and breadth in accordance with the art of geometry, namely, the one part as described by Ptolemy in his book entitled Cosmographia Ptolemai, and the remainder from what the Knight Marco Polo of Venice caused to be written down in 1250. The worthy Doctor and Knight Johann de Mandeville likewise left a book in 1322 which brought to the light of day the countries of the East, unknown to Ptolemy, whence we receive spice, pearls and precious stones, but the Serene King John of Portugal has
caused to be visited in his vessels that part of the south not yet known to Ptolemy in the year 1445, whereby I, according to these indications this apple has made, was present.\textsuperscript{73}

Another inscription in the Indian Ocean – a region for which Behaim had limited empirical data – gives an even better sense of the anachronism that underwrote cosmography. Behaim explains that: “Here are found sea-monsters, such as Sirens and other fish. If anyone desires to know more about these curious people, and peculiar fish in the sea or animals upon the land, let him read the books of Pliny, Isidore, Aristotle, Strabo, the Specula of Vincent and many others.”\textsuperscript{74} That is to say, let him consult the best thinkers from the fourth century BC, first century BC, first century AD, seventh century AD, and thirteenth century AD. Making sense of all this – part empirical data from exploration, part quasi-empirical information from rumour, and part cosmographical theorising – was the formidable task of the early modern cosmographer. It was a game of trial and error, induction and deduction, science and art, played out across Europe in books, letters, merchant pioneering, maritime exploration, and, above all, in maps and globes. This was the world as palimpsest.\textsuperscript{75}

\section*{Ptolemy in the Age of Discovery}

In 1434, equipped with the naval technology of the caravel and medieval techniques of navigation, the Portuguese mariner Gil Eannes sailed beyond Cape Bojador – the southernmost marker of known and safe oikoumenical waters.\textsuperscript{76} Cape Bojador had long been confused with Cape Juby, a cape which posed a formidable barrier to explorers, said to be impassable for any number of reasons: boiling seas (the seas at the cape do in fact froth and eddy); scorching sun;

\textsuperscript{73} Relaño, \textit{The Shaping of Africa}, p. 169. Relaño makes the observation (p. 185): “Somehow, like an intermediate stage between one and the other, erudite authority and contemporary information gained through perceptual experience were seen by Renaissance cosmographers as two complementary devices.”

\textsuperscript{74} Ibid., p. 171.

\textsuperscript{75} In many ways the pursuit of cosmographic completeness defines the era of exploration commonly referred to as the Age of Discovery. It is once that cosmography is basically completed in the late eighteenth century that a new era of discovery ensues, one that is defined by the re-examination of assumptions, the pursuit of local detail that helps make sense of the whole, and the pursuit of new ways to understand old data and new data to understand old ideas. It is what William Goetzmann refers to as the Second Age of Discovery, and, I would argue, it continues to this day: the drive to understand the world that we already know exists. (William H. Goetzmann, \textit{New Lands, New Men: America and the Second Great Age of Discovery} (New York: Viking, 1986.)

dangerous coasts and currents (true enough); and the peril of sea monsters (even Satan himself appeared on an Arab map south of the cape – a sea monster of sorts). In comparison to the voyages of the following decades, Eannes had not travelled far down the African coast – it was only in the hundreds of nautical miles – but it was an act that proved that despite the most fearsome impediments to oceanic travel imagined to exist beyond the *oikoumene*, neither seas nor climes were absolute barriers to determined mariners. What also made Eannes’ expedition important was his decision to forsake the practice of coasting the littoral, as he instead sailed well out of sight of land, into the waters of Ocean.

In writing about maritime direction finding, we tend to conflate two separate practices and skill-sets under the one rubric of navigation. But as J.H. Parry explains, navigation is distinct from the much longer-standing practice of pilotage:

> Navigation, roughly defined, is the art of taking ships from one place to another out of sight of land; pilotage, the art of taking ships from one place to another when land or navigational marks are in sight.\(^{78}\)

Parry goes on to explain that, “In the late fifteenth and early sixteenth centuries navigation, so defined, was in its early infancy and was not regarded as a distinct technique.”\(^{79}\) It is easy to imagine, then, why seafarers were so anxious about the prospect of leaving known waters, or, worse, leaving sight of land: it meant that their finely-honed skills of pilotage were no longer applicable, and their fates were largely in the hands of their captains or specialist navigators – men who, unlike themselves, learned their art only in part through sea-faring, and otherwise through book learning of astronomy and mathematics and the principles of navigation.\(^{80}\)

---

\(^{77}\) Preston E. James and Geoffrey J. Martin, *All Possible Worlds: A History of Geographical Ideas*, Second ed. (New York: John Wiley and Sons, 1981), p. 69; Fritze, *New Worlds*, pp. 66-72, 80. Sailors were also anxious about the prospect of the northern Pole Star disappearing from view once the equator was crossed (in fact, Polaris is virtually unobservable from about 5ºN), as they used the star to determine latitude. However, they could still measure latitude with the sun, and they would soon discover that the Southern Cross could be used in the southern hemisphere for the same purpose.

\(^{78}\) Parry, *The Age of Reconnaissance*, p. 83. Note that the person navigating ships on long voyages was nevertheless often referred to as the Pilot.

\(^{79}\) Ibid., p. 83

\(^{80}\) Ibid., p. 84. When I say that seafarers were uneasy with the prospect of leaving the sight of land or known waters, I do not mean to imply that they never ventured onto the High Seas or left the proximity of the coast. When crossing the
sense, Eannes was a pioneer of navigation. To broach unfamiliar waters at substantial distance from land was a technique crucial to exploration, as by venturing farther from land a ship was subject to currents and winds that provided speed, which equalled distance. It also often meant ships ended up in unexpected places – places they did not even know existed. For example, by 1500 it had become known that along the equatorial west-African coast ships were likely to be inhibited by weak currents and winds. The better option was to take an arc into the Atlantic before turning with the winds south-east for the passage round the Cape of Good Hope. This is exactly what Pedro Álvares Cabral did in 1500 on a voyage to the Indies, but his arc into the Atlantic was much larger than normal, to the point where he ended up on the coast of Brazil – hitherto unknown to Europe.\footnote{William Brooks Greenlee, The Voyage of Pedro Álvares Cabral to Brazil and India: From Contemporary Documents and Narratives (London: Hakluyt Society, 1938), pp. lviii-lx. In similar circumstances Dirk Hartog ended up on the West Australian coast in 1616 – then unknown to Europeans – after the fierce winds of the Roaring Forties pushed him further east than expected on his journey to the Dutch East Indies.}

In the years that followed Eannes’ breakthrough, Portuguese explorers continued to pursue the prospects of sub-Saharan Africa, pushing incrementally further south with regular expeditions. By 1444 the Portuguese had reached Cape Verde; by 1482 they had reached the Congo; and by 1488 they finally rounded the southernmost tip of Africa. Like Eannes’ initial breakthrough, these voyages were all in some way iconoclastic. Consider the Portuguese designate for the area of Africa first encountered by Dinis Dias in the zone which had been considered ‘torrid’ since classical times: it was named Cape Verde, so-called because its verdure was a blessed relief from the formidable deserts stretching from today’s Morocco to Senegal. So much for the burning sun of the equator and the desert land it creates; the ‘torrid’ tropics proved a verdant marvel.\footnote{Relaño, The Shaping of Africa, p. 151.} As a result, the zonal theory of climate was revised; for example, it was undeniable that the torrid zone could be and was inhabited, but such was the intensity of the sun that it was believed a man’s skin would be scorched black, as was seen with the equatorial Africans. What
is more, when Diogo Cão sailed into the Congo River he not only proved that Africa extended well south of the equator, he could also report that formidable tribes lived there – with nary a sign of a monstrous race.\textsuperscript{83}

With Bartolomé Dias’s rounding in 1488 of what he dubbed the Stormy Cape – later renamed Cape of Good Hope in recognition of the promise of Indian riches beyond – and then Vasco Da Gama’s voyage in 1497 which took him round the Cape then along the east African coast and on to India, we see the culmination of something that had begun almost a century earlier with Prince Henry the Navigator’s sponsorship of those first tentative voyages along the northern African coast.\textsuperscript{84} For ocean-faring, Dias’s and Da Gama’s voyages proved that the journey from Europe to India on the High Seas was possible, even if it could take a perilous two years and involved passage through what became the most feared waters in the world around southern Africa. Da Gama, returning from India with a rich cargo of spices sold at a profit considered sufficient justification for the loss of two ships and the death of almost half his crew, also proved that it was a commercially viable sea-route to the Far East.\textsuperscript{85}

These voyages afforded a cosmographical bounty, too, proving that there was no land bridge connecting Asia to Africa. There was ancient authority, as well as information from Arabic sources, suggesting that Africa was surrounded by waters to the south and could be rounded. But this information was overridden by the teachings contained in one of the most sophisticated texts of antiquity to be rediscovered in the fifteenth century: Claudius Ptolemy’s \textit{Geography}. Ptolemy flourished in the second century AD, producing a handful of important works from the richly lettered city of Alexandria in Roman-controlled Egypt. Amongst those works was a book on astronomy, the \textit{Almagest}, and a work on geography and cartography, titled \textit{Geography}. Ptolemy’s \textit{Almagest} was known to some in the Middle Ages, thanks to the derivative astronomical treatise of the 9\textsuperscript{th} century Arab scholar Alfraganus, and translations which began appearing from the twelfth century. Ptolemy’s \textit{Geography}, on the other hand, fell into

\textsuperscript{83} For more information see ibid., p. 151.
\textsuperscript{84} Fritze, \textit{New Worlds}, p. 95.
\textsuperscript{85} It should be noted that Da Gama’s navigational triumph was achieved in part through the utilisation of the knowledge of local Arab navigators who had been recruited, possibly kidnapped, on the African coast.
obscurity. It offered the most sophisticated cartographic models conceived to that time, but was lost to European learning until the beginning of the fifteenth century when a translation was produced from a copy held in Constantinople. From that point of rediscovery, knowledge of Ptolemy grew quickly and his geographical treatise soon became a standard reference for works of geography. When in the late fifteenth century the technology of printing presses revolutionised the world of letters (allowing more books to be printed at cheaper prices), Ptolemy’s *Geography* was duly put in print and its circulation soared, ensuring it became a seminal influence upon the men and societies at the forefront of the Age of Discovery.

Amongst the merits of the *Geography*, Ptolemy tackled the cartographic problem of flattening the globe, outlining three different methods for producing on a plane surface a world map which possessed geometric felicity. Moreover, he made central to each projection grid-references superimposed on the earth in the form of latitude and longitude. What he offered through these models was a superior method for depicting location, magnitude, and the earth from a single perspective. Also important was Ptolemy’s acknowledgement that maps were palimpsests: as better geographic knowledge became available, Ptolemy encouraged his readers to revise cartographic co-ordinates accordingly. A map should be a record of the accumulation of knowledge, in which case there is no such thing as a final version of a map:

Since, however, all regions cannot be known fully on account of their great size, or because they are not always of the same shape or because not yet satisfactorily explored, and a greater length of time makes our knowledge of them more certain, we think we should say something to the readers of our geography on the subject of varying traditions at various times, viz., of some portions of our continents, on account of their great size,

---

87 Ptolemy outlined an additional fourth projection of the globe as viewed from a distance. (Harley and Woodward, eds., *History of Cartography, Volume One*, p. 185.)
88 Nevertheless, throughout the fifteenth and sixteenth centuries portolan charts remained the dominant cartographic instrument of navigators. This was the case up until Mercator outlined a far superior system in 1569, his projection allowing cartographers to flatten the globe without suffering the effects of loxodromic distortion – meaning that navigators could use a map to chart an accurate course using constant compass bearings. It was still several decades after this before chart-makers began to adopt Mercator’s method for navigational charts.
we have as yet no knowledge; with regard to other parts we do not know what is their real nature, because of the negligence of those who have explored them in failing to give us carefully prepared reports; other parts of the earth are different to-day from what they were, either on account of revolution or from transformation, in which processes they are known to have partially passed into ruin.

We consider it necessary therefore for us to pay more attention to the newer records of our own time, weighing, however, in our description these new records and those of former times and deciding what is credible and what is incredible.\textsuperscript{89}

With this, Ptolemy recommended a model of cartography founded on a philosophy of accretion and revision of knowledge that would not be out of place in modern science. His other main contribution to knowledge through the \textit{Geography} was a catalogue of places within the known world, delineated according to latitude and longitude.\textsuperscript{90} This geographical data would influence geography and cosmography throughout the early modern period – as, for example, with the fabulous land of Cattigara that Ptolemy catalogued in the Far East, and which continued to appear on maps and guide the way new data was interpreted well into the sixteenth century.

If these were the gifts of the \textit{Geography}, there was, too, false wisdom. Early modern Ptolemaic maps – produced to accompany editions of the \textit{Geography} and to illustrate other geographical texts throughout the early modern period – provide a graphic representation of the most formidable item of geographical apocrypha endorsed by Ptolemy: a land bridge believed to connect eastern Asia with southern Africa (see Figure 2b). This creates an enclosed Indian Sea, encouraging speculation about the extent of the southerly aspect to this \textit{terra incognita}.


\textsuperscript{90} Note, where I provide a value for longitude it has been calculated according to the Greenwich Prime Meridian.
Figure 2b. Representation of Ptolemy’s world geography in the Ulm edition of Geographia (Ulm: Lienhart Holle, 1482). Image courtesy of the British Library.
Figure 2c. Henricus Martellus, world map, *circa* 1489. Image courtesy of the Beinecke Rare Book and Manuscript Library, Yale University.
Though spectacularly disproved by the endeavours of Portuguese explorers, only gradually did cartographers eradicate this geography from their maps. In the world map of Henricus Martellus (circa. 1489, Figure 2c) the southern tip of Africa extends far into the east, while the Cattigaran peninsula of eastern Asia extends far to the west – hangovers, both, from Ptolemy. The ‘Dragon’s Tail’ of Cattigara continued to appear on maps for another half century.

On top of this, many modern scholars contend that Ptolemy’s concept of an enclosed Indian Ocean had a further long-term implication for cosmography and cartography, maintaining that his land bridge was the prototypical southern continent. These scholars believe that it is with this Ptolemaic land bridge that the southern continent finally gained magnitude, and, more importantly, gained through Ptolemy’s writings a theoretical justification for its existence in the form of the theory of equipoisure. But in actual fact, Ptolemy makes no allusions to equipoise or related concepts, and his so-called southern continent only has implied magnitude, given his geography is strictly limited to the oikoumene. As mentioned earlier, a key element of Ptolemy’s undertaking was to provide coordinates for regions to which he believed he possessed reliable information, and no other.

The consequence of this was that Ptolemy could not provide a complete cosmography. So, for example, when Ptolemy spoke of the extent of southern Africa (“Interior Aethiopia”) he could offer northern and eastern borders, but otherwise could only suggest the ambiguous border of “unknown land toward the west and the south”. Likewise, he could only offer “unknown lands” as the limits of eastern Asia, and the land bridge he believed connected it to Africa:

That part of the earth which is inhabited by us is bounded on the east by the unknown land which borders on the eastern races of Greater Asia, namely the Sinae and the Seres,

91 For example, Michael Pearson, Great Southern Land: The Maritime Exploration of Terra Australis (Canberra: Department of the Environment and Heritage, 2005), p. 6.
92 Ronald Fritze presents an interesting argument for why Ptolemy believed the Indian Ocean was enclosed: “The Homeric Greeks followed later by Herodotus both conflated the Ethiopians of Africa with the dark-skinned peoples of India. A mistaken assumption arose that Ethiopia and the Indian subcontinent were somehow geographically connected. Given this error, it is not surprising that the great geographer Claudius Ptolemy concluded that the Indian Ocean was a landlocked sea with a land-bridge between Ethiopia and India located to the south.” (Fritze, New Worlds, p. 16.)
and on the south by the likewise unknown land which encloses the Indian Sea and which encompasses Ethiopia south of Libya, the country called Agisymba, and on the west by the unknown land encircling the Ethiopian gulf of Libya and by the Western ocean bordering on the western-most parts of Africa and Europe, and on the north by the continuous ocean called the Ducalydonian and Sarmatian which encompasses the British islands and the northern-most parts of Europe, and by the unknown land bordering on the northernmost parts of Greater Asia, that is to say on Sarmatia and Scythia and Serica. The water moreover is much greater in extent than the land.\footnote{Ptolemy, \textit{The Geography}, p. 159.}

But what of this vague southerly land bridge he believed enclosed the Indian Ocean: does it equate to a Ptolemaic southern continent? Certainly modern authors have treated it as such, but not, I contend, in good faith. If you imagine this land bridge stretching deep into the southern hemisphere – as we are wont to do because of our knowledge of later depictions of the southern hemisphere – then it is a prototype of the early modern vision of the southern continent. This impression is encouraged by Ptolemaic maps (maps interpreting Ptolemy’s writings). However, like the reconstructed globes of Crates, we possess no original Ptolemaic maps, and cannot even be sure Ptolemy ever created the sort of map which he describes in such detail.\footnote{See Joseph Fischer’s introduction to \textit{ibid.}, pp. 3-15.} The maps by which we know Ptolemy are much later reproductions, and therein lies the problem. Ptolemy’s simple prose is far less compelling than the visual representation of those words. Thus, Ptolemaic-style maps are well known, whereas his actual comments remain obscure. These maps make it easy – irresistible, even – to imagine the southerly aspect of land extending ever further into the southern climes, whereas Ptolemy himself never entertained any such notion.\footnote{There is almost no limit to what misinformed authors will ascribe to Ptolemy. I was bemused to come across the following passage, a complete invention of the author’s own mind: “The first influential attempt to impose reality upon the idea of the southern hemisphere was that of the second-century Greek geographer Ptolemy, who believed that a large landmass must exist in the earth’s south to balance the north, or else the planet would roll over like a top heavy ball.” (Richard Lansdown, \textit{Strangers in the South Seas: The Idea of the Pacific in Western Thought} (University of Hawaii Press, 2006), p. 15.) This is, suffice to say, complete nonsense; just how mistaken such statements are should be apparent when you consider the fact that Ptolemy, like Aristotle, believed the earth was immobile at the centre of the universe, subject to rectilinear force alone. Under such a system it is simply not possible for the earth to ‘roll over like a top heavy ball.’ See Claudius Ptolemy, \textit{Ptolemy's Almagest}, trans. G.J. Toomer (London: Duckworth, 1984), pp. 38-47.}
Indeed, such extrapolation subverts Ptolemy’s approach to geography by reckoning from the known to the unknown.96

With the voyages of Dias and Da Gama, Ptolemy’s land bridge was demolished, but Ptolemy himself was left atop a pedestal by early moderns who had learned to venerate classical authority. Individuals like the Portuguese historian of exploration, João de Barros, could well exclaim, “Had I Ptolemy, Strabo, Pliny or Salinus here, I would put them to shame and confusion,” but in reality his peers continued to rely upon and accommodate the obsolescent knowledge of antiquity.97 The truth is that texts like Ptolemy’s Geography were venerated not merely for the quality of their learning – which in the case of the Geography was considerable – but also for their status as classical erudition. Tenets of ancient knowledge were periodically discarded as newly acquired empirical data made that knowledge untenable, but so far as possible ancient authority was accommodated – retrospectively moulded into the stuff of precognition by interpreting it to fit in with the latest discoveries. The Portuguese historian and geographer Duarte Pacheco Pereira epitomises this process in his 1508 history of exploration and geography, the Esmeraldo de Situ Orbis:

Since experience is the mother of knowledge, it has taught us the absolute truth; for our Emperor Manuel, being a man of enterprise and great honour, sent out Vasco da Guama, Commander of the Order of Santiaguo, one of his courtiers, as captain of his ships and crews to discover and explore those seas and lands concerning which the ancient writers had filled us with such fear and dread; after great difficulty, he found the opposite of what most of the ancient writers had said.98

96 W.G.L. Randles is one scholar who takes a more measured approach to Ptolemy’s writings, stating: “Ptolemy’s oikoumene...in no way covered the whole of the globe. Its east-west extent was 180 degrees and its north-south limits ran from 63 degrees N to 16 5/12 degrees S. Since Ptolemy saw the oceans as lying in separate basins, the rest of his globe, it was implied, was land surface and not sea.” (W.G.L. Randles, “Classical Models of World Geography and Their Transformation Following the Discovery of America,” in Geography, Cartography and Nautical Science in the Renaissance: The Impact of the Great Discoveries, ed. W.G.L. Randles (Aldershot: Variorum, 2000), p. 1:36.) However, while Ptolemy did conceive of the earth as a terraqueous sphere whereby water filled depressions on the surface of the earth, it does not follow that the unknown regions of the globe are by implication land and not sea.


Pereira is willing to castigate the ancients, whose wisdom has been usurped by empirical data. He furrows his authorial brow and muses: “we have reason to wonder that such excellent authors as these [he lists Pomponius Mela, John Sacrobosco, and Pliny] … should have fallen into so great an error”. It is a strange comment, for Pereira well knew that the ancients were orphaned by the “mother of knowledge” – experience. The irony, of course, is that while Pereira is forced to discard some of the errors contained within these ancient and medieval authorities, he elsewhere relies upon the non-empirical theories of the ancients to interpret recent discoveries in the Americas. As shall be illustrated a little later, Pereira’s reconciliation of data from the Americas with ancient cosmographical theories causes him to promote the greatest of all errant cosmographies, turning the circumfluent oceans that border the continents into a single ocean-lake enclosed by land.

Writing in the wake of the great discoveries, João de Barros wanted to put Ptolemy, Strabo, Pliny and Salinus to shame and confusion; if fair he should add to this list his predecessor, Duarte Pacheco Pereira, and countless other early moderns. But the point is not to list which authors erred and how. The point is that it is the very nature of cosmography to err. Anything less is geography.

**New Worlds, Ancient Knowledge**

As we start to turn our attention back to the representation of a southern continent, let us revisit for a moment antiquity at a time when the earth had been conceived as a sphere. In the analytical milieu of ancient Greece, an obvious question consequent to the concept of sphericity was: just how big is the earth sphere? Keeping in mind that the actual circumference of the earth is around 40 000 kilometres, Eratosthenes, writing in the third century BC, employed an ingenious method to produce a remarkably accurate figure: depending on which value he employed for the unit of measurement known as a stadia, he figured between 39 690 and 46 620 kilometres. Eratosthenes was not the first to calculate Earth’s circumference, nor was he the

---

99 Ibid., p. 165.
last. A number of scholars offered much smaller figures. All of this matters because had Eratosthenes’ calculation been uniformly adopted across the ages, then anytime someone contemplated the notion of a sea-passage due west from Europe to the far eastern provinces of Asia, they would have been confronted by the concept of an Atlantic Ocean so vast as to present the prospect of a voyage of indefinite duration in seas already feared by mariners. Under those circumstances one wonders whether anyone – even those fortified by religious convictions and possessing a sense of their own divinely bestowed greatness – would have embarked upon an exploratory voyage which promised to end in madness or death, and probably both.

Readers will know, of course, that Eratosthenes’ calculation did not hold sway when it mattered, for in 1492 Christopher Columbus set sail across the Atlantic, with Asia in his sights. As Columbus told it, the distance from one side of the oikoumene to the other was an eminently traversable 3200 nautical miles – around 7000 nautical miles and one continent short of the mark. 101 Had America not happened to exist midway between Asia and Europe, his voyage would have duly ended in tragedy. The question, then, is why did Columbus subscribe to such a small figure? The deceptively simple reason is because he wanted the figure to be small; a small circumference coupled with a wide oikoumene made the Atlantic navigable. Columbus’s mind was closed to any other possibilities, for a navigable Atlantic offered the prospect of an infinitely valuable ocean passage west to Cathay – the discovery of which was meant to earn Columbus fame and fortune, and the glory of the title, Admiral of the Ocean Sea. To construct a reality that equalled his ambition, Columbus sought out authority which supported this prospect, leading him to Pierre d’Ailly’s Imago Mundi – Columbus’s chief cosmographical authority. D’Ailly encouraged two important premises: the oikoumene is larger than it is, and Earth’s circumference is smaller than it is. D’Ailly accumulated ancient authorities to establish these premises:

Aristotle says that a small sea lies between the end of the western side of Spain and the beginning of the eastern part of India… Moreover, Seneca, in the fifth book of Natural

---

101 Randles, "Classical Models of World Geography", p. I: 9; James and Martin, All Possible Worlds, p. 35.
Things says that if the wind is favorable, this sea is navigable in a few days. And Pliny, in the second book of the Natural History, teaches that some have navigated from the Arabian Gulf to the Pillars of Hercules in a time that is not very great. For these and other reasons… some conclude, apparently, that the sea is not so great that it could cover three fourths of the earth. To this can be added the authority of Esdras, who in his fourth book says that six parts of the earth are inhabited and the seventh is covered by water.  

Reading the annotations in Columbus’s copy of Imago Mundi, the aspiring explorer’s excitement is patent. In the book’s margins Columbus paraphrased key passages – “This agrees that the sea is wholly navigable and that excessive heat is no impediment” – he cited additional authorities – “Note that blessed Ambrose and Aurelius Augustine and several others took Esdras as a prophet and approved his book” – and when really stirred he framed his annotations in a rectangular border, an archaic equivalent of the exclamation mark.

Thus fortified, Columbus took his proposal for a trans-Atlantic voyage of exploration to the Portuguese crown. When denied a royal charter, Columbus was given leave to petition the Spanish crown. However, the committee of cosmographers established to report to the Spanish monarchs on the merit of Columbus’s proposal concluded that the voyage was unfeasible, and the proposal was rejected, first in 1487, and subsequently in 1491. Even on the basis of a gross underestimate of the circumference of the earth, the Atlantic seemed to the committee uncrossable based on the arguments of a classical scholar still considered the foremost authority on questions of cosmology: Aristotle.

According to Aristotelian physics which taught that the Earth was comprised of concentric spheres of earth, water, air, and fire, the earth-island of Africa, Asia, and Europe (raised above the sphere of water by divine intervention) must necessarily comprise such a small proportion of the globe’s surface that regardless of the exact circumference of the earth, the distance between

---

103 Ibid., pp. 636-639.
Spain and Asia via the Atlantic was impossibly far.\textsuperscript{104} In the meantime, however, the Portuguese had continued to expose the true extent of Africa. This empirical data was taken by Alexander Geraldini as proof that the \textit{oikoumene} had to be much larger than thought. As Aristotelian physics taught that the quantity of exposed earth must be roughly equal in length and width, that meant that not only did the oikoumene extend further south than thought, but further east and west, too.\textsuperscript{105} As the size of the earth-island expanded, the Atlantic shrank. In the end Columbus was granted a royal charter to voyage west in search of a new passage to Asia; his cosmographical arguments were persuasive, though more practical considerations may have carried the day, given Spain was in dire need of a boost to the imperial coffers, and a western passage to Cathay offered just that.\textsuperscript{106}

When Columbus finally took to the open waters of Ocean he possessed nothing in the order of special knowledge of a sea-route to Cathay; what he did have was the cumulative illusions of two thousand years of geographical lore. Each text Columbus consulted was filled with the lore from earlier texts; those earlier texts were themselves the product of named and nameless antecedents. With this in mind, consider the weight of preconception derived through just a handful of texts Columbus consulted, including:

- Pliny the Elder’s \textit{Naturalis historia},
- Plutarch’s \textit{Lives},
- Marco Polo’s \textit{Il Milione},
- the \textit{Historia rerum ubique gestarum} of Pius II,
- and Pierre d’Ailly’s \textit{Imago Mundi}. In these works Columbus would have encountered the following names: Aristotle, Averroes, Avicenna, Eratosthenes, Marinus of Tyre, Strabo, Ptolemy, Solinus, Seneca, Julius Capitolinus, Flavius Josephus, Augustine, Ambrose, Isidore of Seville, the Venerable

\textsuperscript{104} W.G.L. Randles, "The Evaluation of Columbus’ ‘India’ Project by Portuguese and Spanish Cosmographers in the Light of the Geographical Science of the Period," \textit{Imago Mundi} 42 (1990), pp. 50-51. For more information on Aristotelian cosmography see Appendix Two.

\textsuperscript{105} Randles, "Classical Models of World Geography", pp. I: 44-46.

\textsuperscript{106} It should be noted that there is a lot of argument over exactly what information – apocryphal and otherwise – Columbus had in his possession as he began to contemplate the Atlantic and what lay beyond it. For example, see John L. Allen, “From Cabot to Cartier: The Early Exploration of Eastern North America 1497-1543”, \textit{Annals of the Association of American Geographers}, v. 82, no. 3, 1992, pp. 500-506; David B. Quinn, “Columbus and the North: England, Iceland, and Ireland”, \textit{The William and Mary Quarterly}, Third Series, v. 49, no. 2 (1992).
Bede, Alfraganus, Roger Bacon, John Mandeville, Joachim of Fiore, Thomas Aquinas, Peter Comestor, Nicholas of Lyre, Francis Mayronnes, and Paolo Toscanelli.¹⁰⁷

So it was that, like all explorers, when Columbus sailed in search of seas and lands never before encountered by Europeans, his voyage arrived at the nexus of geographical lore and empirical reality. As historical geographer John Allen explains:

Excluders have seldom gone forth merely to probe about for whatever they may happen to discover. They have gone in quest of definite objectives believed to exist on the basis of such information as could be gathered from the geographical lore of their own and earlier times. When one explorer has failed in the quest, others have taken it up until the objectives have been attained or found to be illusory.¹⁰⁸

When land was sighted on 12 October 1492 after thirty-three days on the High Seas, Columbus rejoiced not at the discovery of a new world, but at the fulfilment of the promise and prophecy of pagan and Christian wisdom of yore. In that vein the land he discovered was not, to Columbus’s mind, properly terra incognita; it was the east of the Old World – the very lands Marco Polo had spoken of; part of the lands the Bible said occupied six sevenths of the earth’s surface. His landfall was, Columbus concluded, an island just east of Cipangu (Japan); it had been found to exist exactly where the cosmographers had predicted, in which case there could be no doubt it was the (West) Indies, entrepôt to the untold riches of the Far East. With his faith and preconceptions vindicated, Columbus was confident he had replaced hearsay and theory with indisputable empirical data. He comments in a letter penned at the conclusion of his voyage, “For although there was much talk and writing of these lands, all was conjectural, without ocular evidence. In fact, those who accepted the stories judged rather by hearsay than

¹⁰⁸ Allen, "Lands of Myth", p. 43.
The irony of this comment is that hearsay and conjecture determined Columbus’s interpretation of his discoveries.

To put it another way, ‘ocular evidence’ is only as good as the lens through which it is viewed. This is a dictum that lies at the heart of historical geography and the way historians interpret evidence. Even where the historical actors reporting or interpreting empirical data suggest otherwise, non-empirical lore is rarely completely superseded upon the acquisition of empirical data, as that earlier lore colours the interpretation of all new information, and influences the way new data is fitted with both the known and unknown to complete the cosmographic image of the world. It ensures that even after it has been supplanted by empirical data, ‘redundant’ non-empirical lore continues to affect geographical conceptions, potentially for centuries to come.

This process – universal to the act of geographical exploration – has been articulated by John Allen:

No exploratory venture begins without objectives based on the imagined nature and content of the lands to be explored. Imagination becomes a behavioral factor in geographical exploration as courses of action are laid out according to preconceived images; later decisions based on field observations may be distorted by these images. The results of exploration are modified by reports that have been written and interpreted.

---

110 In the years following Columbus’s seminal voyage, the regions of South America, Central America, and Northern America were explored and charted. Columbus eventually conceded that these lands were not just islands, but connected to form a vast mainland. However, he steadfastly refused to concede that the lands could be anything other than a part of the distant Asian side of the oikoumene; if they comprised a mainland, it was a mainland connected to Asia. He died holding on to his idéé fixe of a trans-Atlantic sea-passage to Cathay. In a letter to monarchs Ferdinand and Isabella of Spain, Columbus reconciled the presence of a mainland with his increasingly confused cosmographic vision of the world: “… I have come to the following conclusions concerning the world: that it is not round as they [cosmographers] describe it, but the shape of a pear, which is round everywhere except at the stalk, where it juts out a long way; or that it is like a round ball, on part of which is something like a woman’s nipple. This point on which the protuberance stands is the highest and nearest to the sky. It lies below the Equator, and in this Ocean, at the farthest point of the east, I mean by the farthest point of the east the place where all land and islands end.” (Ibid., p. 218.) In grasping for a meaningful explanation of the lands he had seen, Columbus had attached himself to a quasi-Aristotelian scheme (hence the pear-like raising of earth above water), whereas it was his very own landfalls in the Americas along with those of his successors (especially the 1500 discovery of Brazil by Pedro Álvares Cabral) which sounded the death knell for Aristotelian cosmography: there was simply too much land, too widely dispersed, for the theory of concentric spheres to make any sense. With this blow yet another cosmographic fiction was relegated to the margins of scholarship, the last vestiges of Aristotelian physics lingering in flawed scholarship until the early seventeenth century. (Randles, "Classical Models of World Geography", pp. I: 70-74.)
in the light of persistent illusions and by attempts to fit new information into partly erroneous systems and frameworks of geographical understanding.\textsuperscript{111}

To hammer home this point, I draw attention to a letter written to Columbus by Ferdinand and Isabella – the Spanish monarchs who sponsored his voyage. I leave the reader to their own assessment:

this enterprise, was planned, started, and carried out by your hand, labor and industry, and it seems to us that all that which at the beginning you said to us would be realized, for the greater part all has come out exactly as if you had seen beforehand that which you told us.\textsuperscript{112}

\textbf{The Western Antipodes}

Columbus may have convinced himself and Ferdinand and Isabella that he had discovered a new passage to Asia, but what did others make of the discoveries in the Americas? Initially, at least, Columbus’s campaigning proved decisive, and it was generally accepted that he had indeed crossed to far eastern Asia. Many fellow cosmographers and explorers were willing to suspend the sort of disbelief which Columbus had encountered when proposing his voyage, to subscribe to an altogether more compelling version of reality. Take the comments of Peter Martyr, the Spanish chronicler of explorations, who recognised the problems with Columbus’s cosmography, but subscribed to it nonetheless:

though the opinion of this Christopher Columbus seems to conflict with the size of the globe and the opinion of the ancients on the navigability of the antipodes, yet the parrots brought from there and many other things show that these islands taste of the soil of India, either because of their proximity, or through their natural properties, especially since Aristotle about the end of his book, \textit{On the Heavens and the Universe}, Seneca, and

\textsuperscript{111} Allen, "Introduction", p. 7.
\textsuperscript{112} George Nunn, "The Three Maplets Attributed to Bartholomew Columbus," \textit{Imago Mundi} 9 (1952), p. 15.
others skilled in cosmography testify that to the west no great stretch of sea separates shores of India from Spain.\textsuperscript{113}

Another case in point is the evolution of beliefs about the Americas held by the man who gave them his name: Amerigo Vespucci. In a letter penned in 1500 after returning from a 1499 voyage led by Alonso de Ojeda that coasted the shores of Central America, Vespucci speaks of having just returned from the “Indian regions”. He then details the following:

And upon our return to the vessels, we weighed anchor and set sail, turning our prows southward, since it was my intention to see whether I could round a cape of land which Ptolemy calls the Cape of Cattigara, which is near the Sinus Magnus [the easternmost part of the Indian Ocean]; for in my opinion it was not far from there, to judge by the degrees of longitude and latitude...

We were thirteen months on this voyage, encountering great dangers and discovering endless Asian land and a great many islands...\textsuperscript{114}

Vespucci’s thinking is a reflection of the dominant cosmographic model then in circulation. He had worked for the businessman Gianotto Berardi, who held closely to the Columbian world view, and his peers and superiors on his first American voyage included men from the crew of Columbus’s ground-breaking original voyage, such as Alonso de Ojeda, captain of Vespucci’s voyage, and Juan de la Cosa, cosmographer and cartographer.\textsuperscript{115} With these facts in mind it seems reasonable that Vespucci would subscribe to the same cosmographic interpretation as his more eminent contemporaries.

\textsuperscript{113} Peter Martyr, Geoffrey Eatough (ed. and trans.), \textit{Selections from Peter Martyr}, (Brepols: Turnhout, 1998), p. 47.
\textsuperscript{114} Amerigo Vespucci, \textit{Letters from a New World: Amerigo Vespucci's Discovery of America}, ed. Luciano Formisano, trans. David Jacobson (New York: Marsilio, 1992), pp. 4, 15. Vespucci adds elsewhere (p. 11): “After having sailed about four hundred leagues, continually along the coast, we concluded that this was continental land – which I esteem to be bounded by the eastern part of Asia, this being the beginning of its western part…”
However, digging into the detail of the letters Vespucci wrote in which he discusses his voyages, it becomes clear that Vespucci’s cosmographic understandings were problematic even for their own time: simply, he laboured under incompatible cosmographic apprehensions. In particular, Vespucci subscribed to a significantly more accurate model of the earth’s geometry than Columbus. Vespucci states in his letter of 1500 to Lorenzo di Pierfrancesco de Medici that the earth’s circumference is 24000 miles, significantly more than Columbus had allowed for, and much closer to its true value. He then reckons the position of his trans-Atlantic landfall to be 5466 miles west of the Spanish city of Cadiz.\footnote{Vespucci, \textit{Letters from a New World}, p. 8.} Even on the basis of an inflated figure for the length of the \textit{oikoumene}, that still meant that the distance between his trans-Atlantic landfall and the farthest reaches of Asia was, according to Vespucci’s own calculations, \textit{thousands of miles}. Why, then, did he suppose he had encountered the easternmost Asian region of the \textit{oikoumene}? Vespucci neither recognises nor accounts for this anomaly, nor was it accounted for by the numerous cosmographers who had similarly accepted the Columbian cosmography. This may seem trivial – after all, in coming years some cosmographers would make sense of the new data by simply extending the Asian continent with an enormous American peninsula – but the point is, Vespucci and his contemporaries did not do this. They promoted inconsistent, unreconciled cosmographies.

There is no easy way to explain this away, especially when we only have limited traces to ascertain motivations and misapprehensions, though it is probably fair to say a combination of diffidence, deference to authority, and wishful thinking played a role. With Vespucci, however, there may also be a case that the inconsistencies are a product of poor scholarship. As Felipe Fernández-Armesto has shown, Vespucci was a less than competent cosmographer. The appearance of erudition was easily achieved through the deployment of figures and the mention of devices and techniques, and Vespucci certainly achieved this much. True understanding and reliable knowledge were, however, much rarer commodities, ones which Vespucci may have lacked.\footnote{Fernandez-Armesto, \textit{Amerigo}, p. 80.}
Vespucci’s credulity did, of course, have limits, but for some years he would subscribe to the Colombian cosmography. On returning from his first voyage, Vespucci deliberated on the prospect of a second expedition; his forward-looking objectives were “to bring back very great news and to discover the island of Taprobane [Sri Lanka], which lies between the Indian Ocean and Ganges Sea…”\textsuperscript{118} He set sail on this new adventure in 1501. During the voyage, and once he had time to contemplate his discoveries, we observe a subtle but material shift in Vespucci’s cosmographic reckoning of the recently discovered trans-Atlantic lands. He makes no ceremony of this shift, but it is amply conveyed by his language. No longer mentioning the Indies or Asia, Vespucci instead refers to a cosmographic concept which was about to undergo something of a golden age. Listing some of the wildlife he encountered, Vespucci says: “who could tell the infinite number of forest animals, the abundance of lions, jaguars, catamounts – not like those in Spain but in the Antipodes – so many lynxes, baboons, monkeys…”\textsuperscript{119} ‘Antipodes’ has replaced ‘Asia’. Is Vespucci employing the motif of antipodality here to suggest the quality of biological inversion? Perhaps. More importantly, however, he utilises the concept of the Antipodes to frame his spatial reckoning: “In conclusion, I was in the region of the Antipodes, on a voyage which covered a quarter of the world”.\textsuperscript{120}

Vespucci claimed for this voyage the remarkable feat of having sailed to 50ºS, roughly the latitude of the Falkland Islands. In an unpublished letter known as the Ridolfi fragment, Vespucci says:

\begin{quote}
In truth when we were at the latitude of fifty degrees, we were at sea and not on land, because when we managed to push off from land, we were not at a latitude greater than thirty-two degrees, and then we sailed to the south-east until we arrived at the said latitude of fifty degrees without finding land, although we judged that we were near land by many visible signs, among them countless birds of various sorts and much wood in the water: most certain signs.\textsuperscript{121}
\end{quote}

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{118} Vespucci, \textit{Letters from a New World}, p. 16.
  \item \textsuperscript{119} Ibid., p. 31.
  \item \textsuperscript{120} Ibid., p. 30.
  \item \textsuperscript{121} Ibid., p. 37.
\end{itemize}
\end{footnotesize}
If Vespucci believed his own press – for it cannot be confirmed that he did in fact sail to such a formidable southerly latitude – then it is little wonder that his cosmographic conceptions were changing. “I have seen during these voyages,” he explains, “nearly two thousand leagues of continental coast” – a great deal of which was in the southern hemisphere. This simply could not be reconciled with even the most inept conception of the Indies. Thereafter, in a widely published letter titled “Mundus Novus”, Vespucci austerely declared these lands to be “a new world, since our ancestors had no knowledge of them and they are entirely new matter to those who hear about them.” Thus with no fanfare Vespucci became a proponent of the view that he and his predecessors had discovered the Western Antipodes – and with it a New World.

But there was more. Recounting the travails of a third voyage of 1501, the so-called Soderini letter, published under the name of Vespucci but almost certainly written or compiled by some nameless entrepreneur, claimed that Vespucci had sailed some fifty degrees south – a claim the real Vespucci had made elsewhere. Heading on a south-east course in open and bitterly cold waters, we are told that the fleet was struck by a storm. The letter continues:

And sailing in this storm, we sighted new land on 7 April, along which we ran some twenty leagues; and we found it to be all exposed coast, and we saw no harbor or people, I believe because the cold was so great, since no one in the fleet could either fend it off or bear it. Thus since we were in such danger, and in such a storm that we could scarcely discern one ship from another because of the high seas and the great darkness the storm created, we agreed with the captain general to signal the fleet that it should come together and that we should leave the land and set a course back to Portugal.

Modern scholars argue over the details of Vespucci’s voyages, in the process sorting through his letters for mistakes, lies, and apocrypha produced by enterprising fraudsters. Whatever the

---

122 Ibid., p. 38.
123 Ibid., p. 45.
124 Ibid., p. 91.
125 The process of sifting through the geographical information of explorers like Vespucci is so incredibly difficult because in Vespucci’s time the knowledge and skills did not exist to accurately report or chart geographical data of far-flung regions. As Parry points out, “Throughout the Age of Reconnaissance most sailors groped their way about the world. They could find
outcome of these debates – even in a worse-than-worst case scenario wherein Vespucci is proved to have been a fictional character, an early modern equivalent of John Mandeville – it makes no difference to the story of the southern continent. What matters is lore – the content of geographical discourse. The point here is that beliefs and actions turned not on the basis of truth or fact, but on what was accepted as truth or fact. So, did Vespucci really encounter land deep in the frigid southern latitudes – perhaps making a mess of the latitudinal and longitudinal coordinates of the Falkland Islands? Almost certainly he did not, though we cannot be sure. What we can be sure about is that in the Soderini letter someone published such a claim in his name.

The Soderini letter was subsequently reproduced and popularised in the influential treatise of Martin Waldseemüller, *Cosmographiae Introductio* (1507). Most are familiar with Waldseemüller by dint of his impressive world map of 1507 (Figure 2d) – a world map made in twelve sheets and which would, when put together, cover an entire wall. It was with this map that Waldseemüller became the first scholar to dub the new continent of the southern hemisphere ‘America’ – a tribute to Amerigo. Despite Waldseemüller’s subsequent namers’ remorse, it would prove an enduring appellation.\(^\text{126}\) As far as Waldseemüller was concerned, America was a new world, while nevertheless being reconcilable with ancient knowledge. Not only does he refer to America as the Antipodes, he endorses the more specific cosmographic labels of antiquity:

> It is of these southern climes that these words of Pomponius Mela, the geographer, must be understood, when he says: ‘The habitable zones have the same seasons, but at different times of the year. The Antichthones inhabit the one, and we the other. The situation of the former zone being unknown to us on account of the heat of the intervening zone, I can speak only of the situation of the latter.’\(^\text{127}\)

---


Figure 2d. Martin Waldseemüller, world map in 12 sheets, 1507. Image courtesy of the Library of Congress.
In drawing upon antiquarian scholarship, Waldseemüller was typical of his time. Wherever the opportunity presented itself, cosmographers accommodated new discoveries like those in the Americas with ancient learning. Raffaello Maffei da Volterra, writing in his encyclopaedia of 1506, was even more conspicuously learned: “Ships have crossed as far as our Perioecians and have discovered islands. To the south, the sailors of the King of Portugal have sailed in their voyages beyond the Tropic of Capricorn and have reached the Antoecians.”

Like Waldseemüller and Maffei, many authors in the early sixteenth century would refer to South America as the Antipodes; in doing so savants were able to ornament their scholarship with ancient learning without really committing themselves to anything: the label ‘Antipodes’ evoked classical authority, while in terms of functionality it merely served as a spatial descriptor – meaning opposite. Even in this sense, labelling South America the Antipodes was not particularly apt.

Thus, reference to South America as the Antipodes cannot in and of itself be considered part of the evolution of the idea of the southern continent, and the reason why is evident in both the words and maps of Waldseemüller: “Thus the earth is now known to be divided into four parts. The first three parts are continents, while the fourth is an island, inasmuch as it is found to be surrounded on all sides by the ocean.” As conceived by Waldseemüller and others of his ilk, South America may well be located mostly in the southern hemisphere, but it is seen as an island of limited extent. If you look at the Cantino Planisphere, produced around 1502, you can see as full a representation of the South American coast as discovery (or purported discovery) then allowed (Figure 2e). Thus limited, these maps possessed no Antarctic dimension and so play only a supporting role in the evolution of the idea of the southern continent. Some savants, however, had grander designs on South America, as will be seen in the next chapter.

---

130 Referring to South America as the Antipodes is much the same as the modern-day practice of referring to Australia as Terra Australis: it is a decorative term that hints at erudition, whilst telling the reader nothing more – less, even – than the correct appellation of ‘Australia’. It is a subject I will return to in later chapters.
131 Waldseemüller, The Cosmographiae Introductio, p. 70.
Figure 2e. Cantino Planisphere, 1502. Image courtesy of the Biblioteca Estense, Modena.
Conclusion

What becomes clear is that geographers, cartographers, and all sorts interested in the shape of the expanding world of the late fifteenth and early sixteenth centuries were feeling their way forward with no fixed cosmography to guide their way. There existed a suite of ideas that took in concepts from the classical, medieval, and, now, early modern times, which any savant could rake over and selectively appropriate as they attempted to make sense of—in their own minds and for a curious audience—purported geographical discoveries (some real, some apocryphal) that were beyond imagination just a few generations past.

For many, their natural inclination was to preference classical learning when contemplating the inchoate cosmography of the earth. Inevitably, there were revered authorities whose teachings were indefensible in light of the new geographical discoveries. Ptolemy would never completely lose his position as a venerable father of modern geography, but his concept of an Afro-Asiatic land bridge had to give way to geographical reality. Of course, for the most part knowledge of geographical reality was still many generations from being realised. Even where knowledge of new lands existed, it was knowledge generated, in the first instance, through conceptual filters that would permanently affect the interpretation of that data. What is more, the nascent art of navigation (as opposed to pilotage) was yet unequal to the task of reporting the fruits of reconnaissance: many discoveries were made, but recording and reporting the location of those discoveries engendered considerable confusion, sometimes compounded by incompetence. It was a situation that cast a pall of doubt over all geographical data, allowing, if not encouraging, the interpretation of data to fit with preconceptions.

In such a milieu, it seems only natural that cosmographers would blend the old with the new. Rather than fashion a cosmographical model afresh, savants could fit geographical data to ancient learning, and ancient learning to geographical data. We may look back on this practice and condemn its practitioners for their willingness to interpolate, interpret and extrapolate, but to do so would be like chastising a car salesman for selling cars. Cosmography was a science and an art that only existed so long as part of the world was known, and part remained unknown. It
should be obvious by this point that the notion that cosmographers had a horror of the void is a bizarre concept we moderns have invented; in truth, cosmographers shared an unyielding curiosity about the shape of their world. They wanted to make sense of the intertwined geographies of the earth, and drawing upon the classical idea of Antipodes helped them do that.
Chapter Three

The Cartographers’ Southern Continent

...where men had the choice they preferred to go on believing in their old illusions. Preconceived notions of what they might find, led them to think they had found what they wanted. So often men only see in the world, the world they want to see. Perhaps nowhere is this more true than in the world of maps.

-- J. Wreford Watson 132

In the first few decades of the sixteenth century the southern continent was yet to crystallise into the verisimilitudinous geography that will become familiar in later decades. It is just one cosmographic postulate among a range of possibilities. This is where cartography starts to come into play. As maps became more widely disseminated in the early modern period and increasingly popular as artifacts of erudition, cartographers set to work expressing in visual form both the non-empirical lore and the geographical data that suggested the existence of a southern continent. It was once the map-makers started to give expression to these geographical ideas and information that the southern continent began to gain a relentless momentum as a cosmographic and aesthetic entity synonymous with images of the globe.

We saw in Chapter Two how scholars like Waldseemüller conceptualised the discovery of the Brazilian coastline – supposing (correctly, as it turned out) that South America was insular to the south. Indeed, Waldseemüller’s map bears a compelling resemblance to the shape of South America as we know it today. But many men have been right for the wrong reasons, and so while we may marvel at Waldseemüller’s anticipation of knowledge yet to be confirmed, his cosmography was no more and no less valid than the interpolations of other savants – for, either way, we are dealing with speculation. Where things get interesting for this story is the point at which savants made the cosmographic leap to ask: what if South America and the Antipodes are one?

Birth of the Southern Continent?

Many old maps do not contain inscriptions, accompanying text, or other notations that reveal the intention or understanding of its author. In such cases, close examination of the map in question coupled with insights extracted from studying the context of the fields of study to which the map belongs is often sufficient to provide a set of possible explanations of authorial intent and understanding – while nevertheless not allowing historians to offer definitive conclusions. I offer this caveat because I want to turn my attention to a map which is of special interest, but a map for which our knowledge is fractured and incomplete. This map may mark the beginning of a new tradition of imagining austral lands.

The map in question (Figure 3a) was produced in 1506 by the team of Giovanni Contarini and engraver Francesco Rosselli. The Contarini map is often compared with a map made by Johannes Ruysch that accompanied the 1507 Rome edition of Ptolemy’s *Geographia* (for the Ruysch map see Figure 3b). Many scholars have suggested that the two maps are based on a common antecedent, though it is also sometimes said that the Ruysch map draws on the Contarini. Whatever these maps’ similarities, there is at least one significant difference, and that is in the depiction of the South American coast, labelled by Ruysch *Terra Sancte Crucis sive Mundus Novus*, ie, Land of the Holy Cross or the New World. In Ruysch’s map the eastern coast of South America is cut off at the border of the map, at around 37ºS. Evidently it is envisaged that this land tends further south, but in what configuration it is not suggested. In a clear reference to Vespucci, Ruysch states in an inscription: “Portuguese navigators have inspected this part of this land, and have sailed as far as the fiftieth degree of south latitude without seeing the southern limit of it.” The western border to Ruysch’s South American mainland is even more ambiguous, having been foregone entirely – not surprising given Europeans had no information about this region – instead subordinated to a cartouche which obscures the 15º of longitude in which Ruysch otherwise would have had to provide a coast or shade the area as an unknown region. The inscription in this cartouche reads:

As far as this Spanish navigators have come, and they have called this land, on account of its greatness, the New World. Inasmuch as they have not wholly explored it nor surveyed
it farther than the present termination, it must remain thus imperfectly delineated until it is known in what direction it extends.

The difficulty of depicting an unknown coast is thus avoided.

The Contarini map, of which but one tattered and incomplete copy still exists, is more bold. Down to around 23°S, the eastern coast of Brazil is depicted tending south/south-east. From there the coast turns abruptly south-east where it runs until around 37°S, beyond which the remnant copy is incomplete. The western coast of South America is also depicted – it is not obscured by cartouches or inscriptions. This coast tends south-west until around 50°S when it abruptly turns west, tending very slightly to the south. This is a rather more significant difference between Contarini and Ruysch (or other peers) than most scholars have made out. Contarini’s South American landmass is unambiguously huge. It is depicted with coasts tending south-east and south-west into the unknown yonder. The most frustrating thing about the map is that the extant copy of the map is in poor condition – in particular, the bottom of the map and the left-hand side of the map have been severed. The map-proper only extends to 50°S, but Contarini continues his depiction of geographies beyond this border, into the decorative frill. So the question that gives rise to tantalising possibilities is this: if the bottom of the map had not been severed and thus obscured at around 37°S, how far and in what direction would we have found the eastern coast of South America to extend (the same goes for the western coast)? The answer is suggested by the presence of a cartouche to the right of the South American coast. It states: “This is that land named Santa Cruz which was lately [discovered] by the most noble lord Pedro Alvares [Cabral] of the illustrious stock of the most serene King of Portugal in 1499....” I believe, based on the position of this inscription so far east and south of the established Brazilian coast, that it most likely refers to a coast running beneath the inscription which is connected to the South American mainland.
Figure 3a. Giovanni Contarini, world map, 1506, engraved by Francesco Rosselli. Image courtesy of the British Library.
Figure 3b. Ruysch’s map accompanied the 1507 edition of Ptolemy’s *Geography* (Bernardinus Venetus de Vitalibus: Rome). Image courtesy of the Library of Congress.
In another inscription, Contarini expresses his belief that Columbus found a passage to Cathay, indicating that he was trying to reconcile new discoveries with established geographic and cosmographic knowledge. If Contarini interpreted Columbus’s discoveries through the lens of geographical lore, it prompts the question, did he do likewise with Cabral and Vespucci and other explorers’ discoveries in South America? In particular, in depicting South America does Contarini incorporate into his cosmographic reckoning the geographical lore of the Antipodes? Whilst we cannot know for sure, there is good reason to think he does, based on the inscription Contarini placed to the left of South America: “The world and all its seas on a flat map, Europe, Lybia, Asia, and the Antipodes…”

The reason Contarini’s South American continent is much larger than any cartographer before him had depicted it is because he seems to be joining together – as one continent – the discovered coasts of Brazil with the idea of antipodal lands running across the southern latitudes of the hemisphere. If this is the case, Contarini joins the ranks of cosmographers who in the early years of the sixteenth century subscribed to the notion of the mega-continents: the idea that South America was connected to a sprawling southern hemispheric continent, and then, in some imaginings, with North America and then North America to both Asia and Europe. It would also make Contarini’s map the first rendering of our southern continent – the southern continent which extends about the Antarctic region. We will never know beyond the shadow of a doubt if Contarini had in mind this grand cosmography, but others have left us in no doubt that they did.

**The Mega-Continent**

Duarte Pacheco Pereira was a true Renaissance man: cosmographer, geographer, explorer, soldier. He wrote the geographical treatise *Esmeraldo de Situ Orbis* around 1508. Pereira begins by emphasising his knowledge of classical authorities, and he endorses much of that knowledge, except where more recent discoveries have allowed him to refine it. He provides in his opening chapter a sketch of the earth’s system of zones; citing Strabo, Pliny and Pomponius Mela, Pereira elaborates on the question of habitability:
[Of the temperate zones] it is said that the Antipodes inhabit one part and we the other; they dwell on the opposite side of the earth, where the sun rises when it sets for us, and their feet are over against our feet, for which reason they are called Antipodes.\textsuperscript{133}

He goes on to acknowledge the ancient opinion that land is everywhere surrounded by sea, but disagrees. He quotes Genesis in support of his argument:

“Let the waters under the heaven be gathered together unto one place,” the words “unto one place” showing that the earth is not surrounded by the sea, for if it were so these words would not have been used or required… It follows, therefore, that the earth contains water and that the sea does not surround the earth, as Homer and other authors affirmed, but rather that the earth in its greatness surrounds and contains all the waters in its concavity and centre; moreover, experience, which is the mother of knowledge, removes all doubt and misapprehension…\textsuperscript{134}

From this foundation, Pereira then draws upon medieval authorities to interpret the discoveries in the Americas. To do so he must reconcile two potentially contradictory tenets. First, Pereira believed in Antipodal lands over and above the discovery of land in South America. Second, he endorsed the notion that there are four parts of the world. He reconciles these premises by linking them in the most straightforward way possible:

Such is its [America’s] greatness and length that on either side its end has not been seen or known, so that it is certain that it goes round the whole globe… Many years before this land was known or discovered Vincent in the first book of his \textit{Mirror of Histories}, chapter 177, said that “besides the three parts of the earth there is a fourth part beyond the Ocean to the South, where the Antipodes are said to dwell.” Since this land beyond the Ocean is so large and on this side we have Europe, Africa and Asia, it is clear that the Ocean is placed between these two lands, with land on either side of it, and we can

\textsuperscript{133} Pereira, \textit{Esmeraldo De Situ Orbis}, p. 10.
\textsuperscript{134} Ibid., p. 11.
therefore affirm that the Ocean does not surround the earth as the philosophers declared, but rather that the earth must surround the sea, since it lies in the concavity of the earth and its centre. Therefore I conclude that the Ocean is only a very large lake set in the concavity of the earth and that the earth and sea together form a sphere.

…[Indeed,] the water only occupies a seventh part of the earth, as is shown in the fourth book of the prophet Esdras…: “On the third day Thou didst command the waters to be gathered together into a seventh part of the earth but six parts Thou didst dry up.”

In Pereira’s cosmography, every mainland – imagined and real – is linked: the northern and southern American lands are one, and in turn they join with the Antarctic continent in the south, and the oikoumene in the north. You can see just what this cosmography would have looked like in the 1519 map of Lopo Homem (Figure 3c). The Antarctic aspect of Homem’s mega-continent is labelled, like Brazil, Mundus Novus (New World).

Figure 3c. Lopo Homem, world map, 1519. Image courtesy of the Bibliothèque Nationale de France.
Homem’s is not the only map to depict such a cosmography. A sketch map centred on the Indian Ocean found in the collection of geographical documents of Alessandro Zorzi was probably produced by Zorzi sometime in the 1520s (Figure 3d). This particular map is rarely reproduced or discussed by historical geographers and historical cartographers; more attention is given to Zorzi’s other three sketch maps which, placed together, form an abbreviated map of the world and are considered a faithful representation of the Columbian cosmography. Yet the sketch centred on the Indian Ocean is equally interesting, for it depicts a landmass stretching across the bottom of the map – some form of a southern continent. To the east this land is labelled “Terra Incognita”. Further east the same landmass is labelled “Brasil”. There is some intrigue about this map, for such is the nature of the sketching that some of the inscriptions are barely legible, and unfortunately it is unclear where one inscription ends and another begins. It makes it difficult to assess the author’s intentions and understanding, because the arrangement of the words changes their meaning. Based on a close examination of the map and consideration of context, I believe that the inscription in the southern continent of the Zorzi map is intended to read: “Terra vista da portogalesi dal cap[o] di B[uona] S[peranza] per ostro meia 600 lôtã si chiama brasil.” This translates as: “Land seen by the Portuguese from the Cape of Good Hope, it is distant 600 miles south; it is called Brasil.”

136 There are other possible arrangements of the words. It could be argued the words were intended to be arranged thus: “Terra vista da portogalesi per ostro meia 600 lôtã si chiama brasil dal cap[o] di B[uona] S[peranza].” But this would translate rather cumbersomely to, “Land seen by the Portuguese distant 600 miles to the south, it is called Brasil… the Cape of Good Hope.” Also possible is “Terra vista da portogalesi per ostro meia 600 dal cap di B[una]S[peranza] lôtã si chiama brasil”, but this seems to me unlikely as it would be an odd way for the author to have physically arranged these words on his map. It is also possible that the inscription was intended as two separate annotations. If that is the case the inscriptions would read: “Brasil: Terra vista da portogalesi dal cap[o] di B[uona] S[peranza]”. This translates: “Brazil: Land seen by the Portuguese from the Cape of Good Hope.” And the other would read: “Terra Incognita: per ostro meia 600 lôtã si chiama brasil.” This would translate to something like: “Terra Incognita: to the south distant 600 miles, it is called Brasil.” (See Olshin, “A Sea Discovered”. pp. 308-312; Randles, "Classical Models of World Geography and Their Transformation Following the Discovery of America." pp. 61-64. (I also thank Robert King for his illuminating comments on this map (private correspondence).) [The Zorzi sketch maps, part of the BNCF’s collection, can be difficult to obtain. Fellow researchers having difficulty obtaining quality images are welcome to contact me and I can pass on high resolution TIFFs for research purposes. Indeed, this goes for any of the other maps I use in this thesis which prove hard to locate or acquire – though naturally I can only pass on these images for research and not publication use.]
Figure 3d. The Alessandro Zorzi sketch maps are part of the Alberico collection of documents compiled by Zorzi (manuscripts B.R. 234-236), held by the Biblioteca Nazionale Centrale di Firenze (BNCF). This is a detail of the Zorzi sketch map in B.R. 236 (‘Conti’), folio 169v. The map’s date of production can only be narrowed down to somewhere between 1508 and 1526. Image courtesy of the BNCF.

Figure 3e. Alessandro Zorzi sketch map, detail, manuscript B.R. 234 (‘Alberico’), folio 56v, circa. 1508-1526. Image courtesy of the BNCF.
But even if we were sure what the inscriptions say, there will still be uncertainty regarding the sources for the comments. Depending on what date the Zorzi map was created – arguably as late as 1526 – the author may have been drawing upon the *Summa de Geographia* of Martín Fernández de Enciso, published in 1519. De Enciso, himself not revealing his source (though it almost certainly is the Soderini letter attributed to Vespucci) gave the following information about the southern continent:

This Cape of Good Hope has to the west the land called austral; from the Cape of Good Hope to the ‘tierra austral’ the distance is 450 leagues; it is in 42º; it is 600 leagues from Cape St. Augustine [which is located in Brazil 8ºS]... Nothing is known of this land except what has been seen from ships, for no one has landed on it.¹³⁷

Whatever the source or sources the author of the Zorzi map was drawing upon, one thing is certain: he was invoking the theory that a southern continent joins up with the recently discovered lands of South America. This is made clear in a few ways. First, the southern continent is labelled both “Brasil” and “Terra Incognita”; while this may seem contradictory – matching a known place with a land labelled ‘unknown’ – it makes good sense given the context. On the Zorzi sketch map showing all of Africa and the eastern corner of Brazil (Figure 3e) the Brazilian landmass is labelled “Anthipodi” and is cut off by the border of the map, implying the landmass extends further south. We already know that the southern continent is conceived by the author as lying just 600 miles south of the Cape of Good Hope. We can get a sense of latitudes between these two maps by comparing the location of the Cape of Good Hope (“C de Bona Speranza”) on each. What becomes clear is that the South American landmass (see Figure 3e) extends further south than the latitude at which we find the northern border of the southern continent (see Figure 3d). Considering the way the author has spoken of Brazil as ‘Anthipodi’, and the southern continent as ‘Brasil’, the conclusion seems inescapable that the author envisaged the South American continent connecting to the southern continent.

What starts to become clear is that in the early sixteenth century the classical notion of Antipodes was not uniformly explained away as just being the new discoveries in the Americas. Some savants were possessed of the idea that the Antipodean continent stretched to the Antarctic regions, just as the *oikoumene* possessed Arctic regions. Andrea Corsali, a Florentine explorer and merchant who traversed the waters of South East Asia, drew together the disparate geographies of east and west in a letter penned in 1516:

> In the part of the east are islands where are born aromatic clove-trees called Malucos, and where one finds nutmeg and mace; in another the aloe tree, in others, sandalwood. And navigating until the eastern parts, they say that there is a land of pygmies [New Guinea]; it is the opinion of many that this land goes on to connect with the coast of Brazil by way of a stretch of southern [land].

Within the evolution of this particular cosmographic framework we should situate one final map which attracts considerably more attention than these other traces combined: the 1513 map of Turkish scholar Piri Reis (Figure 3f). This map is a particular favourite of eccentrics who periodically appropriate it to demonstrate pre-knowledge of Antarctica possessed by the Portuguese, Chinese or some other (potentially inter-galactic) nation of explorers. Well might such remarks be dismissed as ravings, but it does not obviate the task of explaining Reis’s cartography.

Upon examination, it is evident that Reis’s Antarctic landmass sprouting from South America is actually quite similar to the depiction of this concept by Lopo Homem. Homem’s map post-dates Reis by six years, so does that make Reis the prototype for this type of representation of the southern continent? I do not think it does, for the way South America and the southern continent are represented on this map is not unique. The idea of a connected American-

---

138 Olshin, "A Sea Discovered", pp. 311-312.
Antarctic continent is established in geographical discourse at the latest by 1508 with Duarte Pacheco Pereira. But there is a reasonable case to be made for the argument that this idea, or a form of it, preceded Pereira, as we see with the Contarini map which implies South America may not be insular to the south. As for Piri Reis’s sources of information, he tells us that, amongst a range of sources, he has utilised Portuguese maps for his geography. The most pertinent inscription upon the southern part of Reis’s sprawling landmass may also suggest that he was aware of the contents of the Soderini letter: “This country is barren. Everything is desolate and in ruins and it is said that large serpents are found here. For this reason the Portuguese infidels did not land on these shores and these shores are also said to be very hot.”

These comments are by no means a perfect match with any explorer’s voyage into the southern Atlantic, though Vespucci seems the best fit; indeed, this inscription seems to be something of a mélange, mentioning heat in latitudes known to be cold, and barrenness when the rest of Brazil’s shores are lush.

Perhaps what is most interesting is that there is no justification provided for the extent of the southern landmass – that the Portuguese infidels had purportedly discovered land in these southern latitudes was sufficient confirming evidence of a larger undisclosed precept: the idea that extensive lands existed about the Antarctic region. We can but imagine the extent to which classical and medieval authority is at play here. It is possible, even, that Reis subscribed to the same view as Pereira, believing that the world’s lands encompassed the seas, not vice versa. One inscription is loosely suggestive of this, stating that before Columbus it “was believed that the sea had no end or limit, that at its other extremity darkness prevailed. Now they have seen that this sea is bounded by a coast, and because it is like a lake…”

---

140 Inscription 10 (Gregory C. McIntosh, *The Piri Reis Map of 1513* (Athens: University of Georgia Press, 2000), p. 49). For further discussion of the Reis map, see McIntosh.
141 Inscription 22 (Ibid., p. 33).
Figure 3f. Piri Reis, 1513. This map is part of the collection of the Imperial Library, Topkapii Palace, Istanbul.
Rosselli

With all this intrigue about the first map to depict South America connected to an Antarctic landmass, left in our wake is the first extant early modern map to unambiguously depict a southern continent: Francesco Rosselli’s world map of 1508. The Greenwich version of this map is stunningly hand-coloured, and there is, plain to see, a modest southern continent located to the south of the Cape of Good Hope (Figure 3g).

This is the first map that has passed down to us which shows a southern (not South American) continent depicted on a map which utilises a latitudinal-longitudinal grid. Early maps like the Macrobian type (discussed in Chapter One) show a southern continent, but it is generic and figurative: depicted conceptually, without any particular form or characteristics, because the only information being conveyed concerned the general theory that southern hemispheric lands might exist. In early modern maps – starting with Rosselli – the southern continent unavoidably acquires magnitude, location, and geographical characteristics, in keeping with the rest of the map.
Figure 3g. Francesco Rosselli, world map, 1508, Greenwich version, hand-coloured. On this and the Zwickau versions the inscription in the southern continent appears to state ‘Antarcticus’. This is because in the process of hand colouring, the C. has been obscured from C. Antarticus; the label is in fact a reference to the Antarctic Circle. Image courtesy of the Greenwich Maritime Museum.

As for the inspiration for his southern landmass, Rosselli has left no helpful clues. It is possible that he interpreted the Soderini letter or another Vespucci letter in such a way that he believed a new southern continent had been discovered south of the Cape of Good Hope. This strikes me as unlikely, however. Rosselli already seems to represent these purported discoveries, depicting the South American coastline down to roughly 50ºS, and showing two long islands off that coast – a geography which makes a better fit with Vespucci’s claimed discoveries than a new southern continent unrealistically farther east with a northern coast inexplicably starting at 63ºS at its westernmost point. The problem is that with what we know of other voyages and their written accounts, there is no empirical lore which seems to fit Rosselli’s depiction of this southern land.

The coastline cannot be confirmed as the stuff of empirical lore, but what about non-empirical lore? In support of this possibility it is worth noting that the modest size of Rosselli’s southern land is more in keeping with the ancient quadripartite cosmography of multiple non-oikoumenical landmasses than if he had depicted a mainland sprawling right across the bottom of the map. However, not all is as it seems with this map.

The stunning Greenwich version I have been referencing is not faithful to the original print: it contains manuscript additions – meaning it has been altered by hand after being printed. Indeed, of the four extant copies of the 1508 Rosselli map, all contain different manuscript modifications to the original cartography. Thanks to the Holzheimer copy of the Rosselli map (Figure 3h), a version which has not been coloured, we know that the original print contained the northern border of a southern continent, but no southern border to complete the landmass. It was, then, in the first instance, a lot less suggestive than the bold image we see on the Greenwich version. Whoever coloured the Greenwich version added in a southern border to make a complete, insular landmass. The Zwickau version of the Rosselli map (Figure 3i) does likewise, except that the southern coast does not extend as far south as the Greenwich version.
Figure 3h. Francesco Rosselli, world map, 1508, Holzheimer copy. Image courtesy of Arthur Holzheimer who holds this map in his private collection.
Figure 3i. Francesco Rosselli, world map, 1508, Zwickau version, hand-coloured. This map is held by the Ratsschulbibliothek de Zwickau. Thanks to Chet van Duzer for providing this image.\footnote{For more information on this map see Chet Van Duzer, "A Newly Discovered Fourth Exemplar of Francesco Rosselli’s Oval Planisphere of C. 1508," \textit{Imago Mundi} 60, no. 2 (2008). Note that Rosselli’s 1508 map includes what appear to be the symbols for five cities populating his southern continent. There is no clue as to what inspired this. (———, "Cartographic Invention: The Southern Continent on Vatican Ms Urb. Lat. 274, Folios 73v-74r (C. 1530)," \textit{Imago Mundi} 59, no. 2 (2007), p. 207.) There also exists a marine chart made by Rosselli circa. 1508 which shows a southern landmass similar to that depicted in his world map (held by the National Maritime Museum, Greenwich).}
By depicting a completed continent, with manuscript southern shores, the Greenwich and Zwickau versions increase their value as both cartographic and aesthetic commodities – which they clearly are, given the expense of colouring was indulged. Indeed, as David Woodward notes, “color has been applied so thickly that it has obliterated the line work underneath, and in this sense has privileged decoration over information.” What we can conclude from this is that whatever Rosselli’s original intentions, the hand-colourer(s) of these maps thought it reasonable to turn this land into an insular southern continent, evidence that the geographical lore of Antipodes was a real influence on cartography and geography. A map found amidst Leonardo Da Vinci’s collection of papers, possessing no date, nor any traces of authorship, but thought to have been drawn around 1512-1516, reinforces this conclusion, as it shows an Antarctic continent so far south that it is hard to conceive it was intended to represent any empirical lore (Figure 3j). It is either the product of a furtive imagination, or, more likely, it taps into the geographical lore of Antipodes.

Figure 3j. Globe gores of a map contained in the collection of papers of Leonardo Da Vinci, circa. 1512-1516. This map is held in the Royal Collection, Windsor.

145 Scholars estimate this map was produced around 1512-16 based on the map’s geographical content. From the poor standard of the drawing it is believed it did not come from the hand of Da Vinci – though it could be a copy of a Da Vinci original. See R.H. Major, Memoir on a Mappemonde by Leonardo Da Vinci, Being the Earliest Map Hitherto Known Containing the Name of America (London: 1865); A.E. Nordenskiöld, Facsimile-Atlas to the Early History of Cartography with Reproductions of the Most Important Maps Printed in the Xv and Xvi Centuries, trans. Johan Adolf Ekelöf and Sir Clements Markham (New York: Dover Publications, 1973, original 1897), pp. 76-77.
As for the Holzheimer and Florence versions of the Rosselli map, they show a different type of manuscript modification, adding in not a southern coast, but extending the northern coast. The Holzheimer version has minor additions, but the Florence version (Figure 3k) extends the northerly coast of the continent east and west to the borders of the map. While the southern continent in the Florence Rosselli has no southern border, it still implies a complete continental geography because the manuscript additions make the southern continent circumfluent around the South Pole, and thus it is a land which necessarily has no southern border whilst nevertheless being insular. Assuming the manuscript additions are contemporaneous with the map, all of a sudden we have a fully formed instantiation of the southern continent – a southern continent that approximates to the size and magnitude of the imaginary land we will come to know in later years as Terra Australis. Of course, we cannot know exactly when the manuscript additions were made, but if they are anything like contemporaneous with the map then we have evidence of the currency in the first decade of the sixteenth century of the notion that a vast continent existed in the unexplored southern latitudes of the globe.
Figure 3k. Francesco Rosselli, world map, 1508, Florence version, lightly coloured. Manuscript additions to the southern continent’s eastern and western coasts. Image courtesy of the Biblioteca Nazionale Centrale di Firenze.
Schöner

If it is a vast landmass spanning the breadth of the southern hemisphere we are after, then the first printed map that we can verify to have depicted such a geography is Johannes Schöner’s seminal globe of 1515 (Figure 3l). My inclination is to describe Schöner’s southern landmass as unusual, given that it forms a broken ring of land encircling an Antarctic sea, rather than filling the entire space with land. On reflection, however, a better word would be unique, because as I have to keep reminding myself, the image of Terra Australis in its Mercatorian guise – the image most familiar to moderns – is the product of years of evolution of this concept. As best we know, Schöner had no specific cartographic predecessor to draw upon (though, of course, the concept of a southern continent in one form or another was already established) in constructing his prototypical southern ring continent.

There seems to be neither rhyme nor reason to the lottery of what documents survive through the centuries and what documents perish by way of neglect, abuse, misfortune, and the appetites of cockroaches. We can be thankful, then, that we have a comparatively rich store of documents from Schöner, including multiple maps and globes, and importantly for our present inquiry, the pamphlet Schöner produced to accompany his 1515 globe. In that pamphlet Schöner describes the southern continent which he labels ‘Brasiliae Regio’:

It is but a little distance from the Cape of Good Hope, which the Italians call Capo de Bona Speranza. The Portuguese have circumnavigated this region, and found a crossing there quite similar to the configuration of the land in Europe, which we inhabit, and situated between the east and the west.\(^{146}\)

---

Figure 3I. Reproduction by M. Jomard of globe gores of the southern hemisphere from Johannes Schöner’s globe of 1515. Jomard’s reproduction is most easily accessed through a facsimile reproduction in Nordenskiöld, Facsimile-Atlas to the Early History of Cartography (1973, original 1897), from which the image here was taken.

By comparing Schöner’s pamphlet with the 1514 German edition of a pamphlet titled *Copia der Newen Zeytung ausz Presillg Landt* (roughly equivalent to “Tidings Out of Brazil”), it is clear that Schöner relied on the German pamphlet for key tenets of data which formed the basis of his depiction of a southern continent. The following passage from that pamphlet inspired Schöner
to conclude that there existed a strait around the south of Brazil, leading into the oceans of eastern Asia:

When they came to the [latitude of the] Capo de Bona Speranza [Cape of Good Hope]…they found Brazil with a cape which is a point or place extending into the ocean. And they sailed around or passed this very cape and found that the same gulf lies as Europe does, with the side lying ponente levanter [west to east], that is, situated between sunrise or east and sunset or west.

Then they saw land on the other side as well when they had sailed a distance of sixty miles along the cape in the same manner as when one travels toward the east and passes the Strait of Gibraltar and sees the land of Berbers. And when they had come around the cape as stated and sailed or traveled northwestward toward us, there arose so great a storm and also such a wind that they were unable to sail or travel further. Hence they had to sail through tramontana, that is, northward or midnight, and back again to the other side and coast which is the land of Brazil.  

Based on the comments in this pamphlet indicating a strait had been found to the south of Brazil, Schöner considered he had empirical evidence of the existence of a southern landmass – given that the notion of a strait necessarily implies some form of neighbouring southern land. Interpreting it to be of continental magnitude, Schöner named this land Brasilie Regio on the basis of his misinterpretation of references in the pamphlet to “lower Brazil”.  

The question, then, is why did Schöner make this land so extensive – and so intricately detailed? It is fathomable that he could mistake the comments of the quoted pamphlet as saying there

---

147 John Parker, *Tidings out of Brazil*, trans. Mark Graubard (University of Minnesota Press, 1957), pp. 28-29. The report in this pamphlet of a strait being discovered is most likely an error of interpretation. It probably refers to a voyage into the Rio de la Plata, mistaken for a strait. Despite the excited claims of modern authors, there is no compelling reason to believe that a European voyage of discovery preceded Magellan in discovering the Straits of Magellan.

148 For example, the pamphlet states, “They do not eat one another as is the custom in lower Brazil”, which Schöner took to be a reference to a second – lower – Brazilian continent. In his later globe of 1520 Schöner converts the title of Brasilie Regio to Brasilia Inferior.
existed another landmass south of Brazil, but there is nothing that can be taken to indicate it is of considerable size. It seems that Schöner was taken by the notion that there existed a vast southern landmass, and once fortified in this belief by the apparent revelations of the German pamphlet, he took licence to extrapolate. This conclusion is encouraged by the considerable amount of geographical detail which is engraved onto Brasilie Regio in the form of coasts, lakes, and rivers. As Chet van Duzer has shown, Schöner was drawing upon ancient authorities when he populated his southern continent with a geography that fulfilled the role of wellspring to the Nile. What all this tells us is that Schöner was doing much more than indulging whim; he was, in fact, accommodating the geographical lore of the ages with the latest and best – even if erroneous – accounts of geographical discovery.

Conclusion

All traditions begin with a first – a first recipe, a first story, a first contest, or, here, a first map. So who was the first cartographer in the early modern period to depict the southern continent? We do not know for sure. Perhaps it was Contarini on the lost border of his 1506 map; perhaps it was Contarini’s engraver, Francesco Rosselli, with his own map of 1508; or perhaps it was a cosmographer whose maps have been lost to the ravages of time. Whoever it was, the inchoate cartographic tradition of depicting a southern continent took a firm step towards something concrete with the 1515 globe of Johannes Schöner. With Schöner we finally have a widely distributed cartographer of renown depicting a vast and detailed continent encompassing the Antarctic regions. There was no turning back: the idea of the Antipodes had crystallised into more than just a theory – it had become part of the matrix of geographies determining the cosmographic interpretation of discoveries. It helped make sense of the world.

149 Van Duzer, "The Southern Ring Continent," p. 117-121. Van Duzer’s article is the best point of reference for more detail on the geography of the southern continent as found on Schöner’s 1515 globe. Note that Van Duzer suggests that Schöner’s southern continent may be “a vestige of the Ptolemaic land bridge, the result of a displacement southward” (p. 124). This is possible, but there is little to support Van Duzer’s argument on this point. Also relevant to the discussion of Schöner’s globe is a derivative globe produced around 1515, known as the Green Globe. The geographic details of Schöner’s globe and the Green Globe are remarkably similar. See ———, “The Southern Ring Continent,” pp. 126-127; Monique Pelletier, “Le Globe Vert Et L’oeuvre Cosmographique Du Gymnase Vosgien,” Bulletin du Comite Francais de Cartographie 163 (2000). Following Schöner, a tradition of representation of a southern ring continent developed in the sixteenth century. As the depiction of a southern continent as a ring of land around the South Pole was somewhat marginal to cartography and the evolution of the popular conception of Terra Australis, I shall not further discuss the relevant maps within this tradition, excepting a few words in Chapter Four on a peculiar map held in the Vatican Library. This is no particular loss, as Van Duzer has already done an excellent job of this in his article, cited.
What makes the ongoing crystallisation and evolution of the idea of a southern continent so fascinating is the way exploration and discovery enhanced the concept of southern lands rather than damaging its currency. Explorers framed their voyages and reported their discoveries – and cosmographers interpreted the explorers’ reports – through the preconceptions of geographical lore. To return to the quote of J. Wreford Watson with which I began this chapter:

where men had the choice they preferred to go on believing in their old illusions. Preconceived notions of what they might find, led them to think they had found what they wanted. So often men only see in the world, the world they want to see. Perhaps nowhere is this more true than in the world of maps. 

Thus, the Rio de la Plata becomes a strait leading into the as yet un-named (and unknown) Pacific. The reported sighting of land in the South Atlantic becomes confirmation of the existence of a southern continent. It seems counter-intuitive, but we in fact observe here an epistemological quirk whereby the increase of geographical knowledge actually begets the growth of cosmographical illusions. Rather than correcting misconceptions, new empirical information is often interpreted to fit with pre-existing erroneous ideas, thus lending those illusions the epistemological trump card of ontology: it is no longer just an idea – discovery has proved the existence of this land! We see what we believe, which normally means we see in some form or another what it is we want to see.

And so the idea of southern lands continued to evolve in the manner of all robust traditions – by incorporating new knowledge where knowledge could be appropriated, and conceding to incompatible knowledge to avoid contradiction. That has been the great strength of the cosmographic concept of a southern continent: it is a theoretical entity well-placed to incorporate and appropriate empirical information. In that sense, the map was the ultimate palimpsest, and the southern continent the ultimate meme. But as capable as savants proved to

be when it came to reconciling a few outlying geographies with the idea of a southern continent, in the approaching decades of the sixteenth century that trickle of data relating to unknown lands amidst the southern hemisphere was to become a torrent. How cosmographers and cartographers were able to reconcile new empirical data with the ancient notion of Antipodes would determine the trajectory of the southern continent.
Chapter Four

Terra Australis Takes Shape

Textbook tradition dictates that a discussion of exploration begin with a list of those forces and events that drew some Europeans out across the Atlantic and into another already settled world. But as the polar explorer Apsley Cherry-Garrard reminds us, exploration is the physical expression of a series of visions about the shape of things imagined but not yet seen. Behind every voyage, whether by land or sea, were expectations born of complex and often elusive dreams.

The dreams that drove explorers sprang to life from journeys made before any expedition ever left home. Those journeys were travels into the country of the mind. Explorers studied themselves and their own worlds before setting out for places distant and remote.

-- James P. Ronda

The phrase ‘voyage of discovery’ suggests a bold venture into the unknown, questing after knowledge where none exists. Yet the reality of many of history’s most important voyages of discovery is that they have been undertaken on the basis of steadfast belief in one or more geographical illusions. Indeed, for as long as history has been recorded, journeying into the complete unknown has been a subject of paralysing fear. It is why it took Europeans so long to discover the extent of Africa: what lay beyond the horizon was almost completely unknown, but-for the possibility of monsters, boiling oceans, and a miserable death lost at sea. Contrast this with Columbus who in one fell swoop crossed the Atlantic to discover the Americas – a feat far more remarkable than the gradual unveiling of the African littoral because had Columbus not discovered land where he did, he would have found himself stranded in a seemingly endless stretch of Ocean that took in the better part of 150º of longitude. But if these were the possible outcomes of a voyage into the unknown, why would Columbus have taken the risk? What made him special? The answer is simple: as far as Columbus was concerned, he was not sailing into the unknown. Columbus was thoroughly convinced that he was embarking upon a comparatively short ocean-crossing to the lands of eastern Asia. Thus, it was not that Columbus was uniquely brave or bold; it was that he was lucky enough to subscribe to a geographical illusion which happened to intersect with geographical realities. As Clark Firestone memorably wrote, “The gains of fable are writ large in the history of modern exploration. Error was the

---

guiding star of discovery. A vain fancy was the most precious cargo of the caravels, as it was the keenest weapon of the conquistadors.”

Examples of significant expeditions pursuing geographical preconceptions are too numerous to list – just consider the dozens of expeditions embarked in pursuit of the North-West Passage, the Lands of Prester John, or the Mountains of the Moon and the well-spring of the Nile. These geographical preconceptions inspired explorers to journey into the unknown – but, then, that is the point: through the accretions of lore, no explorer ever ventures into a geographical vacuum. The geographical ‘unknown’, so-called, is populated by myth, rumour, misapprehension, conjecture, and fancy. The unknown is never a blank slate.

And so, having finally arrived at the juncture where illusion and reality meet, in this and the following chapter we shall encounter some of the key moments where empirical lore – both new discoveries and established knowledge – was appropriated to fashion from the Antipodes a fully realised geographical entity. This is a turning point in this story, for it is in the acquisition of empiricism that the southern continent acquires the imprimatur of reality. No longer a mere postulate, the Antipodes becomes Terra Australis: a southern continent known to exist, but awaiting the endeavours of intrepid explorers to be fully discovered.

**The Straits of Magellan**

Ferdinand Magellan set sail from Spain in August 1519, convinced that he would find a passage in the southern latitudes connecting the Atlantic with the provinces of Asia. Like Columbus, Magellan was willing to pursue an extremely dangerous voyage of discovery because he believed he knew what lay beyond the boundaries of recognised knowledge. As we lack either a personal or official journal for his voyage, the exact evolution of Magellan’s thinking throughout the various stages of the expedition remain mostly opaque to us. But what we do have are the insights into Magellan’s thinking recorded in the *relation* (narrative) written by

---

Antonio Pigafetta, one of but a handful of men who survived the expedition’s gruelling three years at sea.

Pigafetta reveals to us that Magellan was willing to go to great lengths to find a sub-American passage; had a strait not been found at around 53ºS, it was Magellan’s conviction to push perilously farther south into wild and frigid climes:

    Had we not discovered that strait, the captain-general had determined to go as far as seventy-five degrees toward the Antarctic Pole, where in that latitude, during the summer season, there is no night, or if there is any night it is but short, and so in the winter with the day.\(^{153}\)

Consulting a world map or globe immediately demonstrates the folly of this: at 75ºS Magellan would find himself beyond the Antarctic Convergence in unbearably cold and wild seas, and, ultimately, at 75ºS, at the Antarctic mainland itself.\(^{154}\) The plan was madness, and his crew would not have followed him there. Luckily, they did not have to.

In late October 1519 Magellan’s doggedness was rewarded with one of the most important discoveries in the history of exploration, as recounted by Pigafetta:

    Upon reaching fifty-two degrees towards the Antarctic Pole, we discovered most miraculously a strait on the day of the [Feast of the] Eleven Thousand Virgins, whose cape we named the Cape of the Eleven Thousand Virgins [Cape Virgenes]. That strait is 110 leagues or 440 miles long, and it is one-half league broad, more or less, and it leads

\(^{153}\) Antonio Pigafetta, *The First Voyage around the World, 1519-22: An Account of Magellan’s Expedition*, ed. Theodore J. Cachey (Toronto: University of Toronto Press, 2007), p. 20. Pigafetta also makes an interesting statement indicating he personally did not believe there was a southern continent, or if there was, it was restricted to latitudes beyond 52ºS (p. 25): “When we left that strait, if we had sailed continuously westward we would have circumnavigated the world without finding other land than the Cape of Eleven Thousand Virgins, which is a cape of that straight on the Ocean Sea, straight east-west from Cape Deseado on the Pacific Sea, and both of those capes lie in a latitude of exactly fifty-two degrees toward the Antarctic Pole.”

\(^{154}\) The Antarctic Convergence is where the near-freezing surface waters of the Antarctic and the warmer waters of the sub-Antarctic meet; once this threshold has been met and crossed mariners can expect a dramatic drop in already frigid temperatures within the space of a few kilometres, along with associated meteorological conditions.
to another sea called the Pacific Sea, and is surrounded by very lofty mountains laden with snow. There it was impossible to find bottom [for anchoring], and [it was necessary to fasten] the moorings on land twenty-five or thirty fathoms away, and if it had not been for the captain-general, we would not have found that strait, for we all thought and said that it was closed on all sides.\textsuperscript{155}

Magellan had been successful in his quest for a south-west passage, geographical reality fortuitously intersecting with his geographical preconceptions. But this leaves one question. What was the basis for Magellan’s unwavering conviction that he would find a passage rounding the tip of South America? But a map, of course. Pigafetta explains that Magellan “knew that he had to make his journey by means of a well-hidden strait, which he had seen depicted on a map in the treasury of the king of Portugal, which was made by that excellent man, Martin of Bohemia”\textsuperscript{156}.

If we take these comments at face value, this constitutes evidence that Magellan was preceded by some other explorer whose voyage was very nearly kept secret. But rarely is historiography so straightforward. If you look at Martin Behaim’s globe of 1492 (Figure 4a), you will see the problem immediately: neither on this map, nor on any other map which we know came from his hand, does Behaim depict South America as a continent; hence, he could not have depicted a sub-American strait. And yet Pigafetta has always been considered a relatively reliable source. So where does this leave us?

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{155}] Pigafetta, \textit{The First Voyage around the World, 1519-22: An Account of Magellan’s Expedition}, p. 20.
\item[\textsuperscript{156}] Ibid., p. 18. Martin of Bohemia refers to Martin Behaim.
\end{itemize}
\end{footnotesize}
Peter Dickson has argued that, in the years preceding Magellan’s voyage, explorers – Dickson suggests the Portuguese – had already rounded the tip of South America and plied the waters of the Pacific Ocean, and it is this knowledge which Magellan was drawing upon. While there is no way of ruling out this hypothesis of pre-Magellanic discovery of the Straits, it is not particularly useful to scholarship, as there is only weak circumstantial evidence to support the argument (the fact that explorers had visited Brazil – and, so the argument goes, why would they stop there? – and the existence of maps showing an insular South America, like Schöner’s globe of 1515 or Waldseemüller’s globe gores of 1507; it is fair to say this sort of circumstantial evidence is no evidence at all).

Against this we may contrast the arguments of George Nunn. Nunn points out that in Magellan’s time it was understood that eastern Asia included a south-east peninsula extending,
at its farthest, to the Tropic of Capricorn. If Magellan also believed – as many did at the time – that South America was connected as a peninsula to the Asian mainland, then it is conceivable that Magellan conflated and confused these concepts, in doing so mistaking Behaim’s south-east Asian peninsula for America. If so, it would explain why Magellan read Behaim as indicating that a strait was present around the southern tip of the Americas – really South East Asia. Nunn explains:

it is permissible to assume that the Behaim map Magellan saw was substantially the same map as that represented by the Behaim globe of 1492, showing a strait, but not one that had been discovered either before Columbus’ voyage or after… What Magellan saw was simply the sea route from the Atlantic Ocean, around Behaim’s southeast peninsula of Asia, into the Indian Ocean. This would be in accord with the view gradually prevailing since the fourth voyage of Columbus and in accord with the ancient views of Aristotle, Seneca, and the Ymago Mundi of Pierre D’Ailly.

There is much to commend Nunn’s treatise in which this argument is articulated. However, the crucial issue here is whether or not Pigafetta was correct in stating that Magellan had relied on a map produced by Martin Behaim, a state of affairs for which we possess no corroborating evidence. Most scholars concede that there are no reasonable grounds for doubting Pigafetta’s recollection that Magellan was under the impression that a map in his possession depicted the discovery of a strait around the south of the Americas, and it was that strait which Magellan then sought out; it is the question of the provenance of that map where some scholars express doubt. For example, the respected historian of the Pacific, Oskar Spate, suggests that contrary to Pigafetta’s stipulation, the map in question was probably one of Schöner’s, which also shows a strait south of the Americas.

---

158 The Ptolemaic notion of the Indian Ocean being enclosed by land stretching from eastern Asia to southern Africa had been thoroughly disproved by this stage.

159 George Nunn, The Columbus and Magellan Concepts of South American Geography (Glenside: 1932), p. 44.

Ultimately, the subject of why Magellan believed there was a passage round the south of the Americas is intractable. What can be said is that Magellan was pursuing this passage as a result of his subscription to one or more items of geographical lore – lore which at that stage lacked the substantiation of empirical data. Magellan’s remarkable voyage changed all this. Not only did he prove that there was a south-west passage into the Pacific, he provided empirical data reconcilable with the southern continent. Had Magellan explored the higher latitudes and rounded the Americas in the open waters south of the island of Tierra del Fuego, it would have been a blow to the theory of a southern continent. Expectation would have been confounded by evidence, and belief in the southern continent may have weakened – though more than likely the concept would have limped on, as however far south an explorer went, the continent could be imagined just beyond the horizon. But it was not open water that Magellan discovered, it was a strait: a sea-way flanked on the northern side by the American mainland, and on the southern side by snow-capped mountains amidst a landmass of indeterminate extent. For the theory of the southern continent this was a crucial and providential article of geographical data. Land existed, just as Schöner had drawn on his maps and cosmographers had theorised, south of the recently discovered Americas. It was exactly where land should be if the theory of a southern continent were true. For curious savants this presented powerful corroboration of the theory of a southern continent – it was the tipping point where a compelling cosmographic theory about southern lands appeared to crystallise into geographical reality.

Of course, the existence of one piece of land does not prove the existence of a huge continent. And, yet, that is exactly how the discovery of the Straits of Magellan was taken in the sixteenth century. To understand this, we need to remember that while cosmography was characterised by conjecture, as a discipline it carried the authority of what we moderns would call a science. It meant that well received cosmographical theories like the North-West Passage and the southern continent were presented and received as geographical entities that probably – not just possibly – existed. Faith was already placed in the existence of these geographies before the opportunities arose to test or corroborate the underlying conjectures. All that remained was for empirical confirmation of their presence. In the case of the southern continent, this came with
the discovery of a southern landmass contiguous with the Americas. It was such a profound intersection between prediction and reality that it was considered spectacular confirmation of the science of cosmography – cosmography teaching that if a separate landmass existed at these latitudes, then it was in fact the tip of a sprawling southern continent. Consider the process at play here as sketched by John Allen:

However honest, objective, and accurate the reports of exploration, imagination modifies the accounts of discovery. Explorers may present a partial picture of an area by describing only what they have actually witnessed. Those who interpret their reports may have difficulty in adjusting the size of observed features to the scale of pre-exploratory terrae incognitae…What exploration makes known may expand in the imagination to encompass what remains unknown.\textsuperscript{161}

So having seemingly identified one piece of the continent through the discovery of Tierra del Fuego, it was as if the existence of the general cosmography of the southern continent had been confirmed. It heralded the ensuing transition of the southern continent from cosmographical idea to geographical reality.

This state of play is best illustrated by the maps produced in the wake of Magellan’s voyage. Amongst the first wave of printed maps incorporating the new data was Franciscus Monachus’s world map of 1527 (Figure 4b). The most arresting element of the map is the southern section between Africa and South America where the southern continent is tentatively delineated by means of strait lines. By sectioning off this enormous grid of space Monachus is asserting that it is within this region that the southern continent exists, but that the necessary information to sketch the contours of its coast is yet to be attained. This message is conveyed visually as well as through the inscription annotating this part of the map, which reads, “Hec pars orbis nobis navigationibus detecta nundum existit”: “This part of the world, not yet discovered by

\textsuperscript{161} Allen, "Lands of Myth", pp. 56-57.
If yet undiscovered, how does Monachus know it exists? The answer is in the image. Flanking the strait lines are the familiar irregularities of a coastline. In particular, the southern continent is depicted as the land to the south of the strait discovered by Magellan, clearly communicated by the fact the coastline is here contiguous with South America. It is that one piece of information which allowed Monachus to extrapolate an entire continent, occupying up to 50° of latitude and 360° of longitude. Thus, though Monachus adopts a cautious cartographical approach to depicting the unknown regions, the presence of that single item of empirical data transforms the southern continent from cosmographical fancy to geographical entity. Indeed, that single piece of empirical data was capable of standing in for the entire southern continent – it was a proxy for the rest of the southern continent’s geography then unavailable to Europeans.

Figure 4b. Franciscus Monachus, map of the world in *De Orbis Situ, circa.* 1527. For decades after Magellan’s voyage many cartographers showed the Americas connected to Asia – entirely assimilating North America into an Asian peninsula. Image courtesy of the British Library.

---

162 Thanks to John Moorehead for assistance with this translation. Rodney Shirley translates the passage as, “This part of the world not yet discovered by navigators.” (Rodney W. Shirley, *The Mapping of the World: Early Printed World Maps, 1472-1700* (London: Holland Press, 1983), p. 61.) Alfred Hiatt translates it as, “This part of the world revealed to us by voyages is not yet manifest.” (Hiatt, *Terra Incognita: Mapping the Antipodes before 1600*, p. 216.)
Consider the world map drawn by Battista Agnese for his atlas of 1544 (Figure 4c). What strikes me in the first instance is that this map does not depict a southern continent. Like Monachus’s, it is a cautious mapping, and so excludes from representation cosmographical speculation regarding expected and hoped-for coasts. Indeed, at every turn Agnese’s map reinforces the message that it is only concerned with real places and not conjectural geography; note the presence of a line tracing the route to and from the Moluccas, annotated, “In order to go to the Moluccas…” and “In order to return from the Moluccas…” Magellan’s expedition is not mentioned by name, but the route traced is a representation of Magellan’s circumnavigation of the world. The message is clear: this map is the product of geographical data sourced from voyages of discovery.

So what, then, of the southern continent? Consider the cumulative effect of the various elements of Agnese’s map on his readers. First, the map suggests to readers that it is comprised of empirical data alone. Second, the map almost glories in this empirical approach, having chosen a map projection which makes prominent a huge swathe of blank space in the unexplored regions of the southern hemisphere. Third, the only allusion to the possibility of a southern continent is the unbounded coast beneath the tip of South America. The result, of course, is that the reader, already aware of the popular theory of a southern continent, is led to imagine a massive landmass occupying the southern hemisphere of Agnese’s map – beginning with the tip of the continent known as Tierra del Fuego. In this respect, Agnese’s world map is all the more fascinating once we juxtapose it with the other maps illustrating his 1544 atlas. In particular, compare the region around the Straits of Magellan as seen in a detail from one of Agnese’s portolan maps centred on the Atlantic (Figure 4d), with a detail of the same region from his world map (Figure 4e).

163 Note that the map also includes a line tracing the expedition of Hernán Cortés from Spain to Central America, continuing across the peninsula then down the western coast of South America.

164 Indeed, the rest of the maps in Agnese’s atlas are portolans – a cartographic format upon which conjectural cartographies were less commonly indulged.
Figure 4c. Battista Agnese, world map, 1544. This map is part of Battista Agnese’s atlas dedicated to Hieronymus Ruffault, Abbot of St. Vaast, *circa* 1544. Image courtesy of the Library of Congress.
Figure 4d. Battista Agnese, portolan map centred on the Atlantic, 1544, detail of South America and Tierra del Fuego. This map is part of Battista Agnese’s atlas dedicated to Hieronymus Ruffault, Abbot of St. Vaast, circa 1544. Image courtesy of the Library of Congress.

Figure 4e. Battista Agnese, world map, 1544, detail of South America and Tierra del Fuego (see Figure 4c for complete map). Note that Agnese imaginatively extends the coastline of Tierra del Fuego, while just north the coast of what will become known as Chile is left incomplete. Image courtesy of the Library of Congress.

As was customary for portolans, Agnese’s Atlantic map (Figure 4d) incorporated very specific known coastlines, labelled with capes and points. Thus, his depiction of Tierra del Fuego was of limited extent. The austerity of this portolan shows us that the asceticism of Agnese’s world map (Figure 4e) is something of an illusion. The world map may only show a very limited coastline of Tierra del Fuego, but what is shown goes well beyond the limits of empirical knowledge, extending the land’s borders south. In doing so Agnese proves to the reader that his world map is a product of empiricism, while at the same time suggesting something more than the incomplete coastline depicted.\(^{165}\) It is left to the reader to imagine the full extent of a southern continent, but there is no doubt such a geography is implied.

Once Tierra del Fuego had been appropriated by cosmographers and cartographers as a part of the southern continent, the notion of a sprawling southern landmass lying just beneath the tip of

South America became a fundamental tenet of cosmography. Even the trump card of empirical data proving that Tierra del Fuego was not part of a larger continental landmass could not extinguish this notion. In 1578 the English privateer Francis Drake attempted passage through the Straits of Magellan. In bad weather his ship was blown south of the Straits, where it was reported that Drake saw nothing but open waters. Drake was eventually able to recover his ground and pass through the Straits, but what he had seen when thrown off course was proof that the popular identification of Tierra del Fuego with the southern continent was erroneous.

Francis Fletcher accompanied Drake on this expedition, and took the apparent discovery of Tierra del Fuego’s insularity as a riposte to the arrogance of cosmographers and geographers. He jousted:

> It hath beene a dreame through many ages that these Ilands [near Cape Horn] have been a maine, and that it hath beene terra incognita, wherein many strange monsters lived. Indeed, it might truly before this time be called incognita, for howsoever the mappes and generall descriptions of cosmographers, either upon the deceivable reports of other men, or the deceitfull imaginations of themselves (supposing never herein to be corrected), have set it downe, yet it is true, that before this time, it was never discovered or certainly knowne by any traveller that wee have heard of.\textsuperscript{166}

Be it from ignorance or intransigence, many cosmographers and cartographers ignored this revelation, continuing to present Tierra del Fuego as a part of Terra Australis. A minority, however, appropriated the information and duly rendered Tierra del Fuego into an island, as can be observed, for instance, on the 1595 map of Jodocus Hondius (Figure 4f).\textsuperscript{167}

\textsuperscript{166} Francis Drake, Francis Fletcher, et al., \textit{The World Encompassed by Sir Francis Drake, Being his next Voyage to that to Nombre de Dios, Collated with an Unpublished Manuscript of Francis Fletcher, Chaplain to the Expedition}, (New York: Hakluyt Society, 1963), pp. 88-90. Ironically, one of Drake’s purported goals of this voyage was to discover Terra Australis, which he probably never had any intention of attempting, even if he had not by accident shown Tierra del Fuego to be an island and not part of a southern continent. (Colin Jack-Hinton, \textit{The Search for the Islands of Solomon, 1567-1838} (Oxford: Clarendon Press, 1969), p. 109.)

Figure 4f. Jodocus Hondius, *Vera Totius Expeditionis Nauticae*, 1595, detail. Departing from his peers, Hondius depicts Tierra del Fuego as an island, separated at some distance from Terra Australis. Image courtesy of the Library of Congress.

Yet, cosmography being the robust art of speculation that it was, where one geography disappointed another delivered. The voyage of Jacob le Maire and Willem Schouten in 1616 conclusively proved that there was a sea passage south of Tierra del Fuego. But le Maire and Schouten also discovered an island just east of Cape Horn, which the explorers named Staten Island. Cartographers promptly appropriated this new-found land, rendering it a part of the southern continent, in doing so picking up almost exactly where Tierra del Fuego had left off. So compelling was the cosmographical notion of continental land stemming from a main somewhere near the tip of South America, that when in 1642 Abel Tasman discovered New Zealand he decided, in his words, to give “to this land the name of Staten Landt…since we deemed it quite possible that this land is part of the great Staten Landt” – some six thousand
miles distant – “and we trust that this is the mainland coast of the unknown South-land.” But I am getting well ahead of myself. For the time being – in the immediate post-Magellanic years – cartographers were yet to settle on an image of the southern continent due to the scarcity of empirical data available to flesh out the contours of its coastline. In the meantime – and in lieu of relevant empirical data – geographical lore of a more dubious nature sometimes met cartographers’ and cosmographers’ appetites for knowledge.

Regio Patalis

At various stages ancient knowledge, rumours, legends and reports from medieval travellers would all be co-opted in very specific ways to flesh out the evolving form of the southern continent. One of the most enduring of these forms was a peninsula pushing deep into the Pacific Ocean, labelled ‘Regio Patalis’. Alfred Hiatt traces ‘Regio Patalis’ from its status in Pliny’s time as a region in the Far East said to fall below the tropic of Cancer, to Francis Bacon and thence Pierre d’Ailly who cite it as a region on the southern coast of India, extending as far south as the Tropic of Capricorn. A depiction of the latter conception of Regio Patalis – albeit in an unusually crude form – can be seen in the medieval-style map of Antoine de La Sale (Figure 4g).

---


As better knowledge of the Asian regions filtered back through merchants and explorers, it became clear that no Indian peninsula extended as far south as the Tropic of Capricorn. However, Magellan’s discovery of a passage south of the Americas flanked by land extending into the unknown south seemed to confirm the cosmography advanced by Johannes Schöner in 1515. Thus, when Schöner came to revise his cartography in the 1520s, he chose to appropriate the classical land of Regio Patalis which had become redundant as a northern hemispheric
geography that protruded into the southern hemisphere. He was able to relocate it in the same general region about the Tropic of Capricorn as it had earlier been associated, except the peninsula bearing its name now projected north from a southern continent rather than south from a northern continent. Following Schöner, Oronce Finé reproduced this feature on his enormously influential map of 1531 (Figure 4h), popularising to a generation of cartographers a geography which had its origins at least as early as the first century AD with Pliny’s *Naturalis Historia*.

In doing so, both Schöner and Finé chose to ornament their depictions of a southern continent with a geography that had simply been lifted from cosmographical discourse and redeployed not where logic necessarily dictated that this geography must exist, but where it was most valuable to the map. What these cartographers were interested in was geographical verisimilitude: the semblance of authenticity. Savants knew (or thought they knew) that Terra Australis was known only by a single region of that continent in the form of the northern shores of Tierra del Fuego; but they also had faith in the cosmographical theory which postulated a southern continent. When a cartographer depicted a place not known by discovery, but nevertheless believed to exist, they played to the knowledge and expectations of their audience. Both Schöner’s and Finé’s southern continent, labelled ‘Terra Australis’, possessed a detailed coastline, mountains and rivers, and labels naming regions. Through the appropriation of Regio Patalis they appealed to the wisdom of the ancients, burnishing the map with the quality of diachronic learning, without necessarily saying anything about the chorographic reality of Terra Australis. Thus presented, the southern continent possessed the veneer of reality without pretending to reality itself.

---

170 A similar act of toponymic appropriation is perpetrated on Jean Mallard’s world map, *circa* 1540, where his southern continent south of Asia is inscribed with the name ‘La Catigare’, which can be traced back to the Ptolemaic representation of the land of ‘Cattigara’ as the far eastern peninsula of Asia.

171 I thank Robert King for sharing his unpublished research on the subject of Regio Patalis.
Figure 4h. Oronce Finé, *Nova, et Integra Universi Orbis Descriptio*, 1531. Image courtesy of the Library of Congress.
Thus, the value in taking the concept of Regio Patalis and transferring it to the southern continent was that it added to the verisimilitude and all round potency of this geographical construct. However, it is worth pondering whether or not Finé and Schöner before him had intended to intentionally deceive their audience into thinking Regio Patalis – and likewise the translocated region of Brasielie Regio (shifted from its original position on Schöner’s 1515 globe south of America to south of Java on Finé’s 1531 map) – were geographies known by discovery (that is, places known through the exploits of explorers like Magellan or Columbus). It is possible, but unlikely. Had Schöner or Finé taken their audience for fools they would have found they were not as uncritical as modern writers sometimes assume. But, of course, Schöner and Finé both knew this, thus their inscriptions stating: “Terra Australis Re center inventa sed nondum plene cognita.” Translated, this means, ‘Terra Australis, recently discovered but not yet fully known.’ This statement, repeated by innumerable cartographers in the following centuries, is itself pregnant with meaning.

When cartographers and geographers conveyed the message, ‘Terra Australis…not yet fully known’, or, ‘Terra Australis…not yet discovered,’ they were effectively saying: ‘It is only a matter of time before we acquire empirical data confirming the existence of this southern continent.’ It is an expression of confidence not merely in the southern latitudes eventually being explored, but in an actual geography, not yet proved by exploration to exist, being explored. The paradox was not lost on Joseph Hall, who in his 1609 novel, *The Discovery of a New World*, wryly commented:

> It hath ever offended mee to looke upon the Geographicall mapps, and find this: *Terra Australis, nondum Cognita.* The unknowne Southerne Continent. What good spirit but would greeve at this? If they know it for a Continent, and for a Southerne Continent, why then doe they call it unknowne? But if it bee unknowne; why doe all the Geographers describe it after one forme and site? Idle men that they are, that
can say, this it is, and yet wee know it not: How long shall wee continue to bee ignorant in that which wee professe to have knowledg of?"\(^{172}\)

The answer to Hall’s question is that they did, in fact, have knowledge, just not necessarily empirical knowledge. Because the southern continent existed as a cosmographical entity largely by means of non-empirical lore (cosmographical conjecture), its being discovered presented not as an ontological issue, merely a temporal one. That is why Lancelot Voisin de la Popelinière, in encouraging his King and countrymen to seek out and settle the southern continent, could write: “Behold a world which can be filled by all manner of good and most excellent things. All that is required is to discover it.”\(^{173}\)

For the time being, though, the renderings of imaginative cartographers would have to suffice. In the wake of Schöner’s and then Oronce Finé’s maps, most cartographers of the following generation formed their depictions of the southern continent around three geographical features which became standard to cartography, namely: a coastline contiguous with South America (based on Magellan’s discoveries), a region jutting into the Pacific (Regio Patalis), and another region stretching to just south of Java (Finé’s Brasilie Regio which originated with Schöner).

\textbf{Cartographic Dead-Ends}

Between 1531 and 1569 – representing the years between Oronce Finé’s and Gerhard Mercator’s seminal world maps – the southern continent was depicted in many and varied forms, often, but not always, beginning from the three standard features outlined above. Cartographers had enormous freedom in how they represented the southern continent – if they represented it at all. At their disposal was a vast expanse of unexplored space in the southern latitudes, with Tierra del Fuego the only aspect of the southern continent’s geography fixed and settled. From that point they could be as austere or as elaborate in their depictions as they desired. To get a flavour for this variation, it is worthwhile pausing to consider a few of the


more unusual and interesting variations on the theme of a southern continent produced during this period.

I will start with one of the more peculiar early modern renderings of the southern continent, as found on a map constructed around 1530, now held in the Vatican Library (Figure 4i). In this instantiation the southern continent is in the form of a ring-continent (of which type Schöner’s 1515 globe is the most famous exemplar), but unlike earlier cartographers’ versions of a southern ring-continent, this landmass has no inlet to the sea at the South Pole. To my mind, it is one of the strangest and – despite the proliferation of place names and geographical features – least verisimilitudinous imaginings of the southern continent throughout that geography’s long life in maps. For the most part, cartographers tended to imagine the unknown after the known, whereas this map is especially visually striking by dint of the way in which the southern continent departs from both existing representations of a southern continent and from the familiar forms of established lands. It makes the Vatican MS a curiosity; even though readers knew that the southern continent was nondum cognita, the illusion or promise of reality was often as enticing as reality itself. Imaginative geographies are characteristically marked by analogy, whereas this map presents a southern geography whose form delineates it from the empirical geographies otherwise populating the map. Put simply, the southern continent just does not look real; its appearance denotes it as the imaginative geography it is.

Figure 4i. Anonymous world map, circa 1530, part of the collection of the Biblioteca Apostolica Vaticana, MS Urb. Lat. 274, ff 73v-74r. Image courtesy of the Biblioteca Apostolica Vaticana.
A tradition of maps which are far more verisimilitudinous but which nevertheless comprise an evolutionary dead-end in the story of the southern continent are the Dieppe maps, produced around the middle of the sixteenth century by the French school of cartographers based around Dieppe. Common to these maps is the depiction of a large landmass just south of Java that the Dieppe cartographers labelled Jave la Grande. On some maps, like the early exemplar of Jean Rotz (1542, see Figure 4j), Jave la Grande stands as an incomplete geography, with northern, eastern and western borders, but no border to the south. Other versions represent Jave la Grande as a projection of a larger southern continent which sprawls across the Antarctic regions. An example of the latter is Pierre Desceliers’ 1550 world map, where ‘Jave la Grande’ is joined to ‘Terre Australle’ (Figure 4k).

These maps occupy a bizarre niche in the story of the southern continent. Particular to the Dieppe cartographers, Jave la Grande appears in the 1540s with little in the way of precedent, and then, just as abruptly as it appeared, Jave la Grande disappears in the late 1560s, having had almost no influence on cartographers outside Dieppe, and little or no influence on the ideas of geographers, explorers or others interested in geography and cosmography. It is ironic, then, that the Dieppe maps have had such a large impact on modern scholarship. Beginning in the late eighteenth century when Alexander Dalrymple unearthed the Harleian map (circa. 1540s) and declared that it was a depiction of the east coast of Australia, a succession of authors right up to the present day have pursued the case that the Dieppe maps depict Australia.\(^{175}\) The necessary implication of this thesis is that, one way or another, Europeans knew of Australia before the Dutch discovery of the northern Australian coast in 1606 – most proponents believing that the maps are based on Portuguese data (given the place-names on Jave la Grande are derived from Portuguese words), though the French and the Spanish have also been suggested.

Figure 4j. Jean Rotz, in the *Boke of Idography*, 1542. Image courtesy of the British Library.
Figure 4k. Pierre Desceliers, world map, 1550. South is to the top of the map. Image courtesy of the British Library.
The evidence for the thesis that the Dieppe maps depict Australia is flimsy at best and lunatic at worst. My suspicion is that some proponents of this thesis have seen the Rotz map or some other depiction of Jave la Grande and been taken by the coextensivity of the land with Australia, and the apparent similarity of select features with Australia. Convinced that Jave la Grande must be Australia, they then set about constructing an argument to support this visceral conclusion, normally involving the interpretation – or bastardisation – of place-names, and the rearranging of the coastline of Jave la Grande so that it looks more like Australia.\textsuperscript{176} I have elsewhere referred to this practice as “the cartographic equivalent of playing leggo.”\textsuperscript{177} More than any other scholar, W.A.R. Richardson has assiduously demolished these arguments, and I commend readers to his impressive catalogue of books and articles on the subject written over the course of twenty-five years for more information.\textsuperscript{178} But this still leaves one problem.

While Jave la Grande is not Australia, it is nevertheless the product of reconnaissance. That is to say, the geography of Jave la Grande found on the Dieppe maps is almost certainly based on empirical geographical data. When depicting imaginary or unfamiliar coastlines, cartographers had at their disposal a range of conventions which made it clear whether the geography was conjectural or based on empirical data: through the repetition of geographical features or lack of variance in a coastline, the way a coast was shaded or left incomplete, the lack of place-names or novelty of place-names, descriptive annotations and labels, and the presence of obscuring cartouches and arbitrary embellishments. In this regard, we may note that Jave la Grande possesses all the conventions of an empirical geography. Take the version of Jave la Grande on Desceliers’ world map, a detail of which I include as Figure 4l. We find in the Jave la Grande section of this geography (the right half of Figure 4l) a coastline of great variation, marked with

\textsuperscript{176} See, for example, Lawrence Fitzgerald, \textit{Java La Grande: The Portuguese Discovery of Australia} (Hobart: The Publishers Pty Ltd, 1984); Kenneth McIntyre, \textit{The Secret Discovery of Australia: Portuguese Ventures 200 Years before Captain Cook} (Medindie: Souvenir Press, 1977); Peter Trickett, \textit{Beyond Capricorn: How Portuguese Adventurers Secretly Discovered and Mapped Australia and New Zealand 250 Years before Captain Cook} (Adelaide: East Street Publications, 2007). Note, comparisons of modern charts of Australia with the Dieppe maps show that the apparent coextensivity and resemblance between Jave la Grande and Australia is illusory. For example, Richardson takes the image of Jave la Grande from the Harleian map and overlays it on a modern chart of the region. Jave la Grande suddenly becomes much less compelling. (Richardson, \textit{Was Australia Charted before 1606? The Java La Grande Inscriptions}, p. 3.)

\textsuperscript{177} Avan Stallard, “‘Better Than the Da Vinci Code’: The Theological Edifice That Is Gavin Menzies’ 1421,” \textit{History Australia} 5, no. 3 (2008), p. 77.5.

\textsuperscript{178} Richardson’s book, \textit{Was Australia Charted Before 1606?}, provides the best introduction to this subject.
rivers, shoals and islands, and heavily labelled with place-names. Compare this with the contiguous section of coastline which is familiar to us as ‘Terre Australle’ (the left half). It has no geographical variation in the coastline, no indications of islands, rocks or shoals, and minimal labelling. There is little doubt that Desceliers and his peers were basing Jave la Grande on empirical data, and the larger ‘Terre Australe’ on cosmographic conjecture.¹⁷⁹ So, if the Dieppe cartographers were drawing upon empirical data, the question is, what misplaced geography are we looking at?

The two best contenders are South East Asia, and South America. W.A.R. Richardson outlines the case for South East Asia, arguing that with careful philological investigation the place-names

¹⁷⁹ The Egerton MS is a good example of a map where in depicting a southern continent the cartographer adopted the conventions which indicate one’s cartography is the product of empirical data, with the intention of deceiving his audience. See Tony Campbell, "Egerton Ms 1513: A Remarkable Display of Cartographical Invention," *Imago Mundi* 48 (1996).
along Jave la Grande can be matched with misplaced geographies of South East Asia. Richardson’s case is intelligent, comprehensive and well argued, but, though by no means unreasonable, it remains somewhat speculative. I prefer the arguments of Robert King, who revives and elaborates a long neglected thesis first put forward by James McClymont in 1892, who argued that the South American coastline was mistakenly duplicated on the Dieppe maps. King concludes:

South America is bilocated both in the western hemisphere in accordance with Columbus’ measurement of longitude and in the eastern hemisphere in accordance with Ptolemy’s measurement of longitude. The Dieppe mappemondes show the ultimate stage of this cosmography where the Southern Continent is confused with Brazil, South America is confused with the peninsula of Cattigara (Indochina), and Greater Java – Jave la Grande – is, like Schöener’s and Finé’s Region of Patala, made into a promontory of the Southern Continent. The outlines of Jave la Grande and the Southern Continent on these mappemondes are drawn, not from actual discovery and exploration of these regions by Iberian, French or other voyagers, but from the cosmographical ideas of the time.

King brings new evidence and a keen insight to the subject, and though the controversy over the provenance of Jave la Grande is sure to continue well into the future, I think King may have brought us as close to the truth as we can hope to get on this vexatious subject. Ultimately, though, for the story of the southern continent the Dieppe maps are no more than an historical curiosity – a cartographic dead-end that ultimately played no role in the evolution of ideas about the southern continent.

181 McClymont, The Theory of an Antipodal Southern Continent During the Sixteenth Century, pp. 11-23.
183 King’s argument – like Richardson’s – covers a large amount of evidence and requires some careful sleuthing. I have chosen not to repeat the detail of these arguments here, in part because the effort and space involved would not be proportionate to the importance of Jave la Grande in the overall story of Terra Australis, but also because the arguments are best told by the respective authors, whom readers may independently peruse as interest dictates. See McClymont, The Theory of an Antipodal Southern Continent During the Sixteenth Century; King, “The Jagiellonian Globe: A Key to the Puzzle of Jave La Grande”; Richardson, Was Australia Charted before 1606? The Java La Grande Inscriptions.
If the intrigue surrounding the Dieppe maps comprises one of the more sensational sides to this discourse, an altogether more sober observation is the simple recognition that not all world maps produced at this time included a southern continent. For instance, when it came to the key piece of empirical data upon which most sixteenth century cartographers based their southern continents – that is, the passage by Magellan round the tip of South America – Sebastian Münster, a cosmographer of considerable renown, either had different information than his contemporaries, or he interpreted the known facts of Magellan’s voyage very sceptically, for he suggests that Magellan considered his discovery of Tierra del Fuego to be the discovery of an island, not a mainland: “the land which [Magellan] had on his right hand, he doubted not to be mainland: and that on the left hand, he supposed to be islands.”

Yet as clear as Münster is on this point in his writing, when it came to mapping Magellan’s discoveries it appears he felt some pressure from convention, for, though he does indeed depict Tierra del Fuego as an island on his world map of 1540 (Figure 4m), it is unexpectedly large – not quite the stuff of a mainland, but nor the modest island which could be reasonably justified from Magellan’s passage through the Straits.

Still, few maps were as restrained with their depictions of the southern latitudes as Münster; even if a cartographer had no particular ideas about the southern continent, they were wise to the importance of making their maps both as complete and attractive as possible. I hesitate at describing all cartographic representations of a southern continent as handsome – the extravagance of a depiction like the Vatican MS’s does not necessarily translate to aesthetic beauty – but in most cases adding in this feature bestowed a map with a certain cosmographic grandeur associated with the depiction of places only on the cusp of knowledge, while at the same time making the map more visually striking. As the years passed and the southern continent appeared in an increasing number of world maps, cartographers were left with little choice but to indulge this geographical phantom.

---

184 Suarez, Early Mapping of the Pacific, p. 87. For an English translation of Münster, see Sebastian Münster and Richard Eden, A Treatise of the Newe India... After the Description of Sebastian Munster in His Boke of Universall Cosmographie (London: Edward Sutton, 1553).
Figure 4m. Sebastian Münster, *Typus Universalis*, 1540.
In many ways what we find is the cartographic equivalent of an arms race: the southern continent keeps getting larger and protrudes further towards regions visited by explorers, as it simultaneously attracts more and more geographical features and cartographic bricolage. Take as an example the prototypical 1546 world map of Giacomo Gastaldi (Figure 4n). On this map Gastaldi has a comparatively modest (but in real terms, still enormous) southern continent abutting the tip of South America.

When Gerard de Jode copied this map in 1555 he relied mostly on Gastaldi’s geography and design, except for when it came to the southern continent. With de Jode, Gastaldi’s modest southern landmass has become a much larger entity filling the southern latitudes from 60ºS (Figure 4o). So in size it is much more impressive than the original, though it remains geographically uninteresting, with neither geographical features nor place names to lift its slab-like appearance at the bottom of the map. The only significant embellishment is an inscription which seems to draw upon a version of the information provided by Martín Fernández de Enciso in his *Summa de Geographia*. The inscription reads: “This as yet unexplored southern land is stated by many reputable authorities to be 350 leagues from the Cape of Good Hope.”

Another ten years on, Paolo Forlani has again mostly followed the Gastaldi prototype for his world map, but the southern continent is now a sprawling mass bursting with geographical features (Figure 4p).

What is interesting about this last map is that Forlani’s southern continent is unabashedly aesthetic; readers know that the land labelled ‘Terra Incognita’ continues to be unknown, in which case the profusion of mountain ranges and exotic animals (the ranks of which include a camel, a rhinoceros, a lion, and the mythical unicorn) can be appreciated for their decorative qualities without impugning the credibility of the map. What makes Forlani’s 1565 map doubly interesting is the fact that just five years earlier he had produced a version of Gastaldi’s world map in which he had faithfully copied the southern continent after Gastaldi’s prototype (Figure 4q). In those few years, what had changed?

---

185 Richardson, "Mercator's Southern Continent," p. 31.
Figure 4n. Giacomo Gastaldi, *Universale*, 1546. Image courtesy of the John Carter Brown Library, Brown University.
Figure 40. Gerard de Jode, *Universalis Exactissima*, 1555. Image courtesy of the Universiteitsbibliotheek Utrecht.
Figure 4p. Paolo Forlani, *Universale Descrittione di Tutta la Terra Conosciuta Fin Oui*, 1565. Image courtesy of the Library of Congress.
Figure 4q. Paolo Forlani, world map, 1560, in Antoine Lafrery, *Geografia Tavole Moderne di Geographia*, (Rome: Antoine Lafrery) circa 1575. Image courtesy of the Library of Congress.
Conclusion

What changed was that for cartographers in the late sixteenth century and beyond, imagining the southern hemisphere without a southern continent was quickly fading as an option. Not only had the cosmography of Terra Australis been matched to the empirical data of voyages of discovery, thus entrenching the concept of a southern continent as something altogether more potent and real than an imaginary land, but cartographers had helped make Terra Australis one of the most visually striking geographies of the world map. That process finally reached its apex with the cosmographic and geographic reckonings of Gerhard Mercator, consummated in his peerless world map of 1569.
Chapter Five

Mercator’s Southern Continent

(Tom, Huck and Jim are in a hot-air balloon gusting across the United States…)

- "How fast have we been going?"
- "Well, you heard what the professor said when he was raging around; sometimes, he said, we were making fifty miles an hour, sometimes ninety, sometimes a hundred…"
- "Well, then, it's just as I reckoned. The Professor lied."
- "Why?"
- "Because if we was going so fast we ought to be past Illinois, oughtn't we?"
- "Certainly."
- "Well, we ain't."
- "What's the reason we ain't?"
- "I know by the color. We're right over Illinois yet. And you can see for yourself that Indiana ain't in sight."
- "I wonder what's the matter with you, Huck. You know by the color?"
- "Yes—of course I do."
- "What's the color got to do with it?"
- "It's got everything to do with it. Illinois is green, Indiana is pink. You show me any pink down here if you can. No, sir, it's green."
- "Indiana pink? Why, what a lie!"
- "It ain't no lie; I've seen it on the map, and it's pink."

You never see a person so aggravated and disgusted. He says –

- "Well, if I was such a numskull as you, Huck Finn, I would jump over. Seen it on the map! Huck Finn, did you reckon the States was the same color out of doors that they are on the map?"
- "Tom Sawyer, what's a map for? Ain't it to learn your facts?"
- "Of course."
- "Well then, how's it going to do that if it tells lies? That's what I want to know."

-- Mark Twain

Imaginative geographies develop through maps. Throughout history maps have provided a powerful and effective medium for the expression of existing ideas, as well as the ideal medium to play with those ideas – perhaps moving around existing geographies, perhaps supplementing geographies with additional details, perhaps adding in entirely new geographies and developing a new cosmographical scheme. Good maps – maps both expert in technique and sophisticated in their development of ideas – are immensely powerful tools; one good map can change the trajectory of an entire discourse. For the discourse of the southern continent, it happened with

the seminal maps of Oronce Finé and Johannes Schöner, and again with the 1569 world map of Gerhard Mercator (Figure 5a). There are two things that make Mercator’s world map especially significant.

Mercator goes to great lengths to construct what he considered to be a reasoned, justified representation of the southern hemisphere. He did not simply plumb his imagination in constructing a detailed austral geography, for Mercator was operating in a paradigm where cosmography was respected as, at its pinnacle, an empirical pursuit, and, at its core, a discipline concerned with reason. Throughout the early modern period there would always be cartographers willing to indulge fantasy and idle speculation in plotting geographies on their maps, but the work of the most eminent cartographers who completed their cosmographies with imaginary lands was always rooted in geographical lore. Mercator makes a virtue of this: he explains in careful detail the sources he has drawn from and the reasoning he has followed to craft his particular vision of the southern continent. In doing so, history has been bequeathed a remarkable insight into the processes underlying the creation of geographies: Mercator pulls back the veil and shows to the world the intimate relationship between theory, ontological knowledge, and geographical lore.

This is worth exploring in and of itself, but what makes Mercator’s 1569 world map ever more important is the role that this particular map played in establishing a consistent image for the southern continent. Mercator’s Terra Australis solidified a depiction of Terra Australis that had evolved from the idiosyncratic originals of Schöner and Finé; once Mercator had added his own innovations, the standard for depicting Terra Australis was set for the next century.
Figure 5a. Gerhard Mercator, *Nova Et Aucta Orbis Terrae Description Ad Usum Navigantium*, 1569. Image courtesy of the Bibliothèque National de France.
Mercator
Born in the Netherlands in 1512, Mercator’s scholastic interests were fostered during his study of natural philosophy at the University of Louvain, near one of the main centres of European printing and scholarship in the city of Antwerp. It was there that Mercator began to explore some of the pressing philosophical issues of the day, taking particular interest in the problem of reconciling the cosmological origins of the universe, especially as outlined by Aristotle (whose works remained preeminent in the field of natural philosophy), with the revelations of scripture according to the Roman Catholic religion. Though in his early career Mercator never elaborated his cosmological theories in writing, it is evident that it was an abiding interest which he pursued throughout his career. Towards the end of his life Mercator finally penned his own ideas about cosmology – ideas which helped consolidate his vision of Terra Australis – at a time when he had removed to Germany.

To begin with, however, Mercator adopted, without notable revision, the conception of Terra Australis considered most authoritative at the time. Thus, in his very first world map produced in 1538, he opted for a competent but unoriginal reproduction of Oronce Finé’s 1531 double cordiform world map. Such derivative cartography was both effective and acceptable, but copying other cartographers’ visions of the southern continent was just a starting point for Mercator. Where his peers may have been willing to accept the existence of the southern continent as a given, Mercator soon began to seek reason and evidence to justify belief. If the southern continent did indeed exist then Mercator wanted to base his cartography, first, on sound cosmographical theory, and second, on sound geographical data. Conjecture and fancy loomed as impediments; he wanted facts – empirical information – to guide his cartography, and so he set about acquiring the necessary materials for him to produce a southern continent that set down borders based on the interpretation of information rather than the interpolation of possibilities.

188 The only significant difference between Mercator’s southern continent and Finé’s original is that Mercator has shrunk the continent slightly, while maintaining its basic profile.
In time, Mercator’s labours culminated in his seminal world map of 1569: a cartographic masterwork, and the subject of this chapter. What makes this map so important is not just the geographical entities contained within its borders, but also the intellectual reckonings which lay behind the construction of the map, and the construction of its geographies. Thus, it will pay to meander with Mercator through the intellectual journey that brought him to his famous world map, before picking over the specific detail of his geography. As will become quickly apparent, Mercator’s ideas – along with the resulting graphic expression of those ideas – are of considerable importance to the history of this subject.

**Equipoise**

By 1569, with fully thirty years of experience behind him, Mercator had established his reputation as the preeminent cartographer of his time. The workmanship on his maps was second-to-none, and his eye for detail was exceptional. He had pioneered what would become the ubiquitous use of italic lettering on maps – “the Latin hand for the Latin language” – which he had encouraged with a 1540 publication, *Literarum Latinarum*, and would continue to refine.\(^{189}\) So it was no surprise that Mercator’s new world map was exquisitely engraved, highly detailed, and geographically very competent – though not without its mistakes. But what made the map truly innovative was the projection Mercator employed which allowed loxodromes to be represented on the map as straight lines. This meant that a navigator could simply and reliably plot a course between any two points and know what bearing needed to be maintained to reach that point.\(^{190}\)

The significance of Mercator’s world map does not end there. Not only did he provide the template for maps to better serve navigation, he also provided the template of a southern continent which dominated the southern latitudes of maps right up until the voyages of exploration which eroded its shores. How he came to piece together his southern continent we shall see in a moment. But first I follow Mercator in the cosmological and cosmographic

---


\(^{190}\) For an explanation of the innovations behind Mercator’s projection see Appendix Four, “Squaring the Map”.
theorising which convinced him that a southern continent, whatever its particular guise, must exist.

In approaching cosmographic theory, the first problem Mercator faced was an epistemological one. Historically, cosmographic conjecture about southern lands had been based on inductive reasoning; that is, cosmographers guessed at what might exist in the southern hemisphere on the basis of what existed in the northern hemisphere. Since the invention of the printing press and well before, cosmographers had imagined lands outside the *oikoumene*, lands which, whether represented in familiar terms or presented more as grotesqueries, were in one form or another derivative of knowledge of the *oikoumene*. As for why other lands should exist at all, cosmographers had rarely if ever felt the need to justify themselves. Better that land exist in other hemispheres than the rest of the globe should be an ocean desert. But from a methodological perspective, this sort of reckoning left Mercator with very little substance to work with. The conjecture of southern lands was unable, and, indeed, was not required, to offer any explanations about the physical workings of the earth. It was a theory which possessed no explanatory power. In the early modern period, the southern continent was assumed to exist on the basis of tradition, not argument.

Mercator demanded more. To be confident in mapping its geography, Mercator knew that he had to first prove the continent’s existence from a theoretical basis. He did so by constructing the theory of hemispheric equipoisur. According to his friend, Walter Ghim, Mercator was determined to divide the world into three equal continents, one comprising Asia, Africa, and Europe, another West India with all its adjacent kingdoms and provinces, and a third, which he realised was unknown and still awaiting discovery, but whose existence he thought he could clearly prove by solid reasoning and argument. To wit, compared to its counterparts this third continent could not be less in its geometric proportions, size, weight, and gravity and thus either be smaller than or below the other two, otherwise the
world would not be arranged in a way that it stands firm through its centre. Writers call
this the Southern Continent.191

With this line of reasoning, Mercator became the first savant of any epoch to articulate a
cosmological theory of terrestrial balance, a theory we may finally identify as the theory of
equipoisure. There were others before Mercator who made ambiguous comments about
balance, but it is difficult to see them as articulations of a theory of equipoisure. One such
figure was John Mandeville, the *nom de plume* attached to a fictitious travelogue received as a
true account. In *The Travels of Sir John Mandeville* (circa. 1357) the protagonist makes a brief
comment about the existence of the Antipodes, and goes on to provide what seems to be a
justification for this belief:

For you know well that those men who live right under the Antarctic Pole [star] are foot
against foot to those who live below the Arctic Pole [star], just as we and those who live
at our Antipodes are foot against foot. It is like that in all parts. Each part of the earth
and sea has its opposite, which always balances it.192

‘Mandeville’ speaks of balance: is he suggesting that an equal quantity of land and water must
exist in each hemisphere to ensure the poise of the sphere? It is possible, but he does not say

---

191 “Orbem in tres aequales continentes dividere decreverat, quaram unam Asiam, Africam et Europam constituisset: alteram
Indiam Occidentalem, cum omnibus regnis et provinciis illi contiguis: tertiam vero etsi adhuc latentem, et incognitam esse
non ignoraverit, solidis tamen rationibus atque argumentis demonstrare ac evincere se posse affirmabat, illam in sua
proporzione geometrica magnitudine et pondere ac gravitate, ex duabus reliquis nulli cedere aut inferiorem vel minorem esse
posse, alienin Mundi constitutionem in suo Centro non posse consistere, haec Australis continens a scriptoribus appellatur.”

For my translation, I have drawn partly on Osley’s translation (Walter Ghim, “Life of Mercator,” in Mercator: A Monograph
on the Lettering of Maps, Etc. In the 16th Century Netherlands with a Facsimile and Translation of His Treatise on the Italic
significantly on a number of points. As is normal practice, Osley’s translation is not literal, but essentially paraphrases Ghim
to make sense of his words in the known context of his times. I have opted for a more literal translation, because the context
to his words is not without its grey areas, and so I am conscious of the hazard of interpolating later knowledge or modern
assumptions into the translation. The main discrepancy concerns the passage: “…illam in sua proportione geometrica
magnitudine et pondere ac gravitate, ex duabus reliquis nulli cedere aut inferiorem vel minorem esse posse, alienin Mundi
constitutionem in suo Centro non posse consistere…” Osley translates this as ‘It could not be less in its geometric
proportions, size, weight, and gravity than the other two, otherwise the world would be unable to remain balanced on its
axis.’ I have been more literal, as the phrase “balanced on its axis” may suggest a notion of equipoise discordant with
Mercator’s ideas, as elaborated in the following pages. (Thanks to Professor John Moorehead for assistance with the
translation, which is, nevertheless, my own.)

p. 129.
exactly this, and it is just as probable that he is invoking a doctrine of opposites, as mentioned in Appendix One.\footnote{See G.E.R. Lloyd, \textit{Polarity and Analogy: Two Types of Argumentation in Early Greek Thought} (Cambridge: Cambridge University Press, 1966).}

Whatever the case, Mercator read Mandeville, which makes me wonder: could this ambiguous comment have spurred Mercator on to a much more elaborate theory? It is also possible that Mercator’s reading of Copernicus’s \textit{De Revolutionibus} (1543) encouraged his thinking about the southern continent and the question of balance. Copernicus wrote:

\begin{quote}

in his \textit{Geography} Ptolemy extended the habitable area halfway around the world. Beyond that meridian, where he left unknown land, the moderns have added Cathay and territory as vast as sixty degrees of longitude, so that now the earth is inhabited over a greater stretch of longitude than is left for the ocean. To these regions, moreover, should be added the islands discovered in our time under the rulers of Spain and Portugal, and especially America, named after the ship’s captain who found it. On account of its still undisclosed size it is thought to be a second group of inhabited countries. There are also many other islands, heretofore unknown. So little reason have we to marvel at the existence of antipodes or antichthones. Indeed, geometrical reasoning about the location of America compels us to believe that it is diametrically opposite the Ganges district of India.\footnote{Michael J. Crowe, \textit{Theories of the World from Antiquity to the Copernican Revolution} (New York: Dover Publications, 2001), pp. 113-114.} (1:3)
\end{quote}

Thomas Goldstein thinks that Copernicus may be invoking some sort of “‘balancing effect’ against the presumable weight of the Old world” with these comments about the Antipodes, but I do not think this reading is supported by the text.\footnote{Thomas Goldstein, "The Renaissance Concept of the Earth in Its Influence Upon Copernicus," \textit{Terrae Incognitae} 4 (1972), p. 39.} It seems, rather, that Copernicus is making an inductive generalisation: land has been found to exist outside the \textit{oikoumene}, therefore additional non-oikoumenical lands, such as the theorised Antipodes, may be found to exist.
The Concept of Balance

Whether or not Mercator was inspired by these or other earlier texts, he marks out new territory in his opus magnus, the *Atlas Sive Cosmographicae Meditationes de Fabrica Mundi et Fabricati Figura*, published posthumously in 1595, with a detailed and complex theory of cosmology married to a theory of terrestrial balance. It is too esoteric to warrant reproducing here, but there is one key point that needs to be made, and it concerns the nature of balance.\(^{196}\)

Moderns are likely to perceive balance as an issue pertaining to the revolution of the earth about its axis. If the hemispheres were unequal then, like a lop-sided spinning-top, the earth would have a wobbly rotation. This is how the Enlightenment thinker Charles de Brosses understood equipoisurere, and it makes intuitive, if not perfect scientific, sense. The only problem with this conception of imbalance is that it has no applicability whatsoever to Mercator. Neither Mercator nor the vast majority of his contemporaries believed that the earth rotated about an axis; their earth was stationary at the centre of the universe. Cosmologists and astronomers had seemingly confirmed this with their observations and theories, but more importantly it was writ large in the Bible. Multiple passages tell of the earth’s immobility. Psalm 104:5: “Who laid the foundations of the earth, that it should not be moved for ever.” Job 26:7: “He stretcheth out the north over the empty place, and hangeth the earth upon nothing.” Conversely, the Bible tells of the sun’s mobility. Ecclesiastes 1:5: “The sun also ariseth, and the sun goeth down, and hasteth to his place where he ariseth.” Faced with this body of authority, how could one claim to be a Christian and believe that the earth rotated, and orbited the sun?\(^{197}\)

It was not until the late seventeenth and early eighteenth centuries that geocentrism and Aristotelianism were comprehensively replaced by ideas about physics and planetary mechanics familiar to us today. But for Mercator in the sixteenth century, the earth was yet to move or spin. His cosmology is clear:

\(^{196}\) I elaborate upon the finer points of Mercator’s theory of equipoisurere in Appendix Three, “The Theory of Hemispheric Balance (Equipoisurere) and its Role in the Discourse of the Imaginary Southern Continent” (Appendix Three reproduces some of the material already incorporated into the thesis).

he [God] assigned then a place for the Earth, and the Chaos, to wit, a point in the midst of the void, upon which it rested, and beyond which it is not permitted to moove. This is the greatest Miracle of all nature, surpassing the capacity of man, and humane credence: were it not that the wheeling course of the starres, and the Navigations round about the world, did not manifestly winnesse the same: for who could beleve, that so ponderous a weight could subsist hanging in the middest of the heaven?

...the Earth, desireth uncessantly the point, which is assigned to it in this vacuity, by an impression from the will of God, and is mooved towards him, by a certaine desire in its ponderosity, till that it hath obtained a like resting place on all parts, supporting and sustaining upon it, the other parts of the world, as upon its shoulders.¹⁹⁸

Mercator leaves no doubt about his stance as a God-fearing geocentrist. But so what? Well, in a universe where everything tends towards the centre – Earth resting centremost – imbalance is largely meaningless. If Mercator’s Earth was an imbalanced asymmetric oblong spheroid it would have no cosmological ramifications. Earth could not topple off into space due to this ‘imbalance’, for all things tend towards the centre of the universe. It could not wobble about its axis because it did not rotate or move in any fashion. Indeed, Mercator’s Earth was subject to the same basic forces which Aristotle had outlined in the fourth century BC: rectilinear and violent movement.¹⁹⁹ If Earth was created ‘imbalanced’ (with unequal masses in each hemisphere) it would have nevertheless settled at the centre of the universe – Earth’s centre of gravity corresponding with the centre of the universe. If somehow the hemispheres later changed, Earth would reposition by rectilinear motion (moving perpendicularly) so that its centre of gravity again occupied the centre of the universe. The notion of hemispheric balance in this system is nonsensical. Balance implies poise, whereas Mercator’s Earth is not poised in

¹⁹⁸ Gerhard Mercator et al., *Atlas, or, a Geographicke Description of the World, Volume 1* (Amsterdam: Theatrum Orbis Terrarum, 1968 (original 1636)), pp. 6-7. I am using the 1636 English version of Mercator’s *Atlas*.

¹⁹⁹ Mercator’s cosmology was different to Aristotle’s in that Aristotle believed in the concentricity of the elemental spheres, whereas Mercator advanced a terraqueous Earth where the waters only fill the shallow depressions on the surface of the earthen sphere.
the sense that it might somehow topple or wobble if it loses equivalence between the hemispheres. It sits immobile at the centre of the universe no matter how its geometric shape or distribution of mass is conceived.200

Thus, Mercator’s theory of hemispheric balance relates to his ideas about how Earth was formed in creation as the elements converged into a malleable ‘Chaos’, before settling into the form of a sphere due to elemental physics. Mercator’s theory of balance is actually concerned with the way the oceans and lands interacted while Earth was still a malleable mass in the first few days of creation – not yet “dry, sollide and firme”. The finer points of this theory are too complicated and abstruse to detail here, but the important point is that hemispheric balance in Mercator’s reckoning had nothing to do with Earth’s rotation or its trajectory through space (concepts still a century away from being accepted). The reality is that Mercator’s theory of equipoisure was so difficult to comprehend that, as best I can tell, no scholar ever did completely follow it. When in later decades and centuries other scholars mentioned equipoisure, it was as a simplified version of Mercator’s conclusions, and not based on his reasoning. Those conclusions were that:

the machine of the earth is it selfe equally balanced, without budgeing one way or other, and consequently also the Sea, which is contained within the bosome of it… For seeing that the lands knowne to the ancients, are comprehended in 180. degrees of Longitude, that is to say, doe onely possesse the one halfe of the sphere, it was necessary there should be also as much Land in the other halfe. And seeing that Asia, Europe and Africa, for the greater part, are situated beyond the Equinoctiall, towards the North; it was

200 I have encountered more than one text where it is assumed that Mercator must have had the rotation of the earth in mind or some sort of toppling effect when referring to hemispheric balance. For example: “Mercator believed that some of Marco Polo’s descriptions applied to the southern continent, and that such a large territory was necessary to balance the earth so that it would rotate properly.” (Arthur Jay Klinghoffer and Harvey Sicherman, *The Power of Projections: How Maps Reflect Global Politics and History* (Westport: Greenwood Publishing Group, 2006), p. 71) It is understandable why an author might automatically assume this, given it is so easy to forget that the theory of heliocentrism did not attain ascendancy till the late seventeenth/early eighteenth century. As Edward Grant argues, these sorts of mistakes demonstrate that assumptions are formed on the basis of periodisation when we should in fact look to the detail of subjects. For instance, medieval cosmology was dominant from the thirteenth century through the late seventeenth century. Simply because a period of time matches the era known as the Renaissance or early modern period, it does not mean all fields of knowledge – such as cosmology – had transitioned from their medieval foundations. (Edward Grant, “A New Look at Medieval Cosmology, 1200 -1687,” *Proceedings of the American Philosophical Society* 129, no. 4 (1985), pp. 417-418.)
necessary as great a continent to remaine under the pole Antarctick, which should bee equivalent in the other Lands, with the Meridionall parts of Asia and new India, or America.\textsuperscript{201}

**Mapping Terra Australis**

However abstruse his theory, by dint of ‘solid reasoning and argument’ Mercator now considered that he had theoretical proof of the existence of a vast southern continent. The next step was to compose its geography. To do this Mercator was determined to rely on the geographical traces of explorers and travellers, without resorting to whimsical interpolations. In this vein he set out in unequivocal terms his *modus operandi* applicable to every last detail on his world map:

> The second object at which we aimed was to represent the positions and the dimensions of the lands, as well as the distances of places, as much in conformity with truth as it is possible so to do. To this we have given the greatest care, first by comparing the charts of the Castilians and of the Portuguese with each other, then by comparing them with the greater number of records of voyages both printed and in manuscript. It is from an equitable conciliation of all these documents that the dimensions and situations of the land are here given as exactly as possible, account being taken of all observations made till now which have come into our hands.\textsuperscript{202}

With these strictures in place, Mercator’s representation of the southern continent would become the most authoritative of his era.

\textsuperscript{201} Mercator et al., *Mercator-Hondius Atlas*, p. 20.

\textsuperscript{202} International Hydrographic Bureau, "Text and Translation of the Legends of the Original Chart of the World by Gerhard Mercator, Issued in 1569," *Hydrographic Review* 9 (1932), p. 13. On top of this, Mercator elaborated a second set of guidelines to be followed in dealing with ancient knowledge of lesser known geographies (p. 35): “That which long experience teaches, in order to advance with the object of a perfect knowledge of truth and not to be blinded by error, should be so established that, after discarding all which obvious reasons reveal to be false, that which is probable is retained until, every test and every reasoning being in agreement, the facts themselves in their very truth are placed before the eyes.”
Already in 1541 Mercator had ventured a representation of the southern continent which departed significantly from earlier cartographers’ depictions. One of his chief innovations on his 1541 globe, reproduced and elaborated on his 1569 world map, was to designate provinces mentioned in the narrative of Marco Polo as the northern-most regions of a promontory of Terra Australis. There was “Beach, a province yielding gold, where few from foreign parts do come on account of the cruelty of the people,” “Maletur, a kingdom in which there is a great quantity of spices,” and “Lucach.”

Mercator’s mistake in assigning South East Asian geographies to Terra Australis stemmed from ambiguities in his copy of Polo’s *Travels*. To begin with, the spatial logic of Polo’s travels indicated that these regions were further south than the well-known island of Java. This interpretation also helped explain why it was that the regions mentioned by Polo did not match any of the already known geographies of South East Asia: because they were further south than European merchants had ventured. In addition to this, these regions were named as ‘provinces’ and ‘kingdoms’, whereas other lands named in the same section of Polo’s *Travels* had been designated islands. With this information at his disposal, Mercator reached what must have seemed an obvious and reasonable conclusion: Beach, Maletur and Lucach were part of a mainland comprising the northernmost peninsula of the southern continent.

In his own words: “Thus we conclude, therefrom, that the Southern Continent extends far to the northward and makes, with Java Major, a strait.” This conclusion was reinforced for Mercator by a trace he dug out of the Italian traveller, Ludovico di Varthema’s, narrative of his travels throughout Asia in the first decade of the sixteenth century. Mercator cites him as follows:

Ludovico di Varthema, in Bk. 3, on India, Chapt. 27, reports that on the southern side of Java Major, to the southward, there are peoples who sail with their backs to our stars of the north until they find a day of but 4 hours, i.e. to the 63rd degree of latitude and he refers to this as coming from the mouth of his Indian pilot.

---

203 Ibid., p. 43.
204 Richardson, “Mercator's Southern Continent,” pp. 74-77. See McClymont, *The Theory of an Antipodal Southern Continent During the Sixteenth Century*, pp. 6-7, for an explanation of the true geography of ‘Maletur’ and ‘Lucach’.
206 Ibid., p. 45.
Though it was hearsay, hearsay was often the only source of information available to knowledge-hungry cartographers and geographers, and so Mercator was disposed to give it credence. You can observe on his map the way Mercator blended these two complementary pieces of information, with a huge gouge from the body of the southern continent abutting the peninsula of Beach.

Further west the southern continent is shown running along the 44th parallel, or thereabouts. To the north sits the tip of South America, with Madagascar easily identified to the east. Below Madagascar another small island is marked as the Los Romeros Isles, now known as Amsterdam Island and properly located much further east. An inscription explains a key piece of information which Mercator used to model the southern continent in this region:

Between Madagascar and Los Romeros Isles there is an extremely violent current of the sea in the East and West direction such that sailing therein is of great difficulty to go from the one to the others according to the testimony of M. Polo the Venetian, Bk. 3, chapt. 40; hence necessarily these coasts [of the southern continent (where this inscription is located)] cannot be very distant from Madagascar, as to flow to and fro between the eastern and western oceans at great speed the channel must be restricted.\(^207\)

On this basis, Mercator figured the southern continent had, obviously, to be further south than the Los Romeros Isles, but close enough to the tip of South Africa to create the channelling effect which made the east-west current so powerful. The results are plain to see. What is curious about this reasoning is that, as W.A.R. Richardson’s study reveals, the sources Mercator seems to be relying upon suggest the east-west current is actually a north-south current.\(^208\) This, however, is immaterial to the bigger picture: Mercator may have been mistaken in his interpretation and recounting of this information, but he was nevertheless true to his methodological strictures in relying on empirical data.

\(^{207}\) Ibid., p. 43.
\(^{208}\) Richardson, "Mercator's Southern Continent," p. 81.
With this in mind, it is worth pausing to consider just what counted for empirical data. The key
criterion was that it be information sourced in the first instance from direct observation.
However, information from an explorer’s own hand or mouth was rarely available to
cartographers. Rather, most information was available one or more degrees removed from the
original source – be it a narrative of a voyage of discovery written by a scholar or raconteur, a
more general geography text, word-of-mouth, or the data recorded on a printed map. Of course,
the unavoidable methodological foible of relying on second-hand information frequently
resulted in errors; the magnitude of an error could quickly multiply as different layers of
erroneous information were acquired and reconciled with one another.

On Mercator’s world map, we see this most clearly with his geography of ‘Psitacorum Regio’: the
Land of Parrots amidst the southern Atlantic region of Terra Australis. It was the product of
an accumulation of errors and apocrypha. By the 1530s Brasil had become a common label for
eastern South America. In spite of this, Oronce Finé included on his 1531 world map a Brasielie
Regio on the southern continent. This meant that most scholars recognised two Brasils on
Finé’s map. It was a recipe for confusion. When in 1535 a cartographer (identity unknown)
came to compose a new world map, he seems to have been befuddled by Finé’s transference of
South American nomenclature to the southern continent. Rather than resolving the idiosyncrasy
of two Brasils, the cartographer did what he no doubt considered the wise thing (according to
aesthetic but certainly not methodological dictates) and duplicated his Brasils. Hence, in South
America we find the label Brasilia Regio, which is accompanied by the common Portuguese
designate for Brasil, Papagalli Regio: the Land of Parrots. Then, following Finé’s world map,
he duplicates this information on the southern continent, with Brasielie Regio included on the
region of that continent to the south of Asia. Having gone this far the safest thing to do was
complete the job and, as Richardson has termed it, hedge his bets.²⁰⁹ Thus, as parrots had been
intimately associated with Brasil since the land was first discovered, a little further west on the
southern continent we find a small inscription with the words Psitacorum Terra – this time using

²⁰⁹ Ibid., p. 27.
the Latin term for Land of Parrots. So we have two Brasils, two Lands of Parrots. No doubt the cartographer figured one of these sets of labels was right – and until it could be determined which one, including these labels on the southern continent was at least an effective way of enhancing the verisimilitude of the southern continent.

Decades later, this anonymous cartographer’s error was given new life. As W.A.R. Richardson explains, in Mercator’s exhaustive search for information on the southern continent, he came across his anonymous predecessor’s addition of a Land of Parrots to the southern continent. Mercator “failed to realise that the anonymous cartographer had placed PSITACORUM TERRA on Finé’s landmass southeast of the Cape of Good Hope precisely because of the nearby presence of the BRASIELIE REGIO inscription. Mercator consequently placed his Psitacorum regio in roughly the same position as the anonymous cartographer had put it, but on his own version of a southern continent.”

Mercator was willing to bank on this Land of Parrots truly being a part of the southern continent because it agreed with other information he had at his disposal. First, as many cartographers had done before him, Mercator relied on the comments of Enciso to prove land existed beneath South Africa:

Here, in the 42nd degree of latitude, at a distance of 450 leagues from the Cape of Good Hope and 600 from St. Augustin’s Promontory, a headland of the Southern Lands was discovered, as stated by Martin Fernandez de Enciso in his *Suma de Geographia*.

This information was then paired with an even more compelling article of empirical data – the narrative of Cabral’s 1500 voyage to Brasil as told by Lorenzo Cretico, who recorded that:

Near the Cape of Good Hope they were driven by a South-west wind and discovered a new country, which they called the Land of Parrots, because they found these birds there in incredible number; some of them exceed a cubit and a half in length, and are of many colours; we have seen two, so that there is no doubt of the truth of it. When the sailors

---

210 Ibid., pp. 27-30.
saw this coast, they believed it to be a continent because they sailed for two thousand miles without coming to the end of it.\textsuperscript{212}

Finding these different sources of information and then realising that they intersected with one another – Cabral’s discovery of a Land of Parrots roughly agreeing with Enciso’s report of land south of Africa, then the anonymous 1535 world map showing this very land – must have been compelling stuff for Mercator. It seemed that multiple independent sources had corroborated each other, and on top of this the emerging geography fit in with his understanding of the peninsula of Beach and bight of Varthema. And so Mercator duly inscribed on his map the Land of Parrots:

Psitacorum regio, so called by the Lusitanians, carried along by the libeccio when sailing towards Calicut, on account of the unprecedented size of these birds at that place. As they had followed the coast of this land unto the 200\textsuperscript{th} mile without finding an end to it, there was no doubt but that they had reached the Southern Continent.\textsuperscript{213}

\textbf{Terra Australis, Nondum Cognita}

And so we have Mercator’s world map of 1569: an incomparable achievement in the developing art and science of cartography. But while we take stock of this we must not forget that the geography which occupied fully one third of this map – the elaborately constructed Terra Australis – was a composite of data of dubious provenance. The reality understood by Mercator and by all cartographers was that if they were to rely only on original sources then their maps would be very poor indeed, as access to original sources – either to individual observers or their recorded observations – was extremely limited. Thus, cartographers had to rely on second- and third- and twelfth-hand information to source their geographical data; a method born of necessity, but one which often led to errors.


\textsuperscript{213} Bureau, "Text and Translation of the Legends of the Original Chart of the World by Gerhard Mercator," p. 35. Note: Mercator uses “libeccio” to refer to a south-west wind.
Take the reliance on printed maps. These maps were useful as sources of data because they blended huge data sets into a single, comprehensible, easily accessed whole, and because they often contained obscure or even secret geographical information. The problem was, it only took a single cartographer to make an error or invent a geography to set in motion an entire erroneous geographical tradition. The islandification of Baja California (the peninsula in western Mexico) is a remarkable example of this. Erroneous reports and possibly a chart from a 1602 Spanish expedition to the western coast of northern America led Henry Briggs to recast Baja California as an island in his 1625 map of America and probably in an earlier iteration. Other cartographers who had shown Baja California correctly as a part of the American mainland consulted Briggs’ map and quickly adopted his geographic revisions, and others theirs, so that within a few generations the representation of an insular California had become cartographic orthodoxy – traceable back to a single errant map. It was not until an overland expedition in 1746 proved that the peninsula was joined to the mainland that Baja California was permanently re-attached to America.

The reality in the sixteenth and seventeenth centuries was that whenever a cartographer offered up what appeared to be a superior mapping of a region – remembering that what might appear to be an advance in the state of knowledge could just as well be the product of interpolation, error, and invention – other cartographers were quick to appropriate that information. This informal system of cartographic plagiarism contravened the same basic precepts of intellectual property as exist today, but it was nevertheless common practice, and largely accepted as a fact of life by the cartographic community.

---

214 I mean to differentiate here between printed maps and the manuscript charts plotted during a voyage of discovery. Manuscript charts, journals, logs and the various other sources recording direct observations during an expedition were often suppressed as state secrets, and where they were made available it could be extremely difficult to get hold of that information, or even to know that it existed to seek it out.


216 Given the expense involved in engraving a map and then having it printed, it was in cartographers’ commercial interests to protect their intellectual property. There are many instances of cartographers of various nationalities seeking and being granted by the state exclusive rights to their intellectual property – be it a particular style of map projection, a particular map, or maps that concern particular regions. (Yet even where exclusive rights were granted, it did not guarantee other parties would not infringe those rights.)
In the context of the evolving image of Terra Australis, this meant that the form of the southern continent expressed in Mercator’s seminal 1569 world map – whatever its merits or shortcomings – was reproduced by countless of his successors. Abraham Ortelius is credited as one of the most influential figures of sixteenth century cartography, and even he mostly followed Gerhard Mercator in his depiction of the southern continent (Figure 5b). But it would be unfair to retrospectively characterise this as a dishonourable act of plagiarism: Ortelius was deferring to what was considered a superior projection, firmly grounded in the sum of empirical and non-empirical lore pertaining to the southern latitudes. What sense otherwise? What is more, Ortelius copied Mercator’s cartography with Mercator’s full knowledge and blessing.\textsuperscript{217}

The result was that the basic Mercatorian image of the southern continent became a standard of world and hemispheric maps throughout the next century (and remnants of it remained in various guises throughout the late seventeenth and eighteenth centuries). Thus, everyone interested in geography in the late sixteenth century was inundated with consistent representations of the southern continent across a variety of geographical mediums – in geography and cosmography texts, narratives of exploration, maps of the world, and so on. There was no escaping the imperious presence of Terra Australis – even as it continued to carry the label, \textit{nondum cognita}.

\textsuperscript{217} Shirley, \textit{Mapping of the World}, p. 145.
Figure 5b. Abraham Ortelius, *Typus Orbis Terrarum*, 1570. Image courtesy of the National Library of Australia.
Conclusion
Against this backdrop we find that belief came to be stored in the existence of the southern continent, but, importantly, not unconditionally in the cartography of the southern continent. To be sure, the cartography of the southern continent played a major role in the southern continent’s acceptance as a geographical entity by making it both tangible and compelling. Maps were a medium that spoke to people of all inclinations and varying degrees of knowledge and literacy. To see Terra Australis on the map was to see an entity on the cusp of knowledge – real but unknown. However, it is important that we do not make the mistake of assuming that the cartography of the southern continent was assumed to be a representation of reality itself. It was not. The crux of this point boils down to two intimately related propositions: that the early moderns were rational agents who well knew that the southern continent depicted on maps was in large part conjectural and provisional, and that the early moderns nevertheless had faith that this unknown land did exist. In the simpler words of Joseph Hall, ‘this it is, yet we know it not.’ 218 In subscribing to such a potentially inconsistent worldview, the early moderns collapsed the dichotomy separating what exists from what is known into a spectrum of the real, the probable, and the possible. Alfred Hiatt elaborates:

At first glance the proposition that geographers were unable to distinguish false from true information, and consequently represented the fictional as well as the real on their maps, seems self-evident. But… the opposition between true and false risks misunderstanding and misrepresenting sixteenth-century geography. I do not mean that mapmakers of the era did not distinguish between truth and falsehood, or that they were uninterested in true representations, or unconcerned to eliminate false information from their maps; on the contrary. However, they operated primarily on axes slightly different to that of truth-falsehood: sixteenth-century geographers, like their medieval counterparts, dealt in certainties and uncertainties, distinguishing between probabilities and improbabilities, the attested and the unattested… The unknown southern land might have been a fiction, but

218 Hall, Discovery of a New World, p. 13.
its shape and features were not random: they were the result of careful consideration and interpretation, however speculative.\textsuperscript{219}

No matter what fantasies were entertained about the lands of Terra Australis, the cartographic image of the southern continent was always provisional; the map offered the promise of existence without deceiving people into thinking this entity had been surveyed by explorers. There were specks of information about the land, hints of a possible coastline, but very little that approximated to geographical fact. The distinction is crucial: belief was not in an inflexible version of the southern continent, but in the southern continent as a sprawling geographical entity existing in a shape and form always yet to be finalised. It was the work of the map to establish the southern continent as a geographical orthodoxy, an image inextricably associated with conceptions of the globe, which is what happened throughout the sixteenth and seventeenth centuries. Belief in the southern continent’s existence became commonplace.

After this period, when the potential bounds of the southern continent were being progressively eroded by exploration, the map’s work had been done. It mattered little that the southern continent was no longer recognisable by the time of Cook; the idea of its existence had been cemented into geographical thinking, such that long after we might expect it would be discarded, it continued to influence the imagining and exploring of the southern hemisphere.

\textsuperscript{219} Hiatt, \textit{Terra Incognita: Mapping the Antipodes before 1600}, pp. 224-225.
Chapter Six
Seeking Terra Australis

The essence of the exploratory enterprise came when desire and expectation met reality. Reality might have been a fabled city that simply would not appear or a group of native people committed to their own pursuits. Successful explorers struggled to measure their own preconceived images against what the land revealed. If the lore proved misleading, it was time to abandon such views for more realistic ones. But only rarely did such simple substitutions of reality for myth take place.

-- James P. Ronda

A continent as vast as Europe, Africa, and Asia combined; a land abounding with spices, gold, and all manner of natural riches; a civilisation of millions awaiting the salvation of a Christian God. Such was Terra Australis, the locus for a suite of ideas so compelling that from the latter half of the sixteenth century this imagined geography began to figure in the machinations of explorers and entrepreneurs in its own right. And, indeed, well it might: the European powers were running out of new territories to exploit in the better known regions of the world, whereas the potential of Terra Australis remained completely untapped. If found to exist as it had been imagined, what a prize the southern continent would be: fame and glory would redound to its intrepid discoverers, and kings, queens, and their powerful merchants would possess a bounty of inestimable value. But while the British, French, Portuguese and Dutch were still contemplating the merits of sending an expedition to discover the southern continent, the Spanish – spurred by local Incan knowledge of gold-rich Pacific islands, and conscious of their unique obligation to deliver salvation to godless heathens – decided to act. In 1567 they launched the first of three expeditions in search of Terra Australis, in doing so heralding a new era where the imaginations of cartographers and cosmographers were put on a collision course with geographical reality.

But reality is a slippery beast. Time and again new data – the data produced by explorers’ encounters with reality – was considered potentially compatible with pre-existing geographical conceptions: sometimes because pre-conceptions coincidentally matched up with observed reality, sometimes because preconceptions were vague enough to be retrospectively fitted with new data, and sometimes because observations were only as good as the filter through which

---

they were made – meaning existing geographical cognitive frameworks encouraged the recording and interpretation of observations in accordance with preconceptions. Inevitably, however, geographical preconceptions did come up against incompatible data. Recognition of that incompatibility produces geographical dissonance: the knowledge that one’s geographical cognitions are dissonant (here, the idea of Terra Australis on one hand, and newly acquired geographical data on the other), attended by the need to make them consonant. Rarely, though, has the collision of reality and preconceptions resulted in an imaginative geography simply being discarded.

Indeed, throughout history imaginative geographies have proved to be of profound durability. For centuries an imaginative geography can undergo revision after revision after revision to make that geography compatible with new data; only once that process is exhausted, or once the geography is so diminished as to no longer be worth believing in, is an imaginative geography likely to be discarded. This response to geographical dissonance is a predictable product of the specificity that characterises empirical data, for whereas empirical data is usually tied to a particular space, even more spatially explicit imaginative geographies like the North-West Passage remain largely indeterminate within broad parameters. Indeed, the key to the resilience of imaginative geographies to evidence of their non-existence lies in the dissociation of spatial location from ontological verity. So long as there remains a space on the map which is ‘nondum cognita’ and that space conforms to the basic requirements of the given geography – perhaps being in a certain hemisphere or continent, or of a certain size, or in a certain climatic zone – geographical fictions may be revised, uprooted, or redeployed as required, allowing them to survive the repeated rigours of empirical falsification. For Terra Australis, it was in the wake of the Spanish and then the Dutch voyages that this process began in earnest.

**Commodities: land, riches, souls**

Before we embark with the Spanish on that first historic voyage, it will pay to know just what it was that made Terra Australis such an enticing prospect. An insight into the mind of a would-be explorer is preserved in Sir Richard Grenville’s proposal to pursue Terra Australis – an offer made in the name of service to Queen and country, but an act which held the promise of great
individual reward. His 1573 petition to Queen Elizabeth of England sought Letters Patent for the following:

The discoverie traffiqque and enjoyenge for the Quenes Mætie and her subjectes of all or any Landes or Islandes and Countries southewarde beyonde the equinocitiall or where the Pole Antartik hathe anie elevation above the Horison and wch Landes or Islandes and Countries be not alredie possessed or subdued by or to ye use of anie Christian Prince in Europe as by the Charts and Descriptions shall appere.221

In Grenville’s time the globe – just a few generations earlier almost entirely unknown – was already starting to seem a very small place. “Portugall”, Grenville explained, “hathe attein one parte of the newfounded worlde to the Este, the Spaniarde an other to the Weste, the Frenche the third to the North”.222 But this need not be a lament, for Grenville considered that though England had failed to secure her share of the newfound lands, Terra Australis, possibly the most profitable of all the world’s regions, had yet to be claimed: “nowe the fourthe to the Southe is by God’s providence lefte for Englonde, to whome the other in tymes paste have ben fyrste offred”.223 What made Terra Australis such a providential prospect was the region’s two great “commodities”. There was the commodity of human souls: millions of unwitting heathens whose salvation would see “the enlarging of Christian faith, wch those naked barbarous people are most apte to receive and especiallie when hit shall not carie wth hit the unnaturall and incredible absurdities of papistrie” (ie, Roman Catholicism).224 But of even more importance were the material commodities: “The likelihood of bringinge in grete tresure of gold sylver and perle into this relme from those countries, as other Princes have oute of the lyke regions”, as well as spices and other trade goods.225

221 R. Pearse Chope, ”New Light on Sir Richard Grenville,” Transactions of the Devonshire Association 49 (1917), p. 238. In 1625 William Courteen submitted to England’s King James a very similar proposal to Grenville’s, seeking rights to “all the lands in ye south part of ye world called Terra Australis incognita extending Eastwards and Westwards from ye straights of Le Maire…” (George Mackaness, Some Proposals for Establishing Colonies in the South Seas (Sydney: 1943), p.5.)
223 Ibid., p. 238.
224 Ibid., p. 238.
225 Ibid., p. 238. Grenville’s petition was enthusiastically endorsed by the Queen and her advisers, but by the time Grenville was ready to sail the Queen had reversed her decision, worried that Grenville’s proposed passage through the Straits of Magellan and beyond would cause conflict with Spain. (———, ”New Light on Sir Richard Grenville,” pp. 228-229.)
The French also had an interest in Terra Australis, the land they sometimes referred to as the ‘Third World’, with the Albacque brothers submitting a proposal for an exploratory venture in 1571, and in 1582 Lancelot Voisin de la Popelinière urging his countrymen to possess the unknown southern land which promised a bounty as great or greater than those reaped in the new and old worlds. Something that Popelinière and Grenville had in common in addition to their belief in Terra Australis and their desire to see it discovered and settled was their concern with over-population in their respective motherlands, and the benefits they perceived in removing the more base elements of society to a distant colony. Thus, Grenville listed under the prospective commodities of the southern continent “The settinge of our Idle and nedie people to worke,” and Popelinière noted that “At the least it will be of use after discovery to receive the purgation of this realm”. In time both the French and English would send convicts as well as the ‘idle and nedie’ to South Seas colonies, though not in the circumstances imagined in the sixteenth century.

There is another common element to Grenville’s and other entrepreneurs’ proposals, and that is the blend of speculation with specific claims. On the one hand the proposals were speculative – based on conjecture rather than fixed data – meaning it was not possible to specify the precise location of lands to which rights were sought. On the other hand, they were able to specify the commodities – people, gold, silver, pearls, spices – that would be found in these lands, wherever it was that the lands were. How to explain this anomaly? Fantasy and whim certainly played their part, as did good business sense which dictated that it was better to tie up the rights to a land and its commodities through a broad and speculative commission before, rather than after, any potential act of discovery. But there was also more substantial reasoning driving these expectations. It was common knowledge that there was gold and silver to be had in South


America, and pearls and spices in South East Asia. Even without knowing the land’s precise location, it was believed that Terra Australis, when discovered, would be found to exist not far from either of these regions. This knowledge had significant implications. First, many people subscribed to the simplistic geographical rule of thumb that said whatever was found in one region would be found in neighbouring regions – an inductive generalisation whereby observed events or conditions are expected to be repeated. Then there were those who argued for a principle of latitudinal determinism, believing that distance from the equator (latitude) determined climate, and climate helped determine both geography and biological diversity. It was a notion which had been around since antiquity, as seen, for instance, in the writings of Ptolemy: “Reason herself asserts that all animals, and all plants likewise, have a similarity under the same kind of climate or under similar weather conditions, that is, when under the same parallels, or when situated at the same distance from either pole.”

On the basis of latitudinal determinism, it was believed that Terra Australis should be found to possess temperate climates like those found in similar latitudes of Europe, spices like those found in similar latitudes of Asia, and gold, silver and precious stones like those found in comparable latitudes of Africa and the Americas.

The result of these assumptions and arguments was that interest in Terra Australis focused on less than half the prospective extent of the continent. In the imaginations of explorers, merchants, imperial power-brokers and fellow advocates for Terra Australis, it was the regions contiguous to the Americas and South East Asia, and those lands of Terra Australis stretching between those regions (that is, in the southern Pacific), which held the greatest allure. This contrasts with the relative lack of interest which met the proposition of reconnoitring the southern Atlantic or the latitudes south of the Indian Ocean. The latter regions were not contiguous with lands rich in commodities, were of no compelling strategic value, and, given they would exist in the frigid zone, could be expected to be a misery of cold, wet, and wind. To explore those regions would amount to the pursuit of knowledge for its own sake, a proposition inimical to the exigencies of sixteenth century imperial and commercial existence. Explorers

---

228 Ptolemy, The Geography, pp. 31-32.
were indeed interested in knowledge, but specifically knowledge which promised commercial or imperial value.

Inductive generalisations and theories of latitudinal determinism lifted the prospects of the eastern hemispheric portion of Terra Australis, but what made the region irresistible was the geographical lore telling of lands of plentiful gold. For two millennia the lost city of Ophir had taunted the minds of men covetous of riches and glory. As of the sixteenth century, Ophir had yet to be identified, despite its existence having been known for millennia through the Bible’s *Third Book of Kings* (9:26):

> And King Solomon made a navy of ships in Eziongeber, which is beside Eloth, on the shore of the Red sea, in the land of Edom. And Hiram sent in the navy his servants, shipmen that had knowledge of the sea, with the servants of Solomon. And they came to Ophir, and fetched from thence gold, four hundred and twenty talents, and brought it to King Solomon.

Where were the Isles of King Solomon whence the King received his cargo of gold and other riches every three years? Could it be that Ophir was part of the Golden Chersonese (Golden Peninsula) tantalizingly mentioned by Ptolemy and other scholars and thought to exist somewhere in South East Asia? Could it be that Ophir and the Golden Chersonese were in fact different parts of or different names for Beach, the land of gold talked about by Marco Polo and located by Mercator south-east of Asia in a promontory of Terra Australis? In 1613 Godinho de Eredia mused on the possible locations of Ophir:

> The situation of Ophir and Tharsis is still unsettled after much discussion.

Robertho Stephano (Francisco Botablo) places Ophir in Christovão Colon’s island of Hespanhola, whence, from Cybao, 450 talents of very fine gold were taken to Solomon. Arias Montan places Ophir in Perù: others in various places, such as Sophala in Monomotapa.
More probable is the opinion of Josephus that it was a province of oriental India, founded
by Ophir, son of Jectan, mentioned in Genesis, Chapter 19.

The scriptures, too, place Ophir and Tharsis in the far east.

Perhaps they were in the region of gold mentioned by Ptolemy in his Table 12 of Asia
near Ganges, where in his time was one of the great trade-centres of the world; for along
the Ganges came the gold-traffic from the very high mountains of Negar Phirin. But I do
not know if these were the high mountain called Sephar.229

And then there was the gold-producing island spoken of in the oral history of the Inca – said to
lie somewhere in the Pacific.230 Could it be that these four golden provinces were one and the
same – or, better still, different provinces of an entire region abounding in gold?

Sure enough, there were regions in South East Asia which had been found to produce gold, but
nothing which lived up to expectation. The Malay Peninsula was well known to merchants in
the sixteenth century, but it was not sufficiently gold-rich to be identified as the Golden
Chersonese, even though Ptolemy’s original reference was, in fact, to this region. As time went
by without any of the various lands of gold being identified, expectations of the abundance of
gold grew so unrealistic that, as Colin Jack-Hinton has remarked, no matter what gold-
producing province explorers did come across, it could never be identified as Beach, Ophir, or
the Golden Chersonese.231 Expectation always outpaced reality, which meant that “as
geographical knowledge extended eastwards and westwards without Ophir being recognised, its
supposed position moved with that knowledge, always a little ahead of the latest discovery.”232

As the Spanish expanded their domain west from the Americas, and the Portuguese expanded

229 Godinho de Eredia, Eredia’s Description of Malaca, Meridional India, and Cathay, trans. J.V. Mills (Kuala Lumpur:
230 For more information, see Jack-Hinton, The Search for the Islands of Solomon, p. 24.
231 Ibid., p. 13.
232 Ibid., p. 13.
their domain across South East Asia, the putative location of these lands of plenty was pushed into the same area of unexplored space in which the southern continent was imagined. In this way Ophir, Beach, the Golden Chersonese, and the islands spoken of by the Incas all coalesced in the one meta-geography of Terra Australis.233

**Mendaña**

Within this context of geographical lore, Spain became the first nation to sponsor an expedition specifically in search of Terra Australis. It was commissioned thanks, in part, to the lobbying of Pedro Sarmiento, a man not averse to self-promotion. Like many of his time, he wrote from the third person perspective:

> In the year 1567 one Pedro Sarmiento gave to the Licentiate Castro, Governor of Peru, information concerning many islands and continents which he said existed in the Southern Ocean, and offered personally to discover them in the name of his majesty.234

Despite Sarmiento’s offer to personally discover these lands, nepotism saw command of the expedition go to the Governor’s nephew, Alvaro de Mendaña de Neira. Two ships with 150 men departed Callao in November 1567. They sailed with clear objectives:

> The general wish of the people, the resolution of the soldiers, and the instructions that they carried were unanimous, that they should settle in the country that they discovered; and for that purpose they were furnished liberally with munitions of war, arms, clothing, seeds, and other things required by settlers.235

When, after months at sea and numerous encounters with small Pacific islands, the expedition finally discovered a large landmass, it was initially thought that it may be the sought-after

---


235 Ibid., p. 83.
southern continent. These hopes were quickly dashed as it became apparent that the land was in fact an island – that of Santa Isabel in the archipelago known today as the Solomon Islands. The malcontent Sarmiento, however, was unwilling to accept the expedition’s failure to locate the southern continent. He advised the expedition’s council that if only the ships would sail a little further to the south, the southern continent would be located as expected – exactly where Sarmiento had said the land would be found all along. He was ignored, wisely it might be judged in light of the subsequent privations of the voyage, and instead the ships worked their way about the archipelago. Each landfall was met, sooner or later, with hostility from the indigenous inhabitants, who were treated progressively worse as the months rolled by and dispositions darkened – there still being no sign of the great civilisations, the great continent, or the great store of gold and riches that had been promised. Eventually Mendaña conceded that there was no realistic chance of survival if he established a colony in one of these lands, and so he began the arduous journey back to the Americas.

The voyage was a failure, judged in the following terms by the Licentiate Juan de Orosco in a letter to the King of Spain of 20 March 1569:

In my opinion, according to the report that I have received, [the discovered islands] were of little importance, although they say that they heard of better lands; for in the course of these discoveries they found no specimens of spices, nor of gold and silver, nor of merchandise, nor of any other source of profit, and all the people were naked savages… The advantage that might be derived from exploring these islands would be to make some slaves of the people, or to found settlement in some port in one of them, where provisions could be collected for the discovery of the mainland, where it is reported that there is gold and silver, and that the people are clothed… Of the persons who sailed from the port of Lima, thirty-one or thirty-two were missing, including those who died of sickness, and those who were slain by the Indians in the said islands.\(^{236}\)

---

\(^{236}\) Ibid., p. lviii.
Clearly, from an official perspective, the expedition was a disappointment. Yet, and perhaps surprisingly, there was no diminution of belief in either Terra Australis or the lands of gold spoken of by pagans and Christians alike. Even Orosco continued to discuss the existence of a mainland “where it is reported that there is gold and silver”. What is also interesting is that despite the dearth of riches found on the newly discovered islands, within a few years of their discovery they were being widely referred to (“vulgarly but incorrectly” in Sarmiento’s opinion) as the Solomon Islands.²³⁷ There is clearly an inconsistency here requiring explanation – and that explanation begins with the knowledge that preconceptions are just as powerful as sense perceptions in constructing images of places.

The members of Mendaña’s expedition were hyper-attuned to any sign of gold, to the point where they seem to have interpreted their communications with the natives to say exactly what they wanted to hear. Thus, Mendaña records that upon showing a native gold he responded “‘yaro bocru,’ bocru in his language signifying ‘much’.”²³⁸ And the “Indians of San Christoval say also that there is gold in the rivers of their country, and that the women of Aytoro wear it round their necks in large grains as they find it, but they do not know how to melt it.”²³⁹ Though the human facility to communicate through signs and expressions should not be discounted, it is hard to take this at face value. So many explorers’ accounts of conversations with local inhabitants report that the explorer was able to extract the most precise and remarkable information about subjects of great curiosity (information which inevitably agrees with preconceptions), the explorer having apparently completely overcome the language barriers. Take Columbus, who in his conversations with natives of the West Indies divined that Cuba was “very large and of great commerce” with “gold and spices and great ships and merchants.” How did he know this? Columbus: “I believe that it is so according to the signs that all the Indians of these islands and those that I have with me make (because I do not understand them through speech).”²⁴⁰ To divine the extent of a land as well as the presence of riches, great ships and merchants through gesticulation alone is extraordinary. Columbus had interpreted these

²⁴⁰ Fritze, *New Worlds*, p. 113.
communications to corroborate his preconceptions, preconceptions hopelessly at odds with reality. Similar can be said of Mendaña, who no doubt was earnest in his efforts to communicate with indigenous inhabitants about the presence of gold in nearby islands. Misunderstanding, however, was inevitable. Sarmiento was another gold-seeker who made dubious attributions to indigenous inhabitants: “Here the interpreters, whom they brought from the other islands, escaped, and they took here five or six others whom they brought to Lima; and it was learned from them that there was much wealth in gold, and pearls and spices in those islands and in others near them.”

Just, as it so happened, the very riches the expedition was seeking.

Where Mendaña and his charges differ from Columbus is that though they had interpreted their communications with locals to confirm their preconceptions, they were not so dogmatic as to ignore the geographical reality confronting them every day. So despite possessing dubious articles of information about the presence of gold, no one seemed at all convinced that the islands they had discovered were truly the golden isles spoken of in geographical lore. Thus, it is not Mendaña or any of his charges who fixed this archipelago with the label of ‘Solomon Islands’, but, as Basil Thomson explains, it was a folk label:

We take it that this, like so many other names, originated with the populace, the credulous frequenters of taverns and longshoremen of the quays in Santiago and Callao, listening open-mouthed to the tales of the Inca Yupanqui’s spoils… The suggestion of a listener that this might be the Ophir of Scripture would be eagerly passed from mouth to mouth, firing the imagination of adventurers, and providing a text for the wildest fables of a new Dorado.

The mechanism at play here is evident in all early modern geographical knowledge. Preconceptions form the filter through which data is observed and interpreted in the first instance, after which that data, already mediated, is conveyed to the wider community of

---

242 Ibid., pp. lix-lx.
scholars, merchants, bureaucrats, and the general populace where it is further interpreted according to geographical ideas, expectations, and the latest geographical knowledge (itself a composite of perception and interpretation). In this sense pure, unadulterated empirical data simply does not exist, in which case nor does unmediated geographical knowledge.

It should come as no surprise, then, to find that the disappointments of the 1567 voyage were not enough to extinguish Mendaña’s hopes of profitably settling either those lands he had discovered, or better lands beyond. After years of delay, Mendaña was given command of a second expedition outfitted to settle a colony in the southern Pacific on the best land that could be found. As such, in 1595 Mendaña sailed with four ships amongst which there were a total of 378 people, including soldiers and sailors, as well as men, women and children who were intended to become South Sea settlers. His Chief Pilot was Pedro Fernández de Quirós, a devoutly Christian man, and, importantly, a very fine navigator.243 The details of the voyage make compelling reading; set amidst an environment of conflicting personalities, the expedition was marked by violence, death, naval disaster and great privation from beginning to end. The expedition did not diverge much from the latitudes of the Pacific already broached in the 1567 voyage, and nothing of great geographical interest was discovered. Eventually the fleet – reduced from three ships to one – limped into port at Manilla; a mere hundred or so men, women, and children – their captain not numbering amongst them – survived Mendaña’s final tragic quest to settle the Solomon Islands.

**Quirós**

One might think that the sufferings of such a voyage would be sufficient to cure anyone of the wanderlust that animates an explorer’s imagination, but it rarely is. Explorers are a hardy lot; it is often death or destitution which finally stops them in their tracks, and so it was for Quirós. Fresh from his travails in the Pacific, Quirós gave no thought to respite before requesting commission for a new voyage to discover all the lands which he suspected existed beyond the limits of his own and Mendaña’s voyaging in the southern Pacific. With the Governor of Peru

---

243 It is Quirós’s narrative of this voyage from which we derive most of our information. See Sir Clements Markham, ed., *The Voyages of Pedro Fernandez De Quiros, 1595 to 1606*, 2 vols., vol. 1 (Nendeln: Kraus Reprint, 1967).
unable to grant him this concession – thus forcing respite upon him – Quirós, being a particularly devout Christian, took pilgrimage to Rome. Once there he managed to secure an audience with Pope Clement VIII where he spoke passionately of the “infinity of souls” just waiting to be saved under the grace of Christianity. For Quirós, the prospect of saving all those souls had been made more compelling by what he had seen during his last voyage – men and women who, physically, were not the coarse savages explorers had come to expect, but fine specimens who could almost be European. One boy Quirós encountered in the Marquesas Islands had a startling effect on him:

He came rowing with two others. His eyes were fixed on the ship, and his countenance was like that of an angel, with an aspect and spirit that promised much, of a good colour, not fair but white; his locks like that of a lady who valued them much. He was all that has been said, so that I never in my life felt such pain as when I thought that so fair a creature should be left to go to perdition.244

The Pope, of course, was in the business of souls, and with such powerful testimony before him he readily endorsed Quirós’s proposal, providing him with letters of endorsement to be submitted to the King of Spain and other influential courtiers. From Rome Quirós made his way to Spain to an audience with the King and other members of the royal court. Some were receptive, some were not, but what is notable is that for all the objections Quirós records against his proposal, no-one seemed to object to the notion that greater lands and civilizations existed in the southern latitudes – only to the utility of voyaging to discover, settle, and convert these lands and peoples. Indeed, in the commission authorising Quirós to undertake a new voyage, gained after years of dedicated lobbying, the existence of southern lands was treated as something of a formality:

244 Ibid., pp. 16-17.
All were persuaded, by the proofs and reasonings he submitted to them, that there could not fail to be either a continental land or a number of islands from the Strait of Magellan to New Guinea and Java and the other islands of that great archipelago.245

The whole affair of seeking a commission, being granted that commission, then preparing the men, stores, and vessels for departure took Quirós the better part of a decade. It was not until 21 December 1605 that Quirós set sail with three ships and roughly 150 soldiers and sailors, and a number of Franciscan friars. Quirós was conscious that his expedition should observe a higher order of Christian behaviour than was often the case on long sea voyages. He proclaimed a suite of rules: no cursing or blasphemy; prayer was to be taken every afternoon; there was to be no gambling – sailors having been known to gamble away their provision of water, only to then drink from the sea, go mad, and die. For good measure, it was reinforced in his fourth rule that God’s name not be taken in vain at risk of forfeiture of rations, confinement to irons, or being “fined for the benefit of souls in purgatory”.246 There could be no mistake: Quirós was a Christian seeking souls, not isles of gold.

Quirós struck out into the Pacific at 25°S, some 15° further south than the course charted in his last expedition with Mendaña, but some 5° less than the latitudes in which he had been instructed to sail. He intended to avoid the regions about the equatorial belt which had already been reconnoitred, in favour of plumbing the higher latitudes where there was every possibility – a certainty in the opinion of Quirós and many of his peers – that the southern continent would finally be revealed. However, knowing how quickly a crew could revolt against their command, Quirós decided the best way to ensure a minimum of dissension was to temporarily head north-west, making for the known island of Santa Cruz, from which point the ships could re-victual and then launch their quest anew, “as if we were starting from Lima.”247 But even this course of action did not completely assuage the sailors wrought with doubts about the likelihood of

245 Quoted by Quirós, ibid., p. 167.
246 Ibid., pp. 183-184.
247 Ibid., p. 209. This was roughly in keeping with Quirós’s instructions. (Celsus Kelly, ed., La Australia Del Espíritu Santo: The Journal of Fray Martín De Munilla O.F.M and Other Documents Relating to the Voyage of Pedro Fernández De Quirós to the South Sea (1605-1606) and the Franciscan Missionary Plan (1617-1627), 2 vols., vol. 1 (Cambridge: Cambridge University Press, 1966), p. 39.)
locating land in the Pacific – be it islands already discovered, or lands awaiting discoverers. Unlike cosmographers sitting contentedly in their armchairs back in Peru and Spain, these sailors were no longer so credulous about the fourth part of the world existing: what if it was just a dream; what if Quirós “had deceived the Pope and the King with his stories”? \(^{248}\)

The men were only quieted upon the sighting of land in the Duff archipelago, north-east of the Santa Cruz Islands. There they were able to provision with food and water, and thence set off afresh in search of the southern continent, as Quirós had intended. He set his course southwards, and it was not long before new lands were sighted. Quirós could see no limit to the land’s densely wooded shores, and a mountain chain filled the horizon. Could it be the great South-land?

Without delay a party was landed at the port dubbed Bay of San Felipe y Santiago. With only minimal reconnaissance, a site was chosen; it was to become the base to the Spaniards’ new settlement in the South Seas. Christening the site of their proposed new township New Jerusalem, Quirós then read out six separate proclamations of possession of the land in the names of the Holy Trinity, the Catholic Church, St Francis and his Order, John of God and his Order, the Order of the Holy Ghost, and, last of all, in the name of King Philip of Spain. \(^{249}\)

\(^{248}\)Markham, ed., *The Voyages of Quiros*, p. 218.

\(^{249}\)This was not the first, nor the last, gratuitous religious ceremony conducted by Quirós, and it has led some commentators to ridicule the man for this unusual behaviour: for a Spanish explorer, Quirós seems excessively preoccupied with religious pomp. The problem, however, is one of perception. There is sometimes a tendency to conceive of Spanish explorers under the stereotype of the conquistadores – their concerns predominantly material, their actions driven by motives of personal gain – whereas the reality is that men like Mendaña and Quirós were more a part of the Catholic Reformation than the Conquista. (Spate, *The Spanish Lake*, p. 132.) It needs to be kept in mind that Spanish operations in the western hemisphere came under the legal umbrella of the Treaty of Tordesillas (1494) and the Treaty of Saragasso (1529): papal bulls arbitrated by the Pope according to which Spain was granted rights to new lands in the western hemisphere, and Portugal rights in the eastern hemisphere, delineated from a meridian line 370 leagues west of the Cape Verde Islands. In granting these rights there also came obligations, specifically the obligation to spread the gospel. As Celsus Kelly notes, this helps explain the disjunction we often see between an expedition’s official objectives – emphasis often being placed upon the discovery of lands with inhabitants who can be Christianised and where Spain can establish missionary outposts – as distinct from the subsequent conduct of individuals who, seeking profit above all else, conduct their affairs with wanton disregard for the lives and welfare of indigenous inhabitants. Of course, we have seen that Mendaña was concerned with the presence of gold and other riches, and the same is true of Quirós. But for Quirós especially his interest in resources was pragmatic: he knew that it was only the presence of gold or other commodities which could make repeat expeditions or settlement of a colony in the Pacific viable, as Kelly explains: “The question of finance was an important consideration for the Council of the Indies, the treasury officials and the crews of ships on voyages of discovery. Fleets of ships and the men to sail them, whatever the objective of the expedition, were costly affairs and had to be financed by the royal exchequer. It was understandably expected that ultimately
Having proclaimed possession of this new land (in reality the Vanuatuan island now known as Espiritu Santo), a fundamental question suggests itself. Of what, exactly, did Quirós think he was taking possession: an island, or a continent? If we look at the subject retrospectively and consult Qurios’s memorials written years after the event, the impression given is that Quirós figured it to be the southern continent. But in his actual narrative of the expedition, Quirós never quite declares: ‘this is a continent,’ or much less that ‘this is the southern continent.’ Though he discusses elements of the land’s geography, noting, for instance, how impressed he is by the mountain chain he sees in the distance, the presence of so many natives, how strong the “River Jordan” is, and the abundance of food and resources, he never offers an explicit opinion as to whether the land is a continent. In his proclamation he purports to take possession of all the lands from 15ºS to the South Pole, but whether that is one continent or a series of archipelagos is not clear, his proclamation ever so slightly ambiguous: “I take possession…of all the lands which I sighted and am going to sight, and of all this region of the south as far as the Pole, which from this time shall be called Australia del Espiritu Santo.”

Quirós wanted to believe the land he had discovered was continental, but it seems that he knew better than to make such an elaborate assumption before more fully reconnoitring its bounds.

Still, he was so impressed by the land that he thought it would be the perfect location for a new settlement. It was only after a month of continual conflict and difficulties that Quirós decided he had had enough of New Jerusalem, and was ready to continue exploring the coast. In this, however, his intentions were frustrated. Two attempts were made to reconnoitre the land to the south-east, both abandoned before they had begun: the first stricken by food poisoning, the second afflicted by contrary winds. In the end Quirós never did get to further explore Espiritu Santo. Blown out to sea in the middle of the night, Quirós had not the will nor, perhaps, the authority amongst his dissentious crew, to persist in efforts to return to Espiritu Santo to complete their reconnoitring of its coast, or, more importantly, to reunite with the ship captained

the natural resources and wealth of the regions discovered should defray part of the expense incurred.” (Kelly, ed., La Australía Del Espíritu Santo, p. 20.)

250 Markham, ed., The Voyages of Quiros, p. 251. Quirós later decided to make a clever play on words, changing the name for this land from Australia which was a straightforward rendering of southern, to Australia del Espiritu Santo – thus denoting the land was southern while also giving tribute to the House of Habsburg, the royal dynasty descended from Austria which had married into numerous monarchies, and from which Spain’s King Don Philip hailed.
by Torres which had been abandoned without notice. Cutting their losses, Quirós and his crew made haste, sailing north before deciding to make for New Spain (Mexico), which they reached one year after the expedition had first departed Callao.

As for Torres, he waited patiently at Espiritu Santo for Quirós to return. After fifteen days of waiting, Torres hauled anchor and proceeded to coast around Espiritu Santo’s eastern shore, before sailing south-west to 21ºS. In doing so Torres acquired important evidence that the land was an island, even though he was unable to reconnoitre its western littoral. By sailing south-west Torres continued to steadfastly pursue the main objective of the expedition: to locate the southern continent. But facing difficult weather and as always a crew filled with “ill-will” towards their enterprise, Torres gave up the search at 21ºS and headed north-west. 251 This eventually brought him to the shores of New Guinea where, unable to round the land’s eastern promontory due to contrary winds, he decided to coast its southern shore. In doing so Torres took a huge gamble, as many of the maps of his day showed New Guinea to be connected to Terra Australis. Fortune favoured the brave, and Torres became the first European to cross Torres Strait separating Australia from New Guinea. But did he touch on Australian shores, or at least sight the mainland? Perhaps, but if he did it seems he was unable to distinguish between a main, and the endless islands scattered throughout the Strait. In any case, his discovery was suppressed by the Spanish government, though the existence of a Strait leaked out on a handful of maps in subsequent years.

**Geographical Delusions**

For all the intrigue that surrounds Quirós’s 1606 expedition – only a fraction of which has been mentioned here – it is what unfolds within the confines of Quirós’s own mind that warrants further attention. The issue is one of consistency in his assessment of Espiritu Santo. For example, at one stage in his diary, Quirós rattles off a list of the many advantages of Espiritu Santo, concluding:

---

I am able to say, with good reason, that a land more delightful, healthy and fertile; a site better supplied with quarries, timber, clay for tiles, bricks for founding a great city on the sea, with a port and a good river on a plain, with level lands near the hills, ridges and ravines; nor better adapted to raise plants and all that Europe and the Indies produce, could not be found.\textsuperscript{252}

In the next entry in his narrative, Quirós records his hasty and unhappy departure from that very land.

Back in Spanish civilisation, Quirós regained his fortitude and promptly set about pressing his claims for his discoveries. Over the next seven years, Quirós repeatedly petitioned the King with long and insistent memorials seeking commission for a further expedition to properly settle Espiritu Santo and all contiguous lands. But the question was, is Espiritu Santo island or continent? Though he is not particularly bullish about the matter – notable because he was generally very forthright and emphatic – in several of his memorials to the King of Spain Quirós clearly indicates that he believes Espiritu Santo is a promontory of Terra Australis. Take, for example, a memorial written in 1609, where Quirós suggests that Espiritu Santo is a mainland, while he nevertheless reveals that he does not know this for a fact:

\begin{hangindent}[0.5cm]
\begin{itemize}
  \item The Captain Pedro Fernandez de Quirós has already stated to Your Majesty that in the part to the south is concealed another quarter of the world, and that the discovery he made in it consists of twenty-two islands, whose names are:-
  \begin{itemize}
    \item ...  
    \item Australiia del Espiritu Santo.
    \item Bahia de San Felipe y Santiago.
    \item Puerto de la Vera Cruz.
  \end{itemize}
\end{itemize}
\end{hangindent}

\textsuperscript{252}Markham, ed., \textit{The Voyages of Quiros}, p. 271.
We were anchored, with the three ships, in the port of Vera Cruz, for thirty-six days. The three last names appear to belong to a great land, while its double range of lofty mountains, and that River Jordan from its size appears to furnish evidence of the great extent of the land.\(^{253}\)

A less partial informant may have left the question open, but Quirós so desperately wanted to believe that he had discovered the southern continent that his judgment was no longer sound. In his eighth memorial Quirós writes:

> The greatness of the land newly discovered, judging from what I saw, and from what the Captain Don Luis Vaez de Torres, the Admiral under my command, reported to Your Majesty, is well established. Its length is as much as all Europe and Asia Minor… That hidden part is one-fourth of the world, and of such capacity that double the kingdoms and provinces of which Your majesty is at present the Lord could fit into it.\(^{254}\)

What is remarkable about this statement is that Quirós invokes Torres’s observations as evidence of the continentality of Espiritu Santo. Yet in the very report which Quirós mentions, Torres was unequivocal in reporting that he had pursued the eastern littoral of Espiritu Santo and had then changed course south-west where they sailed to 21°S, with no sign of land. As Torres tells it:

> It was proper to act in this manner, for these are not voyages performed every day, nor could Your Majesty otherwise be properly informed. Going into the said latitude on a SW course we had no signs of land that way.\(^{255}\)

What occupies my thoughts is the spectre of Quirós deceitfully ignoring or burying proof of the fact that Espiritu Santo was an island. The various extant sources which help illuminate the

\(^{253}\) Ibid., p. 487.
\(^{254}\) Ibid., p. 478.
\(^{255}\) Ibid., pp. 462-463. While Torres was unable to reconnoitre the entire coast of Espiritu Santo, he did circumnavigate it in a much wider arc, proving it could not be a continent.
character of Quirós make it clear that although the man was not immune to vainglory, mendacity was never considered by those who knew him to be a part of his constitution. There are no grounds to think that Quirós would consciously deceive the King of Spain. What seems equally certain, however, is that Quirós was more than capable of self-deception. In regards to his missive relating to Torres, Jack-Hinton has commented: “It seems likely that Quirós had advanced to the state of enthusiasm where self-deception led him to regard the unfavourable as favourable.”²⁵⁶ I agree.

Looking at the weight of expectation Quirós carried with him, we see a man who began to lose clarity of judgment by dint of his burden. He had put himself under enormous pressure through his passionate and assured representations to figures no less eminent than the Pope and the King of Spain, as well as to all manner of other influential courtiers, regarding the existence of a great southern land and its millions of heathens. He also faced the burden of disappointing the even greater authority of the Almighty Lord, to whom Quirós had promised these millions of souls. Failure in what had become his life’s work must have been an intolerable prospect; anything less than discovering the southern continent and its innumerable inhabitants was unthinkable. Like his predecessors who were hyper-attuned to the prospect of golden isles, Quirós became hyper-attuned to the prospect of continental land. Clearly the man still had his senses, but his critical judgment was inexorably corrupted by his commitment to a cause that had come to define his life. In this sense I think it unfair to castigate Quirós for intellectual dishonesty when we might more humbly note that he was, simply, human – his skills as a seaman, navigator and geographer unequal to the weight of preconception and expectation which he carried into the Pacific and then back to Spain.²⁵⁷ As a member of Quiros’s crew put it, “there is little doubt that God blinded his understanding so that he should achieve nothing because of his great pride.”²⁵⁸

**Quirós’s Disciples**

²⁵⁷ Jack-Hinton also comments on this subject: ibid., pp. 158-160.
Quirós saw himself as something of a latter-day Columbus, having invoked this comparison in his eighth memorial. He was right in a way – not because he had discovered a new world, but because his life became consumed by self-delusion, and the fact he would go to the grave a great navigator, but would be remembered as a false prophet. But even false prophets have their disciples, and so Quirós his. When Quirós died in 1615, his cause was taken up by the erstwhile friar, Fray Juan de Silva. De Silva had been influenced by Quirós’s notion that there were millions of heathens in the yet undiscovered islands and continents of the Pacific. Based on the Treaty of Tordesillas, Spain had an obligation to bring Christ to these people. It was an urgent duty which could brook no delay. In a 1621 memorial to the King, de Silva wrote:

He solicits, for the First and Third Orders of our Father St. Francis the conquest and conversion to the Holy Gospel of all the Austral Realms and Provinces, which Captain Pedro de Quirós sought to win by means of force and arms and at great expense, in order that in an evangelical way and at no cost whatever to the Royal Treasury they may be brought into the fold of the Holy Gospel and to the obedience and dominion of the Crown of Castile.\(^{259}\)

De Silva’s ambition was venerable, but his cause was a fruitless one. Though the good friar was willing to work cheap – asking for half the funds Quirós had requested – Spain was in dire financial straits. The state could ill-afford to raid her dwindling coffers for yet another expedition into the Pacific in search of lands – lands which, on the basis of the last three disastrous expeditions, could not be expected to yield any immediately exploitable riches. Nevertheless, in the spirit of Quirós, de Silva did not give up. He pressed into service Dr Juan Luis Arias, who wrote a lengthy memorial (circa. 1623) focusing on the importance of evangelising and the value of the lands to be brought under Spanish control. Arias argues for the presence of a wealth of metals, precious stones, pearls, fruits and animals on the basis of latitudinal determinism, invoking the zonal theory of climate formulated by the ancients:\(^{260}\)


\(^{260}\) Dr Juan Luis Arias, "A Memorial Addressed to His Catholic Majesty Philip the Third, King of Spain, by Dr Juan Luis Arias, Respecting the Exploration, Colonization, and Conversion of the Southern Land," in Early Voyages to Terra Australis,
Now it is consequently manifest that this part of the earth is as fertile and habitable as the northern hemisphere, for the south has of necessity the same distribution of zones as the north… And if particular consideration be given to the influences produced on temperature by the constellations belonging to the southern hemisphere, it will be found that there are lands in it, not only as habitable, but much more so than in the other hemisphere.²⁶¹

Perhaps chastened by earlier forays into the Pacific which did not find the southern continent as imagined by cosmographers, Arias also spent considerable time arguing for the more fundamental proposition that there was in fact a southern continent to be discovered. To do so Arias drew upon the theory of equipoisure elaborated by Mercator, concluding: “there is proportionably as great a surface of land uncovered in the southern hemisphere as in the northern”.²⁶² However, like Mercator, Arias gave a confused and confusing explanation of his reasoning, due in large part to his reliance on Aristotelian physics and Mercatorian cosmology, neither of which are sound, and neither of which Arias fully comprehended.²⁶³

---

²⁶² Ibid., p. 15.
²⁶³ Ibid., p. 11.

Arias begins with the assumption that God created the elements and that they existed at the centre of the universe, arranged concentrically. This is a premise which Arias tells us he draws from the Bible, but which he in fact draws from the tradition of Aristotelian cosmology. Nevertheless, working from this basis, Arias argues: “if, when God commanded that the waters should be gathered together, it was to be understood solely with reference to the northern hemisphere, the water in the southern hemisphere would remain as it was, surrounding and covering all, and the whole sphere of water could not be contained beneath one spherical surface equidistant to the centre of gravity, which always seeks to be united with the centre of the whole machine. And thus all the water of the southern hemisphere would be more remote from the said centre than that of the other hemisphere, without being contained in any sinus, and thus would be much higher, and naturally could not contain itself without flowing towards the other hemisphere, until it placed itself in equilibrium with the said centre of gravity; as is plainly gathered from the demonstration of Archimedes, in his work “De Insidentibus Aquæ,” and is manifestly seen in the ebb and flow of the ocean; in which it is observed, that when the water rises above the surface of equidistance from its centre of gravity, it immediately outflows its ordinary limits until it finds its level with that surface; so that the gathering together of the waters was proportional in the two halves of the sphere of earth and water, gathering itself into certain hollows of the earth, which also have their means of correspondence between the two hemispheres. For as the quiet and equilibrium of the parts of the earth and water with respect to the centre of the gravity consist in the equal tendencies of the opposite parts towards the same centre, it follows that the sinuses or receptacles of water in the one half are nearly proportioned in their position and other respects to those of the other. From which it all follows, that in the southern hemisphere there is an uncovered surface of land correspondent, or nearly so, to that which has been discovered in the northern hemisphere.” (Ibid., pp. 11-13.) There are all sorts of issues with Arias’s reasoning here. He subscribes to Aristotelian physics in his ordering of the elements into concentric spheres, while nevertheless believing the earth is
Ultimately, though, whether Arias’s arguments on equipoisure made sense or not was of no great relevance to the subject at hand. Petitions to launch a further expedition into the Pacific were rejected not because there was doubt about the existence of a southern continent, but because Spain could not afford the expense. Terra Australis was still thought to exist, but it would have to be discovered by some other nation of explorers. Arias had alerted the King to the great danger of another nation less holy than the Spanish conquering the region ahead of Spain, mentioning specifically:

Dutch heretics, whom the devil unites for this purpose by every means in his power, most diligently continue the exploration, discovery, and colonization of the principal ports of this large part of the world in the Pacific Ocean, and sow in it the most pernicious poisons of their apostasy, which they put forth with the most pressing anxiety in advance of us, who should put forth the sovereign light of the gospel.264

Well Arias might worry, for the Dutch were indeed on the move, and if the Netherlands was to claim Terra Australis as her own then the life work of Quirós – whose name became synonymous with the southern continent in the early seventeenth century – would be lost to a nation more interested in commerce than Christ. The great irony is that while Arias was absolutely right about the Dutch threat to Spanish interests in the Pacific, it was in fact Quirós’s compelling eighth memorial which helped inspire certain Dutch merchants and adventurers in their search for ‘Terre de Quir’ – the continent of Terra Australis.

terraqueous, ie, the oceans are depressions of the earth’s crust filled with water. The two are completely incompatible. He does not explain where the water engulfing the earth goes after God gathers it together. Does it evaporate? Does it divinely cease to exist? He also assumes the depressions of the earth containing the waters must be equally dispersed across both hemispheres, but does not explain why. Is it because the earth’s “equilibrium” is determined by the equal tendency of opposite parts towards the centre? If so, what if the parts were unequal? The earth would still have a centre of gravity, and would still be stable. Arias’s theory of equipoise is irredeemably muddled.

264 Ibid., p. 2.
Chapter Seven
Dutch Discovery

Neither discovery nor exploration can be examined outside the context of the cultural and intellectual milieu of the discoverers and explorers. Major discoveries – whether they be geographical or not – are made by people who recognize data that do not conform to their preexisting world view.

-- John Allen

The epigraph from John Allen prompts the question: can you discover that which you already know? If an explorer encounters a land, and that land is reconciled with pre-existing cosmographic conceptions of the world, then there is no revelation, no new cognition. Knowledge is bolstered and expanded, but not changed. An act might rightly be considered one of exploration, but the product must be new knowledge for it to be the stuff of discovery. Words are, of course, our servants – not our masters – so discovery can mean whatever we want it to mean. But keeping this distinction in mind will help illuminate the story of the Dutch – a story, it turns out, of both exploration and discovery.

The Dutch, by accident and by design, explored parts of the Australian coastline throughout the first half of the seventeenth century. Initially their exploits were seen to confirm pre-existing knowledge of Terra Australis. They had not discovered anything new – rather, merely confirmed existing knowledge, and added important geographical detail. Eventually, however, those acts of exploration became acts of discovery, for it was realised that the coasts encountered could not belong to the austral lands that sacred writ and expert opinion had divined. Indeed, Dutch discoveries would fundamentally alter the story of austral lands. But which story is that, one may well ask: the story of Australia, or the story of Terra Australis? It is a tricky question, not least of all because my answer is ‘both’, and yet the coming chapters will find me making the seemingly incompatible argument that Terra Australis and Australia are separate geographical entities which are not to be conflated on pain of historiographic damnation.

What I show in this chapter is that in the first half of the seventeenth century the Dutch pursued two objectives. The first was the exploration and ‘better discovery’ of the ‘Southland’ which they had come upon largely by accident to the south of Java. This was the geographical entity of Australia, though for around a decade the Dutch believed that this was the land of Beach, promontory of the much sought-after southern continent. The second objective was to discover the South-land which the Dutch believed filled the southern hemisphere in the higher latitudes, and which, as their geographical knowledge expanded, they realised must be a separate entity to the lands they had already discovered south of Java. This was the geographical entity known as Terra Australis. The stories of these two geographical entities cannot be separated, but as the Dutch soon established, the entities themselves can be. This chapter will tell those stories through the exploits of the Dutch, before I take a step back and assess in Chapter Eight how the wider European discourse of Terra Australis evolved as a result.

Economic Imperialism

For much of the sixteenth century, the Portuguese had enjoyed a near monopoly in South East Asian trade. The beginning of the end to Portuguese ascendancy can be dated to 1595 when a company of Dutch merchants decided to flout the Portuguese monopoly, sending a fleet to South East Asia to buy spice. They returned two years later, having lost one of four ships, and 160 men. But it was the modest cargo of pepper with which they returned that mattered most to the company. When sold, the return was sufficient to cover the costs of the expedition and turn a small profit on the initial investment – even with the expedition’s heavy material and personnel losses. News of this conditional success spread quickly, sparking a ‘spice rush’. Within a year twenty-two Dutch ships had set sail for the Spice Islands. Over a dozen different trading companies were formed, and competition flourished.

---

266 K.N. Chaudhuri, *The Trading World of Asia and the English East India Company 1660-1760* (Cambridge: Cambridge University Press, 1978), p. 19. The exception to this were the Spanish fleets which circumvented the Portuguese rights to exclusive trade in the eastern hemisphere (as delineated under the Treaty of Saragossa of 1529 whereby it was agreed that the Spice Islands were located within the Portuguese hemisphere), by sending vessels through the Straits of Magellan or, more commonly, from central and southern America.

All too predictably, however, the Dutch spice rush led to commercial inefficiencies that damaged the trade for all merchants. Competition meant higher expenditures and lower revenues. The solution to this was an obvious one, already shown to be effective by the Portuguese: the formation of a monopoly. The Dutch merchants and the Netherlands States-General agreed that the merchant companies would merge into a single company, with the States-General protecting their trade in spices with Letters Patent giving the new company a monopoly on all trade with South East Asia prosecuted via the Cape of Good Hope and the Straits of Magellan. And so was born the Verenigde Oost-Indische Compagnie: the Dutch East India Company, or VOC. That in securing their monopoly the VOC only sought exclusive use of the Straits of Magellan reveals how orthodox the notion Tierra del Fuego was a promontory to Terra Australis had become. Had the VOC or States-General suspected Tierra del Fuego could be anything but a part of a southern continent, then almost certainly the VOC’s Letters Patent would have been widened to ensure their monopoly was protected.

The VOC had enough capital to allow them to establish their position in the South East Asian spice trade, rather than just exploiting the trade for short-term gain. By 1608 the company’s directors were boasting that they had 160 ships operating throughout the East Indies, the West Indies, and off the coast of Guinea – a veritable mercantile armada. Supported by a charter issued by the Netherlands States-General granting the VOC broad powers, the company began to act like a state in their creation and enforcement of a VOC monopoly in the trading of spice. As the Englishman Matthew Duke wrote from India in 1619: “Theis buterboxes are groanne so insolent that yf they be suffrfd but a whit longer, thye will make claims to the whole Indies, so that no man shall trade but themselves or by thear leave; but I hoope to see ther pride take a falle.”

The assessment given to the VOC Directors in 1614 by Jan Pietersz Coen, soon to become one of the Dutch East Indies’ most influential early Governor-Generals, paints both an accurate

---

268 Ibid., p. 69.
picture of the VOC’s history till that point, as well as pointing to the nature of VOC economic imperialism to come:

Your Honours should know by experience that trade in Asia must be driven and maintained under the protection and favour of Your Honours’ own weapons, and that the weapons must be paid for by the profits from the trade; so that we cannot carry on trade without war nor war without trade.²⁷⁰

There was more to Coen’s comments about trade and war than just recognition of the realities of mercantilism in the East Indies. Spain and the Netherlands had been at war since 1568, and would remain in a state of war till 1646, a period of ongoing hostility known as the Eighty Years War. A truce on domestic hostilities stood for twelve years between 1609 and 1621, but conflict continued outside European waters. Relations between the two states proved intractable because it was not only the sovereignty of the Netherlands at stake, but the wealth and power of two great mercantile nations. While the war involved traditional military skirmishes, the real battle was not between soldiers on land, but merchants on the seas; it was control of trade through the key European ports, control of the spice and other South East Asian trades, and control of the American commodities being brought back to Europe that determined the strength of the respective states, and would determine the course of the war.²⁷¹ In this context, the VOC and later the WIC (Dutch West India Company) were seen as integral elements of the war effort because of the economic losses these companies could inflict on Spain and Portugal (at that time Portugal was a part of the Iberian Union, under the rule of the Spanish Habsburg monarchs). Targets were sought which could simultaneously increase Dutch revenues, and damage Spanish revenues. This context of economic imperialism is important to this narrative because it informs the decisions the VOC and WIC made across the first half of the seventeenth century, including decisions about the pursuit of Terra Australis.

In the first few years of its existence the VOC could claim no territory within Asia. In the first decade of the seventeenth century the Portuguese and the Spanish were still entrenched in the region. The VOC’s first conquest was the Portuguese fort on Amboina [Ambon], a Moluccan spice island, in 1605. It is against this background that in 1606 the VOC sent an expedition to reconnoitre the lands in the vicinity of the known island of New Guinea. 1606 is, of course, a key year in the stories of both Australia and Terra Australis. It was the year when Quirós made his voyage to Australia del Espiritu Santo, a land which he proclaimed to be the mainland of Terra Australis. Amongst Quirós’s fleet was Luis de Torres; he would continue the voyage of discovery after Quirós had abandoned the expedition, in doing so discovering Torres Strait and perhaps sighting the Australian mainland. What is remarkable is that just a few months earlier the VOC ship *Dufyken* (or *Little Dove*) had preceded Torres, landing on the western coast of Cape York Peninsula, barely 100 miles from Torres Strait. Captaining that ship was Willem Jantszoon.

Though most of the documents relating to this expedition have been lost, most crucial of which is Jantszoon’s journal, the few extant traces to this voyage give the impression that Jantszoon was tasked with exploring the coasts of New Guinea and any contiguous lands, where he would have been on the lookout for new trading markets or exploitable commodities. One may also surmise that rumours of gold in New Guinea and adjacent lands was a chief motivation in launching this expedition at a time when the VOC was still just a fledgling company; if goldfields were found, any capital expenditure would be justified.

In the course of this voyage, Jantszoon coasted the southern shores of New Guinea; as he pushed east he encountered innumerable shoals and small islands, presenting too great a danger of bottoming out or shipwreck to continue east. Jantszoon assumed he had encountered the shallows to a bight – in reality the entrance to the yet-to-be discovered Torres Strait – but unable to confirm this Jantszoon turned south, making his next landfall on the western coast of what is now Cape York Peninsula. He proceeded to chart a small section of the Australian mainland.
(still thinking he was coasting land connected to New Guinea; see Figure 7a) before heading home.272

Figure 7a. 1670 copy of the chart made onboard the Duyfken, showing coasts of New Guinea, as well as a section of the Cape York Peninsula, labelled Nova Guinea. Reproduced in F.C. Wieder, Monumenta Cartographica: Reproductions of Unique and Rare Maps, Plans and Views in the Actual Size of the Originals, 5 vols. (The Hague: Martinus Nijhoff, 1925-1933). Image courtesy of the National Library of Australia.

Jantszoon returned with some significant new data, but it was far from what the VOC had hoped for. His encounter with Australia demonstrated that land existed co-extensive with the legendary lands of Terra Australis, but it also demonstrated that this region held no immediately evident value to a merchant company. As the VOC had no interest in knowledge for its own sake, during the decade following Jantszoon’s fruitless voyage the prospect of further discovering southern lands had to give way to more pressing concerns – namely developing and consolidating the VOC’s monopoly in regions where they already held commercial interests.

The next encounter with an unknown southern geography came in 1616 when Dirk Hartog, pursuing the new route pioneered by Hendrik Brouwer across the Roaring Forties, encountered an island (now known as Dirk Hartog Island) situated off the easternmost point of Australia. The island revealed nothing of value, and so the real import of Hartog’s accidental discovery was in knowing that land existed thereabouts, lest a ship end in wreck.273 This is precisely what happened to the Tryall in 1622, an English ship which underestimated its longitude, subsequently wrecking on rocks (now known as the Tryal Rocks) off the western coast of Australia. During this period a number of VOC ships stumbled across the western Australian coast, though until the bloody episode of the Batavia in 1629 the VOC had avoided shipwreck. It became increasingly clear, however, that there was a significant landmass (or series of islands) which imperilled all VOC shipping using the Roaring Forties seaway. It occurred to the Dutch that these lands could well be part of Terra Australis, though, if they were, first impressions suggested that this region of the southern continent was a land much less profitable than legend and lore told.

Yet as early as 1622 the VOC also contemplated the possibility that the lands encountered south of New Guinea and Java might prove to be part of an insular mainland separate from the larger continent of Terra Australis. In that year Governor-General Coen commissioned a new voyage of discovery (ultimately never embarked) that was to take in these lands and probe further south and east. In doing so he envisaged the possibility that the explorers might “sail round the whole

---

273 Hartog’s ship was named Eendracht, memorialised in the name given on VOC maps to land in the vicinity of his discovery as Eendracht’s Land.
land and emerge to southward." Interestingly, while Governor-General Coen contemplated
the notion that this particular South-land might not be Terra Australis, he also made explicit
mention of the lore tied to Terra Australis: "According to the written statements of Jan Huygen,
and the opinion of sundry other persons, certain parts of this South-land are likely to yield gold,
a point into which you will inquire as carefully as possible."275

Jan Carstensz was issued a more modest commission in 1623. He had three main goals: to
better chart the coasts of northern Australia already known and gather additional details from
contiguous coasts; to better determine whether those lands held valuable commodities,
particularly precious metals; and, to check whether there was a passage between New Guinea
and the land encountered by Jantszoon (see Figure 7b).276 Carstensz was unable to conclusively
determine the latter question, but he was able to be more decisive in his assessment of whether
the 'other New Guinea' was of any promise. By his assessment it was not just unpromising – it
was downright wretched:

The land between 13º and 17º 8' is a barren and arid tract, without any fruit-trees, and
producing nothing fit for the use of man... The natives are in general utter barbarians...
they are utterly unacquainted with gold, silver, tin, iron, lead and copper, nor do they
know anything about nutmegs, cloves and pepper, all of which spices we repeatedly
showed them without their evincing any signs of recognising or valuing the same.277

---

274 Jan Ernst Heeres, The Part Borne by the Dutch in the Discovery of Australia 1606-1765 (London: Luzac and Co., 1899),
p. 19.
275 Ibid., p. 20.
276 The latter question had become a more interesting proposition since information of a Spanish voyage passing through a
strait south of New Guinea had come to light. How the Dutch came into possession of this information is not clear, but
Hessel Gerritsz, official cartographer to the VOC, clearly outlined knowledge of Torres’s voyage on a map of 1622. The
inscription below New Guinea on Gerritsz’s map states: "the north coast of the Papuas with its continuation to 246 miles east
of Maba travelled by J. le Mair, here laid down as they are drawn by the named discoverers, were all held to be parts of New
Guinea. What more of these is found in the Spanish maps, very different from one another, and not fitting well with these
parts, is here left out until more clarity is obtained. These [parts] were sailed into with the yacht of Pedro Fernando de Quirós
about New Guinea on 10 degrees westwards through many islands and dry banks and over 2, 3, and 4 fathoms for full 40
days. Presuming New Guinea not to stretch over the 10 degrees to the south – if this were the case – then the land from 9 to
14 degrees must be separate and different from the other New Guinea." (T.D. Mutch, The First Discovery of Australia: With
an Account of the Voyage of the 'Duyfken' and the Career of Captain Willem Jansz (Sydney: D.S. Ford, 1942), pp. 25-26.)
The 'other New Guinea' was, of course, the Cape York Peninsula.
277 Heeres, The Part Borne by the Dutch, pp. 41-42.
Figure 7b. Hessel Gerritsz, map of the Pacific, made in 1622, though a later scribe has altered the date on the map to 1634. The map commemorates the 1616 voyage of Jacob le Maire, discussed later. You can see part of the coast of the land which we know as New Guinea, as well as a small section of coast south of this land also marked ‘Nueva Guinea’ – the coast discovered in 1606 by Willem Janstzoon. Image courtesy of the Mitchell Library.

---

Thus condemned, there could be no justification to further explore the northern reaches of this South-land, and, accordingly, no further expeditions were commissioned over the following thirteen years.

It was inevitable, however, that accidental encounters with the western coast of Australia would continue so long as the VOC utilised the Roaring Forties. The most significant of these encounters occurred in 1627 when a fleet led by François Thijssen overshot its easting and sighted the western coast of Australia. What makes the voyage remarkable is that rather than correcting course and heading north for Batavia, it was determined (for reasons unknown, as no contemporary records of the voyage have survived) to pursue the encountered coast to the south/east – possibly with the objectives Governor-General Coen had outlined in 1622 in mind: “...you will follow its eastern extension for some time, and finding no further extension to southward, you will not proceed farther east, but turn back.”279 Just how far the coast was pursued is what makes the voyage remarkable: Thijssen and the fleet explored 1000 miles of Australia’s southern coast, reaching as far east as the St Francis Isles (near modern day Ceduna), before retreating for Batavia with thirty less men than with which they had set out.280 Aboard Thijssen’s ship was Pieter Nuyts, a VOC Councillor, and it was Nuyts’ name memorialised on maps depicting this southern coast with the toponym, Nuyts’ Land (see Figure 7c).

---

Figure 7c. Detail from a chart based on an original chart of Hessel Gerritsz produced around 1618, with additional discoveries added to the plate between the years 1628 and 1632. This map provides an excellent summary of the state of knowledge prior to Tasman’s 1642 voyage. From north to south it includes the “Trial” Rocks, considerably displaced from their true location closer to the mainland; “de Wits Landt”, as encountered in perilous circumstances by Gerrit Frederikszoom de Wit in 1628; “Land van d’Eendracht”; “Dirk Hartogs Ree” (Roadstead); “Houtmans Abrolhos” Islands and to their south, in the region of present-day Perth, “d’Edel’s Landt”, discovered during a voyage by Frederik de Houtman and Jacob d’Edel in 1619; “Tortelduyf” Island, discovered by the ship of that name in 1624; “Land van de Leeuwin” (Cape Leeuwin), discovered by the ship of that name in 1622; “Landt van P. Nuyts”, and further east “I. S. Francois” (St Francis Island) and “I. S. Pieter” (St Peter Island”, discovered during François Thijssen’s voyage of 1627. Image courtesy of the National Library of Australia.
With part of Australia’s southern coast now revealed to the VOC, it became clear for the first time that the land of Beach normally shown attached to Terra Australis must, in fact, be a separate landmass – either that, or if a part of Terra Australis it was a Terra Australis vastly different to how Mercator and fellow cartographers had imagined the southern continent. Either way, this information had significant implications. If Eendracht’s Land and Nuyts’ Land did in fact comprise a separate mainland, as suggested by Thijssen’s voyage, then it meant that there might exist a potentially valuable passage into the southern Pacific utilising the trade winds of the Roaring Forties. But if the land was connected to Terra Australis beyond the easternmost extent of Nuyts’ Land, then the riches of the legendary Terra Australis might yet exist in those latitudes. Either way, the new discoveries warranted further inquiry.

**Dutch Competition For Terra Australis**

Though the VOC was the company best equipped and best situated to launch expeditions for the still elusive Terra Australis, before long other commercial interests attempted to capitalise on the unclaimed potential of putative lands in the south. In 1614 the Dutch merchant Isaac le Maire incorporated the Australian Company (Australische of Zuid Compagnie). That same year le Maire won from the Netherlands States-General a decree that anyone who found new “passages, harbours, or lands” would have the right to the first four voyages exploiting them, and he also secured a special charter authorising his Australian Company to visit “Tartary, China, Japan, East India, Terra Australis, and the islands of the South Sea”.281 As the VOC held Letters Patent for exclusive trade in the East Indies prosecuted via the Cape of Good Hope or through the Straits of Magellan, rights to a ‘new passage’ were at the core of le Maire’s new enterprise, for it was only by pioneering a new route into the Pacific that le Maire could circumvent the VOC monopoly. In Chapter Four I mentioned the 1578 voyage of Francis Drake who sighted open seas to the south of Tierra del Fuego. Into the early seventeenth century most people remained ignorant to the significance of this discovery, but almost certainly le Maire became aware of it

---

through maps like Jodocus Hondius’s 1595 world map (Figure 7d). Le Maire saw his opportunity to break the VOC monopoly, and seized it.

**Figure 7d.** Jodocus Hondius, *Vera Totius Expeditionis Nauticae*, 1595, detail. Departing from his peers, Hondius depicts Tierra del Fuego as an island, separated at some distance from Terra Australis. Image courtesy of the Library of Congress.

An expedition was embarked in 1615, led by Willem Schouten along with Jacob le Maire – Isaac’s son. The entire voyage hinged on their discovering a new passage into the Pacific to the south of Tierra del Fuego. If successful, they were then to turn their efforts towards the discovery of two much coveted regions of Terra Australis. First were the lands of Terra Australis which Quirós had sought, and apparently discovered, in the southern Pacific. They expected to find in these lands new trading grounds, as well as valuable natural commodities, of which gold was the most prized. After this they were to sail to the East Indies, where they would turn south and make for the provinces of Beach and Maletur – provinces cartographers
had been depicting as a part of Terra Australis for generations.\textsuperscript{282} For both Isaac and his son Jacob, Terra Australis was no mere hypothesis; Terra Australis was the land already discovered by Pedro Fernández de Quirós. As le Maire recounts in his journal, it was not before reaching the mid-Atlantic and as the spirits of the crew were dimming that he finally announced that their destination was Terra Australis (till that point, a secret). For good measure he read a rousing passage from Quirós’s eighth memorial expounding upon the virtues of the southern continent.\textsuperscript{283} The voyage continued.

Pursuing a new passage into the Pacific, the entrance to the Straits of Magellan was passed by and the Fuegian coast skirted till a break in the land was found on 24 January 1616. At that point, the easternmost tip of Tierra del Fuego could be seen to the south-west; separated from that land by a short stretch of ocean was another land visible to the south-east.\textsuperscript{284} Like Tierra del Fuego, the land to the east was mountainous and rugged, with no end in sight. It was given the name Staten Landt – not Staten Island as it is known today – as le Maire and Schouten wondered if the land they had just discovered was in fact the true southern promontory to Terra Australis. Whether it was or not made little difference to their objective of discovering Terra Australis. It was the Terra Australis of the temperate south Pacific – the Terra Australis of legend and then in more recent times the propaganda of supposed discoverers – which le Maire and Schouten sought.

\textsuperscript{282} Jack-Hinton, \textit{The Search for the Islands of Solomon}, p. 190. Failing this, the fleet was to make for Bantam (a Javan trading port) where they were to offer their services to the VOC (and failing this, to the English) to ship a cargo that would finance their return voyage to the Netherlands. (———, \textit{The Search for the Islands of Solomon}, p. 190.)

\textsuperscript{283} See le Maire’s entry in his journal for 25 October 1615 (le Maire and Duyker, \textit{Mirror of the Australian Navigation}). Thanks to Professor Bob Elson for a translation of this passage.

Once in the Pacific, le Maire and Schouten struck out in the latitudes in which Mendana and Quirós had discovered land. The days passed – the sea-air pregnant with the expectation of discovery – but nothing. Le Maire held his faith, but like the sailors under their joint command, Schouten now began to query whether the southern continent existed. If it did, it was not in the manner after which it had been described – “wee were at the least one thousand five hundred leagues, eastward from the coast of Peru, and Chili, and had not discovered any part of Terra Australis” – and so he figured it more practical to turn north-west so as to sail around New Guinea and proceed to the Moluccas to pursue their secondary objectives.\(^{285}\) Schouten prevailed, but it is clear that Terra Australis nevertheless remained a touchstone for le Maire. Sailing north, the expedition came to the Hoorn Islands (north-east of Fiji) where a rousing reception was afforded by the islanders. Writing in the third person, le Maire comments in his

entry for 22 May 1616: “This adventure so much pleased the patron of the ship, that he said here was the true Terra Australis; seeing that here was found a river of fresh water, many hogs seen ashore, and plenty of other things.” The passage is significant because we see ‘Terra Australis’ being used here not merely as a title, but as a geographical metaphor, in the same way as El Dorado might be invoked. Used thus it is clear that in Jacob le Maire’s imagination ‘Terra Australis’ was no mere label for undiscovered lands; it was, rather, the rubric under which a whole suite of ideas associated with the prospect of southern lands came together: natural riches, biological fecundity, climatic temperance, great civilisations, valuable trading grounds, and so on. It reminds us that the idea of Terra Australis was an altogether richer, fuller concept than the earlier concept of Antipodes which when used figuratively conveyed merely a meaning of oppositeness or inversion.

Le Maire’s scheme ultimately failed to yield the expected bounty from southern lands – but some years later it was judged a good enough prospect for the newly-formed Dutch West India Company (WIC) to take up the scheme. Seeing an opportunity to profit where the VOC had failed to capitalise, in 1629 the WIC commissioned an expedition under the command of Maerten Valck and Johannes van Walbeeck, with instructions to harass Spanish shipping, establish a settlement along the Chilean coast, and, on their return, discover the southern continent in the Pacific. They were to sail by way of le Maire Strait, making sure to avoid the


287 Having given up on discovering Terra Australis for fear of embaying on the southern coast of New Guinea, the expedition made for Bantam, where their reception was decidedly less reverential than it had been at the Hoorn Islands. The VOC’s ruthless Director-General Jan Coen (second in command in the Dutch East Indies until 1619 when he assumed the Governor-Generalship) refused to concede that Schouten and le Maire had discovered a new passage into the Pacific, and on this basis ordered the seizure of the Eendracht and her crew, and forfeiture of the Australian Company’s assets for having breached the VOC’s Letters Patent. (Kerr, A General History and Collection of Voyages and Travels, p. 191.) The Netherlands courts would eventually rule in 1622 that the VOC’s actions were unlawful, and order restitution be paid to the Australian Company. But by that stage it was too late for old Isaac le Maire – let alone Jacob who died as he was being transported back to the Netherlands. The VOC’s charter had been widened to exclude the Australian Company from the East Indies, a region construed to include a huge geographical expanse as requested by the VOC: “the same Australian Company should be excluded from those southern parts situated between the Meridian running along the East point of Ceylon and the Meridian running one hundred mijlen east of the Solomon Islands.” (Le Maire and Duyker, Mirror of the Australian Navigation, p. 24.) Isaac le Maire died in 1624.

288 Though the formation of a Dutch East Indies Company had been contemplated since the beginning of the century, it was only in 1621 – at the expiry of the Twelve Years Truce – that the WIC was given a charter, granting the company exclusive rights to trade in the Americas. The full charter can be read at http://avalon.law.yale.edu/17th_century/westind.asp (“Charter of the Dutch West India Company: 1621”).
Straits of Magellan so as not to infringe the VOC’s exclusive rights to trade via those Straits. Both objectives offered great potential value to the WIC: looted riches of the Spanish silver ships and a Dutch foothold in the lucrative Chilean silver industry, and the whole gamut of untapped riches imagined for Terra Australis.\(^{289}\) However, concerned that they were over-stretching their resources, the WIC administrators of Dutch Brazil cancelled the expedition. Van Walbeeck complained to the WIC Directors:

> Concerning the voyage to the South, the reconnaissance of Chile and the discovery of Terra Australis, to which Your Honours were favourably inclined, I wish passionately to be able to complete that voyage, not doubting that the fruits of such an expedition would very much exceed expectations. However, due to the extraordinary scarcity of funds, a few days ago the voyage was voted off the program for this year.\(^{290}\)

This, however, was not the end of the matter. In 1641 the expedition to Chile and Terra Australis was revived by the WIC, this time to be led by the redoubtable Hendrik Brouwer. Departing from Brazil in late 1642, it meant that at the same time Abel Tasman was making his assault on Terra Australis from the west in the name of the VOC, Brouwer was making an assault on Terra Australis from the east in the name of the WIC. Of course, Tasman’s expedition would be hugely more significant in this regard than Brouwer’s, though the old sea dog did make one final contribution to the story of the southern continent. Possibly suspecting all along that Staten Land was an island, Brouwer followed the prevailing north-westerly winds which pushed his ships to the south-east, forcing him beyond and subsequently around the shores of Staten Land – in doing so proving that the land thought to be a promontory of Terra Australis was actually a minor island.\(^{291}\) Naturally revision of the shores of the prospective

\(^{290}\) Ibid., p. 173.
\(^{291}\) Ibid., p. 174. With Brouwer’s expedition the last in a string of voyages which cast doubt on the southern continent’s proximity to South America, the question suggests itself as to why, between 1521 and 1643, no expedition sought to reconnoitre the coast of Terra Australis in the regions to the south-east and south-west of the promontory of Tierra del Fuego, at a time when either island was still thought to be a part of the continent? The answer is that it was considered that this region of Terra Australis held nothing of commercial or imperial interest. Indeed, the brief forays made onto the shores of Tierra del Fuego had revealed a harsh, unforgiving land. The only thing a coastline in 52° of southern latitude promised was danger and misery – and given exploration in the sixteenth and seventeenth centuries was often funded by merchants and companies, where there was no prospect of profit there could be no justification for exploration.
southern continent ensued – though such a minor transgression did little to dent a cosmography that could still be imagined as existing just over the horizon.

Van Diemen’s Lands

It is against this background of Dutch enterprise and seventeenth century mercantilism that Anthonie Van Diemen, Governor-General of the Dutch East Indies from 1636 to 1645, took up the search for Terra Australis. Documents authored by Van Diemen reveal three different labels – not always used consistently – applied to southern lands: the “unknown South-land”, the “known South-land”, and the “East-land”. The question is, do they refer to three different lands? Not quite. In Van Diemen’s missives, the ubiquitous “known South-land” is a reference to the coasts of Australia which the VOC had already discovered, and which Van Diemen reckoned to be the connected coasts of one large island, or possibly a series of islands. But if the “known South-land” was confirmed as being limited in this sense, and given it had been found to be mostly “barren”, it could not be entertained that this was Terra Australis.

By Van Diemen’s estimation, Terra Australis must yet be found further to the east in the vast unexplored regions of the Pacific, as well as occupying the higher southern latitudes the breadth of the globe. It is this land which Van Diemen refers to in general as the “unknown South-land”, and the south Pacific region of which he specifically refers to as the “East-land”. As for why Van Diemen chose to employ the toponym “East-land” or “Eastern Lands” (“Oost-landen” and “Oosterlanden”) in combination with “South-land”, it is as straightforward as the name itself: the VOC referred to Terra Australis as the South-land (“Suyder landen”, “Zuidlandt” and variant spellings), so, desiring to refer to a specific section of that South-land, Van Diemen coined the name, East-land.

292 For example, see the resolution of Van Diemen and the VOC Council of 1 August 1642. The anomaly of the VOC – specifically Van Diemen – referring to both a South-land and an East-land was highlighted by Michael Ross in Michael Ross, “The Mysterious Eastland Revealed,” The Globe 53 (2002). Ross and I diverge considerably on the question of what all this means, and we also disagree on a number of other points relating to Tasman’s 1642 expedition. For my full treatment of Ross’s arguments and further discussion of Tasman’s 1642 expedition see Stallard, "Navigating Tasman's 1642 Voyage". Andrew Sharp has also drawn attention to the appearance of the unusual toponym, ‘East-land’, in Andrew Sharp, The Voyages of Abel Janszoon Tasman (London: Clarendon Press, 1968).

293 It is interesting to note that in the instructions for Tasman’s later 1644 expedition written in light of the 1642 discovery of part of the coasts of New Zealand, Van Diemen states that the voyage is “destined for the further discovery of Nova Guinea, and of the unknown coasts of the discovered East- and South-lands…” (Tasman and Heeres, Abel Janszoon Tasman's
Van Diemen was eager to explore all potential markets and tradeable commodities, but his imagination was particularly exercised by the prospect of discovering isles of silver and gold, long rumoured to exist in Terra Australis as well as in various Pacific and Asian regions. It is a familiar motif – these lands of gold always being pushed into yet-unexplored territories: the Incan islands of gold in the Pacific, the Golden Chersonese of South-East Asia, Polo’s golden land of Beach south of Java, the Ophir of the Old Testament, and, a rumour Van Diemen pursued with expeditions in 1639 and 1643, the “Gold- and Silver-Rich Islands East of Japan”. Van Diemen figured that if he could find the much sought-after lands of gold thought to be present in Terra Australis, or if he could find new commodities and new people with whom to trade, or even if he could find a passage through or around the South-land affording expedient passage to Chile, the benefit would far outweigh the initial costs and dangers of exploration.

So it was that Van Diemen issued Abel Tasman a commission based on the advice of Francois Visscher (who would accompany Tasman as pilot-major). Tasman was instructed to sail south from Mauritius, in the course of which it was considered possible that he would encounter Terra

\begin{footnote}{\textit{Journal}, p. 147.} The significance lies in the word “ondecte”: discovered. Unlike in all other mentions of the East-land as an unknown, undiscovered land, in 1644 it was considered discovered – an unmistakable reference to Tasman’s discovery of New Zealand. It is also worth mentioning that Van Diemen was not actually the first person to refer to an East-land. When le Maire and Schouten discovered Staten Island in 1616, they found themselves at the entrance to the subsequently named Le Maire Strait, with Staten Island to their east, and Tierra del Fuego to their west. It was at this point that Schouten recorded in his journal: “The 25 [of January 1616:] in the morning we were close by the east land, which was very high and craggy, which on the north side reacheth east south east, as farre as we could see, that land we called States land…” (Schouten, \textit{A Wonderful Voiage Round About the World}, p. 21.) Unlike Van Diemen, Schouten used the phrase ‘east land’ as an adjective, describing the location of the land relative to his ship and his surrounds, not as a proper noun, as he had already dubbed the land States Land. Van Diemen, Tasman and Visscher were all aware of le Maire and Schouten’s discoveries, and almost certainly would have read their journals. Given that the 1616 discovery of Staten Island was subsequently taken as the discovery of a promontory of Terra Australis, it may be more than a coincidence that Van Diemen also began referring to the southern continent which he believed connected up with States Land as the East-land.
\end{footnote}

\end{footnote}

\begin{footnote}{294 The published journal of Cornelis Janszoon Coen, first mate aboard one of the ships of the mentioned 1643 expedition, was titled \textit{Voyage to Cathay, Tartary, and the Gold- and Silver-Rich Islands East of Japan, 1643}. The rumour of golden isles crops up regularly across both the Americas and the Far East. For instance, on 9 September 1622 the Governor of Amboyna, Herman van Speult, wrote to Governor-General Coen: “Some months ago we heard from a moorish priest of lebee that about fifty miles north of Quey and Aroe an island might be found, where gold is…demanded a small chart from him, a copy of which is enclosed…” Governor-General Jan Coen responded to van Speult in a letter of 28 October 1622: “Touching the island situated east of Aroe where according to a certain morish priest gold might be found, it is possible but give only little credence to him; on the proposal of governor Martin Sonck would agree, if it is convenient to dispatch to Quey, Aroe and tenimber…during this voyage it should be possible, better than done by the Duifken, to investigate what lands are in these areas and what might be done.” (Willem C.H. Roberts, \textit{The Dutch Explorations, 1605-1756, of the North and Northwest Coast of Australia} (Amsterdam: Philo Press, 1973), p. 93.)}
\end{footnote}
Australis. If, however, he reached the latitude of 52°-54°S without doing so, he was to turn to the east. Sailing at this latitude Tasman would be well clear of the known southerly limit of Australia in 35°S. The object was to discover the unknown South-land of Terra Australis, rather than reconnoitre the known South-land of Australia. Thus, it was envisaged that sailing at this latitude should at some stage bring Tasman to the coast of Terra Australis, at which point he was to follow the coast, presumed to run eastward or northward. If it turned out that no land existed in this latitude, they would head north upon reaching the longitude of the Solomon Islands. Whether or not Terra Australis was discovered, it was considered that such a voyage could not fail to yield one of two beneficial outcomes: either Terra Australis and its cornucopia of potential natural resources would be discovered, or, failing that, it would at least be proved that a viable seaway to Chile existed utilising the Roaring Forties.

296 The crux of Tasman’s instructions are contained in the following excerpt: “set sail from the Mauritius, shaping your course with the trade-wind nearly southward… until about the Southern latitude of 36 or 38 degrees, when you have got out of the eastern trade-wind, you shall fall in with the variable winds, with which you shall always put about on the best tack for getting to the southward, until you get into the western trade-wind, with which you will sail nearly southward until you come upon the unknown South-land, or as far as South Lat. 52 or 54 degr. inclusive; and if in this latitude you should not discover any land, you will set your course due east, and sail on until you get into the longitude of the eastern point of Nova Guinea, or of the Salomonis islands, situated in about 220 degr. longitude, or until you should meet with land; and when this is the case, whether in the beginning or afterwards when you have sailed more to eastward, you will sail eastward (as before mentioned) along the coasts or islands discovered, following the direction of the same.” (Ibid., p. 132.)

297 The VOC’s expectations for the southern continent are laid out in detail in the prefatory remarks to Tasman’s instructions. They are worth reading as a summary of the lore of the southern continent: “It is well-known that a hundred and fifty years ago only a third part of the globe (divided into Europe, Asia and Africa) was known, and that the Kings of Castile and Portugal (Ferdinandus Catholicus and Don Emanuel) caused the unknown part of the world, commonly called America or the New World (and by cosmographers divided into North and South America), to be discovered by the highly renowned naval heroes Christopher Columbus and Americus Vespuitus, who thereby achieved immortal praise; likewise that about the same time the unexplored coasts and islands of Africa and East India were first reached and discovered by the famous Vasco de Gama and other Portuguese Captains. With what invaluable treasures, profitable trade-connections, useful trades, excellent territories, vast powers and dominions the said kings have by this discovery and its consequences enriched their kingdoms and crowns; what numberless multitudes of blind heathen have by the same been introduced to the blessed light of the Christian religion; all this is well-known to the expert, has always been held highly praiseworthy by all persons of good sense, and has consequently served other European Princes as an example for the discovery of many Northerly regions. Nevertheless, up to this time no Christian kings, princes or commonwealths have seriously endeavoured to make timely discovery of the remaining unknown part of the terrestrial globe (situated in the south, and presumably almost as large as the Old or New World), although there are good reasons to suppose that it contains many excellent and fertile regions, seeing that it lies in the frigid, the temperate and the torrid zones, so that it must needs comprise well-populated districts in favourable climates and under propitious skies. And seeing that in many countries north of the line Equinoctial (in from 15 to 40 degrees Latitude), there are found many rich mines of precious and other metals, and other treasures, there must be similar fertile and rich regions situated south of the Equator, of which matter we have conspicuous examples and clear proofs in the gold- and silver-bearing provinces of Peru, Chile, Monomotapa or Sofala (all of them situated south of the Equator), so that it may be confidently expected that the expense and trouble that must be bestowed in the eventual discovery of so large a portion of the world, will be rewarded with certain fruits of material profit and immortal fame.” (Tasman and Heeres, *Abel Janszoon Tasman's Journal*, p. 131.)
There was, of course, no certainty attendant to any voyage of discovery, even when the object was a geographical entity as richly imagined as Terra Australis. Cosmographers, cartographers, sailors and administrators may all have believed the continent existed, but conjectural imaginings of the continent’s coastlines could never stand for empirical knowledge of a specific littoral. When Van Diemen sent Tasman to discover Terra Australis, the Mercator-derived images of that entity could serve as a rough guide to expectations, but the only information Tasman and Visscher would rely on was the information sourced first-hand from the records of explorers – and there was a dearth of that when it came to Terra Australis. Thus, when Tasman set out he did so with instructions which made contingencies for the southern continent not being found: “if in this latitude you should not discover any land, you will set your course…”

Indeed, Visscher – author of the instructions ultimately issued by Van Diemen – expressly acknowledged that this was a voyage of discovery, not reconnaissance: “one will be enabled to discover the southern portion of the world all round the globe, and find out what it consists of, whether land, sea or icebergs, all that God has ordained there; excepting only the north side of the South-land already known”.

Nevertheless, the value of preconceptions – even when they are acknowledged as drawing on pure conjecture – is that they can be used as a framework in which to formulate an exploratory strategy. In Tasman’s 1642 expedition, this meant that rather than criss-crossing the Southern Ocean in search of land (the strategy employed when Tasman accompanied Matthijs Hendricksz Quast on a 1639 expedition into the northern Pacific), the latitude of ~50°S was settled upon as the general region in which Terra Australis should be pursued. Indeed, in Visscher’s “Memoir touching the discovery of the South-land”, the pilot-major discussed four options that would achieve the goal of discovering the South-land and finding a passage to Chile. Two of those options carried the recommendation that, should land not be earlier encountered, the expedition sail to a southern latitude of 54°S, before proceeding eastwards, be it by open seas or following a coastline. A third option set a limit of 50°S. Twenty years earlier Coen’s instructions for the

298 Ibid., p. 132.
299 Ibid., p. 142.
Haringh and Hasewint yachts under Jan Vos prescribed a similar southernmost latitude: “as far as Latitude 50°.”

Just why Coen, Van Diemen and Visscher settled on 50°-54°S is explained by a number of factors. The most obvious point is that this latitude corresponded to the region where the cosmographically conceived southern continent – as manifested and particularised in the imaginative geography of most contemporary world maps – could be located. Of course, we would make fools of these men if we suggested that they pursued the exact coastline of Terra Australis as imagined on maps: as influential as conjectural cartography was, they were well aware that it was educated guesswork. Accordingly, they did not uncritically believe theorised geographies existed in the exact form and location in which maps depicted them merely because they carried a cartographic imprimatur. At the same time, they certainly were not above using the cartographic orthodoxy as a heuristic device – an assumed position that provided the structure required for a voyage of exploration. There is no more telling evidence of this than the list of “Names and places in the East, possessed and frequented by the Portuguese and the Netherlanders” (1642), a product of the Ten Year Truce between the Netherlands and Portugal concluded in 1641 (a year after Portugal split from the Iberian union with Spain). This document purports to inform:

The whole of the newly discovered South-Land, situated under the longitude from 55 to 220 degrees inclusive, i.e. between the meridians of Cabo Bona Spei and of the easternmost of the Salomonis islands, from the Equinoctial Line to the Antarctic Pole, or between the farthest coasts and islands of the whole Southland on both sides, has lately been first discovered by the Netherlanders, and the whole of it legally taken possession of. No Portuguese ship ever visited that part of the world.

---

Penned before Tasman had returned from his 1642 voyage, this proclamation was pure bluster, anticipating that Tasman would discover the continent of Terra Australis. It is why the region delineated, “from 55 to 220 degrees inclusive”, corresponds with the region that Tasman was sent to explore.

Two other factors fortified this southern limit of 50°-54°S. The first was the knowledge that Staten Land had been found in 54°S latitude, and at the time of these voyages Staten Land was believed to be a promontory to Terra Australis. The second was an entirely practical consideration. Under no circumstances was it foreseen that any land discovered beyond 50°-54°S would possess the climates or the natural resources expected to prove profitable to the VOC. Finding land beyond this latitude was a prospect considered almost as valueless to the VOC as the prospect of finding no land at all, hence Van Diemen’s resolution explaining that the expedition is to “discover and survey in an easterly direction such lands as they shall meet… without, however, running farther south than the 54th degree, even in case they should not find any land there.”

The objective of Tasman’s expedition was not exploration for its own sake, but to win the VOC value. Moreover, once a ship broached such southerly latitudes, they were getting into dangerously frigid climes with notoriously volatile seas, as experience about the Cape of Good Hope and Cape Horn had shown.

**Searching for Terra Australis**

Tasman and Visscher set out with a plan of action based on their collective knowledge of climate, meteorology, winds, seas, geographies, and so on. There is a point in a voyage of discovery, however, where newly acquired first-hand knowledge supplements or overtakes more general knowledge and geographical lore, as John Allen explains:

> At the outset, the explorer has certain notions about the accuracy of his information, and on them he bases his early field operations. As exploration progresses, he may change his views about the quality of his knowledge and may accordingly alter his field behavior.

---

302 Ibid., p. 130.
Such behavior generally reflects the explorer’s recognition of discrepancies between zones of actual and perceived knowledge.\textsuperscript{303}

It did not take long for Tasman and Visscher to reach this point. From Mauritius the fleet sailed south-east until on 6 November 1642 they reached $49^\circ S$ latitude. By this stage, however, all of the officers, including Tasman and Visscher, had become concerned by the multitude of adverse conditions faced. There was the recurrent fog and haze (which made the sighting of unknown lands difficult); constant high seas; periodic storms; plus squalls of hail and snow, coupled with extremely cold temperatures.\textsuperscript{304} Tasman consulted his council of officers, and all agreed that conditions made it hazardous to continue in such latitudes. It was agreed that they were likely to encounter land in their current latitude, which in the prevailing conditions meant an unacceptably high likelihood of shipwreck. On 7 November 1642 Visscher provided Tasman with written advice:

we should stick to the 44\textsuperscript{th} degree S. Latitude, until we shall have passed the 150\textsuperscript{th} degree of Longitude, and then run north as far as the 40\textsuperscript{th} degree S. Latitude, remaining there with an easterly course, until we shall have reached the 220\textsuperscript{th} degree Longitude...\textsuperscript{305}

\textsuperscript{303} Allen, "An Analysis of the Exploratory Process," p. 16.
\textsuperscript{304} Tasman and Heeres, \textit{Abel Janszoon Tasman's Journal}, pp. 7-8. For a Dutch transcription of Tasman’s journal, see Abel Tasman and R. Meyjes, \textit{De Reizen Van Abel Janszoon Tasman En Franschkoys Jacobszoon Visscher in 1642/3 En 1644} (\textcopyright Gravenhage: M. Nijhoff, 1919), p. 84 for Gilseman’s advice to Tasman.
\textsuperscript{305} Tasman and Heeres, \textit{Abel Janszoon Tasman's Journal}, p. 9. Regaining the 44\textsuperscript{th} parallel on 9 November, it was at this point that the search for the unknown South-land was sacrificed and the search for a passage to Chile was begun in earnest, as Helen Wallis has argued. (Wallis, "The Exploration of the South Sea", p. 375.) From both Tasman’s journal and Van Diemen’s missives, it is clear that both men reckoned on the existence of such a passage, and considered it to be of great value. For instance, in a letter to the VOC Directors of 12 December 1642 Van Diemen wrote: “Hardly any serious doubts are entertained as to the possibility of finding a shorter and more commodious route from here to Chili; the safe return of this expedition will bring us certitude as regards this point. Should its result prove such a route practicable, which God in his mercy grant, the Company will be enabled to do great things with the Chilene, and have opportunities, owing to the said new route, to snatch rich booty from the Castilian in the West Indies, who will never dream of such a thing. We earnestly request Your Worships to give your serious attention to this project, and let us have your advice upon it, since we do not exactly know whether the charter of the West India Company extends to Chili, in which case Your Worships, and consequently ourselves also, would by the said charter be prevented from establishing factories in Chili and engaging in mercantile operations there. Meanwhile, in case of success and of the route proving practicable, we shall neglect no opportunity for dispatching a cargo to Chili by way of trial, that we may become assured what can be done for the company’s benefit in this vast and renowned region…” (Tasman and Heeres, \textit{Abel Janszoon Tasman's Journal}, p. 138.)
What is interesting about this is that for cosmographers and entrepreneurs Terra Australis was a lustrous geography of inestimable value; it was to them real, but remote. To Tasman and his crew Terra Australis was also real, but it was no longer remote. As a mariner and explorer, it was not the promise of Terra Australis that exercised Tasman’s mind, but its menace. This is what impresses when reading Tasman’s journal: there is little discussion of Terra Australis as a commercial prospect, but extensive discussion of the potential hazards of new lands.

Conditions improved considerably upon gaining the lower latitudes, and though they were no longer in the most propitious range for finding Terra Australis, the possibility of encountering land was yet a real one. Sailors had a finely honed aptitude for recognising certain conditions or debris as evidence of nearby land, the likes of which might include the presence of birds, absence of swell, drifts of sea-weed, or presence of terrestrial biological material like coconuts and drift-wood. In or about the 44th parallel it was the presence of large quantities of rock-weed which suggested that land of some kind must be nearby. Yet powerful seas continued to swell from the south-east and south-west – considered compelling evidence that no sizeable landmass could be present in the near south. On 17 November 1642 Tasman makes this clear: “Though we observe rock-weed every day, still it is not likely that there should be any great mainland to the southward, on account of the high seas that are still running from the south.” This explains why on the one hand Tasman expressed little expectation of finding a continental landmass along their current heading, but on the other hand anticipated encountering islands.

The southern coasts of a hitherto unknown land were encountered on 24 November. Cartographers and their ilk subsequently assumed the land (now known as Tasmania) was a part of the “known South-land”. Whether or not it was a part of the “known South-land”, the fact the fleet skirted its southern coast meant it certainly could not be a part of Terra Australis. It was not the land which Tasman had been tasked to find, and its discovery raised little enthusiasm from Tasman or his crew. It is worth pausing to consider the latter fact, for it tells us something about the sixteenth century explorer’s perspective. In the modern era, anything resembling a

---

discovery – of an unknown plant or animal, unknown planet, unknown molecule, unknown tribe, unknown subterranean river – is cause for considerable excitement in the discoverer, and is not uncommonly received with some fanfare. Moderns have come to associate discovery as an act of momentousness and just cause for celebration. It has not always been so.

Were Tasman and his crew pleased to discover the land dubbed Van Diemen’s Land? Well, they had been at sea a long time, so they were certainly glad to have come across *terra firma*. But as for seeing the discovery as of any particular import, the sort of thing worth celebrating: no. Van Diemen had sent Tasman on an expedition into unknown waters. Every day that they sailed further, new empirical data was acquired: post-Mauritius, the expedition was making discoveries – adding to the store of knowledge – every inch of ocean they crossed. But discovery was, in and of itself, meaningless. The perspectives of Van Diemen and Tasman, of cosmographers and geographers, of kings and queens, merchants and statesmen, were skewed by the focus on value. Whereas moderns often see value in a discovery for the simple fact that our stocks of knowledge have been augmented, early moderns of the sixteenth and seventeenth centuries were driven – at least in so far as they were interested in cosmography – by commercial imperatives. So here is my point: Terra Australis proved such an important and enduring entity not because it offered the prospect of something new, but because it was an entity not yet possessed which offered value: climatic value, geographical value, strategic value, resource value, trading value. Van Diemen’s Land – as Tasman saw it – was characterised by the following: a difficult climate, formidable forests, black men who fled at the sight of the Dutch, no evident abundance of precious metals or gems, and it was probably part of the barren lands discovered further north and west. It was good to see land, but was Tasman excited by the discovery? No – and nor was Van Diemen when he received Tasman’s report.

Tasman continued east. 12 November 1642, Tasman wrote: “The heavy swells still continuing from the south-west, there is no mainland to be expected here to southward.”307 Yet the following day the shores of New Zealand came into view. This loomed as a much more

307 Ibid., p. 17.
propitious discovery than the encounter with Van Diemen’s Land, for two reasons. One, it was in the southern Pacific, the region considered most likely to produce climates and lands of value. Two, they had discovered the western/northern coastline of this land, so, unlike the southern coast of Tasmania, it could conceivably be part of a larger landmass stretching to the south and east. For the discovery to be of value it was not essential that it be proved a profitable trading ground or source of commodities; what mattered was whether it marked the discovery of a promontory of Terra Australis – for if it was confirmed that Terra Australis did exist in the southern Pacific then the desired benefits could be sought and presumably discovered further afield.

Tasman’s initial assessment was that the coasts were probably part of the “unknown South-land”:

we gave to this land the name of Staten Landt, since we deemed it quite possible that this land is part of the great Staten Landt, though this is not certain. This land seems to be a very fine country, and we trust that this is the mainland coast of the unknown Southland.308

Over the following days Tasman’s judgement vacillated. Upon entering a large bay, Tasman expected to “find a passage to the open South Sea” proving the lands were islandic; but the passage (which does in fact exist) was not pursued.309 He reinstated his initial assessment, but upon observing the tide running from the south-east, he recorded that “there was likely to be a passage through, so that perhaps it would be best, as soon as wind and weather should permit, to investigate this point…”310 For reasons not articulated in the surviving documents of this voyage – perhaps due to the threat of Maoris, perhaps because of shortage of victuals, or perhaps because of the difficult conditions that New Zealand waters present – Tasman did not settle the

---

309 Ibid., p. 21.
310 Ibid., p. 22.
question, pursuing the western coast of New Zealand’s north island rather than persist in the attempt to locate a passage that would take them into more southern waters.

When Van Diemen received news of this, he was incensed by what he considered to be a lack of diligence on Tasman’s part. Not discovering any trading grounds or commodities was one thing, but failing to conclusively determine whether the land was islandic or continental meant, in effect, that the status quo remained unchanged. The existence of Terra Australis in the southern Pacific had been neither proved nor disproved. Looking back on the actions of Tasman from a modern perspective, it is apparent that this was yet another key junction in the narrative of Terra Australis. Had Tasman resolved the question as to whether New Zealand was a mainland – in reality, of course, it is comprised of two large islands – it would have been difficult to persist with the imagined continent of Terra Australis. But he did not. This meant that cosmographers and cartographers could appropriate the coasts of New Zealand into the geography of the southern continent.

In the narrative of Terra Australis, then, Tasman’s 1642 expedition was a landmark for two reasons. One, it proved that the “known South-land” was indeed a land of limited extent, Tasman’s route delineating a region within which the land’s borders must exist. Concomitantly, by sailing across a vast stretch of the Southern Ocean from Mauritius to New Zealand at a latitude of 49°S before retreating to around 40°S, it had been shown where Terra Australis did not exist – thus shattering core elements of the vestigial Mercatorian image of the southern continent. The flip-side to this was that for all that Tasman’s expedition took away from the imaginary southern continent, it also offered up a new and tantalising empirical fragment: proof positive of a significant body of land in the southern Pacific.

**Conclusion**

For all of the resources that the search for Terra Australis had consumed, the VOC and the other Dutch companies had nothing to show for it – or at least nothing of practicable value. Yet if it had been up to Van Diemen there would have been no suspension of exploration; he would have persisted until Terra Australis was discovered, or it was conclusively proved that no such land
exists. As it was, Van Diemen died in office in April of 1645, leaving a rich legacy as a patron of exploration. Mercifully, it was after he died that a missive from the Netherlands-based VOC directors reached Batavia. The directors explained that they no longer saw value in the expensive expeditions in search of Terra Australis, nor in voyages pursuing more detailed knowledge of the southern lands already discovered. Their letter instructed Van Diemen to discard all future expeditions with southern lands in mind: the company did “not expect great things from the continuation of such explorations, which more and more burden the Company’s resources”.

Van Diemen would never read this letter, but it would serve as an absolute injunction for his successors, who refocused the VOC’s attention on East Indies trade, and abandoned all thoughts of further exploring either known or unknown southern lands. Little matter: over the course of the first half of the seventeenth century the Dutch had added an enormous store of new data to geographical knowledge. The question was, how would this empirical knowledge – knowledge incompatible with the contemporary visions of Terra Australis – affect belief in the southern continent?

With each article of empirical data appropriated as a part of the southern continent, Terra Australis gained verisimilitude, tangibility, and ultimately validation. But when that same data was denied Terra Australis, shown to belong to another geography that was not the sought-after southern continent, Terra Australis may have temporarily lost a little of its verisimilitude – perhaps, even, a measure of what made it seem attainable – but it did not automatically lose validity. To be sure, repeated disappointments made map-makers increasingly wary of the cartographic embarrassment of having a continent sailed through – but what the continent had previously gained from appropriated data could not be stripped from the geographical entity nearly so easily as it had been added. Hence, when Magellan discovered Tierra del Fuego, the gains to the idea of a southern continent were enormous; it was the turning point where what had been a cosmographic conjecture became a part of the known world. It made the southern continent real. In time, Tierra del Fuego was shown to be just an island, as was Staten Island – the land which replaced Tierra del Fuego as a promontory of the southern continent. But neither

---

revelation could nullify the belief that had come to be stored in Terra Australis. Coastlines could be revised, expectations dampened, but once given life an imaginative geography like Terra Australis becomes a pliable, reflexive idea that transcends the fragments of information which help make such an entity seem real in the first place. Merely eroding shores or banishing an entity to beyond the horizon is rarely enough to invalidate the very notion of the geographical entity existing. Only great violence done to the substance of an imaginative geography – to the characteristics that define the entity and make it worth believing in – will test the validity of conceptualisations and test the strength of belief in that idea.

And, indeed, great violence was done to the substance of Terra Australis in the wake of the VOC voyages touching on the shores of Australia, culminating in Tasman’s 1642 expedition. Traversing the 40th parallel south of Australia, Tasman sailed right through the continent so many cartographers depicted on their maps, finding open seas where land was expected. Knowledge of Tasman’s expedition eventually circulated – the implications enormous. In one fell swoop any prospective promontory of Terra Australis south of Java and New Guinea was excised. Where other voyages had merely eroded the imagined coasts of Terra Australis and forced cartographers to depict that land beyond the horizon of knowledge – the essentials of the geography intact – Tasman’s discoveries necessitated a comprehensive remodelling, as cartographers had little choice but to amputate the equivalent of at least ten million square kilometres from the archetypical Mercatorian continent. It was very nearly the death knell for Terra Australis, but advocates refused to let this cosmographic fiction wither away as a hopeless fantasy. Despite the increasing ranks of doubters, despite the overwhelming evidence of non-existence, and despite the cosmographic gymnastics remodelling required, tradition proved more potent than ugly fact. It was no longer the same lustrous continent bequeathed by Finè and Mercator, and it was no longer as fervently lusted after in the imaginations of sundry men; but Terra Australis was a fundament of cartography and cosmography, and it would rebound time and again from acts of empirical falsification until explorers could prove – outright – that a southern continent could not exist in any meaningful fashion. Terra Australis ailed, but endured.
Chapter Eight

Terra Australis Adrift

The difficulty of assimilating exploratory accounts into the general store of knowledge results from problems fitting the new information into recognized geographical frameworks. If an explorer returns with information that contradicts or subverts strong and generally accepted concepts, his data may have little immediate effect in creating more accurate regional images. For example, despite the failure of mariners to discover a sea-level passage through the poleward margins of the North American land mass, late sixteenth- and early seventeenth-century theoretical geographers and mathematicians continued to hold to the concept of what Peter Martyr called ‘indrawing seas...great straits which provide a passage for the waters flowing from east to west,’ and persisted in using astronomical computations to prove that such a passage existed between the Atlantic and Pacific oceans. And despite ‘increasingly convincing evidence’ about the true character of the Arctic Ocean provided by explorers during the nineteenth century, many reputable and intelligent scholars remained obdurate in their belief in an ‘open polar sea.’ In both instances geographical theories delayed acceptance of knowledge resulting from exploration; these theories, although inconsistent with new exploratory information, were too prevalent in geographical thought to be drastically or rapidly changed.

As I began telling the story of the southern continent many pages – and many centuries – ago, the distinctive geography of Terra Australis was, literally, ages from being realised; what we found in its ancient and medieval precursors was a nebulous, mutable concept of a southern continent in the form of the Antipodes. It was only once the Antipodes were manifested in the verisimilitudinous guise of Terra Australis that the southern continent became a core fiction within the canon of cosmography. Maps like Jodocus Hondius senior’s striking world map of 1602 (Figure 8a) in which we find the southern continent depicted in arch-Mercatorian style ensured the diffusion of knowledge of this geographical entity. Indeed, the southern continent was no mere idea, broadly understood; Terra Australis was considered a geographical entity in its own right, attracting generations of advocates – some of whom eventually set out to discover that land. It was, of course, not there, a fact that cartographers and scholars reconciled with a mix of pragmatism, obscurantism, and sheer confusion.

-- John Allen\textsuperscript{312}

\textsuperscript{312} Allen, "Lands of Myth", pp. 52-53.
Figure 8a. Jodocus Hondius senior, *Orbis Terrae Novissima Descriptio*, 1602. This map is part of a set that Hondius engraved for Jean le Clerc. Image courtesy of the Princeton University Library.
Advocates and Sceptics

Of those who did have their doubts about Terra Australis in the first half of the seventeenth century, many lacked the resolve to banish the entity from the pages of their books or maps. It was, simply, too valuable and well-established an artifact; if omitted from a map or an account of cosmography, an author was left with a void, be it an intellectual void marring the completeness of a cosmography, or an aesthetic void on maps sold to the rich, powerful and curious. Even before the dilemma of Tasman’s voyage, there were doubters. The Englishman, William Grent, was one, describing in a textual accompaniment to his world map of 1625 the world as a composite of four parts – Africa, Asia, Europe, and America – without any mention of Terra Australis.\footnote{Shirley, Mapping of the World, p. 337.} He did discuss Terra Australis in a cartouche on his map, but he made clear his scepticism:

This South Land undiscovered commonly knowne by the name of Terra Australis incognita or Magellanica cannot certainly be affirmed continent or Ilands only some few coasts thereof have appeared to Seamen driven thereupon by extremity of weather whose names are set downe, the rest must remaine clouded in obscuritie till future times and further discoveries produce them to light.\footnote{William Grent, A New and Accurate Map of the World, Drawne According to the Truest Descriptions, Latest Discoveries, and Best Observations that have been made by English or Strangers (London, 1625).}

Still, Grent could not do without the facility of Terra Australis, which had become for map-makers an aesthetic and intellectual crutch. Thus we find Grent has provided a full and detailed depiction of the coast of Terra Australis, including numerous annotations where he offers vignettes of information to support the prospective mapping (see Figure 8b). For instance, the recognised landfall of Tierra del Fuego is retained as a part of the southern continent, shifted west of the actual Fuegian islands. The inscription reads: “Terra del Foga, or the Land of smoake was so called from the frequent flashes of fire, a[n]d abundance of smoake, appearing to the first discoverers: heerof.” Other inscriptions along the coast of Terra Australis provide enough information to fill out the spaces of the map, while giving the impression of knowledge.
At the same time as Grent was begrudgingly depicting the familiar coastlines of Terra Australis, the image of Terra Australis was being modified or removed from the southern hemisphere on the maps of certain of his Dutch counterparts. Jodocus Hondius senior – whose world map appears at the beginning of this chapter – died in 1611, but his work was continued by his sons Henricus and Jodocus junior. As information about the VOC’s encounters with Australia began to filter into mainstream discourse in the mid-to-late 1620s, the two brothers – up-and-coming map-makers of growing prominence – chose different tacks when it came to revising the cartography of the southern continent. Virtually all of the VOC information then available leaked via maps, which, as discussed in Chapter Five, were relied upon by geographers and cartographers as a chief source of empirical data. In the case of the VOC discoveries, it was the maps produced by the official cartographers to the VOC, Hessil Gerritsz, and his successor from
1632, Willem Blaeu, which were the wider cartographic and geographic communities’ chief sources of information about the new discoveries in Australia.\textsuperscript{315}

Jodocus junior, the elder brother by two or three years, responded to the data concerning the discovery of land in the region where the province of Beach was normally depicted, by erasing the southern continent in its entirety, to be replaced with the meagre outline of actual discoveries on Australia’s western coast – the first printed world map to do so.\textsuperscript{316} As is evident in Figure 8c, the southern continent normally filled a huge amount of space in world maps, making its absence in Jodocus’s 1625 map as striking as its presence in his earlier efforts.

Jodocus’s response was unusual for the time. Henricus opted for the more judicious approach favoured by most cartographers, gradually revising his geography of the southern continent, rather than banishing all conjectural geography from his maps. In Polus Antarticus, a map that would be reproduced in numerous states and by numerous cartographers across the seventeenth century (Figure 8d), Henricus provides an up-to-date rendering of the VOC’s discoveries along the western and southern shores of Australia, but he opts to also include a fractured rendering of Terra Australis: a second, larger land that does not seem to be connected to New Holland.

Figure 8c. Jodocus Hondius junior, *Nova Totius Terrarum Orbis Geographica Ac Hydrographica Tabula*, Amsterdam, 1625. Despite the borders of Hondius’s map being as rich and full as any ornate world map of the period, the cartography within the two hemispheres is presented in a more austere style than was then common. The presence of so much non-descript space in the southern hemisphere is especially striking—given audiences of world maps were used to busy-ness within their maps, not to mention a complete cosmographic conception of the earth. The only geography to replace Terra Australis is the western coasts of Australia, represented here as Eendracht’s Land.
Figure 8d. Henricus Hondius, *Polus Antarcticus*, *circa* 1637. Image courtesy of the National Library of Australia.
Examining *Polus Antarcticus*, it is evident that the coastline of Terra Australis fractures at longitudes to both the west and east of Australia; Henricus has not attempted to connect the empirical data with the southern continent, thus establishing a clear delineation between the empirical and the conjectural. To the east of Australia (on the left of the map) it is also clear that the coastline of Terra Australis is, in fact, comprised of an island chain, rather than an unbroken littoral. The impetus for this island chain came directly from Henricus’s father, who pioneered such a feature on his 1602 world map (Figure 8a).\(^{317}\) Henricus’s adoption of the island chain is especially interesting because this ‘new’ geography still conforms to the old: Henricus has conflated the notion of an island chain with the South-land coastline – so while there is no actual mainland coast, the island chain exactly conforms to the layout of the former South-land coastline as depicted in his own maps and those of Abraham Ortelius. The island chain is, then, a fragmenting and islandification of what was the South-land littoral.\(^{318}\) A close examination of *Polus Antarcticus* reveals that Henricus has also turned the South-land coastline beneath Africa into a second extensive island chain. This is a technique employed to convey doubt. Island chains, coastal fragmentation, unbounded landmasses and shadowed or faded coastlines were all employed as cartographic indicators of geographical uncertainty, the equivalent of the literary question mark or ellipsis. Henricus’s map is, then, a compromise: between empiricism and aesthetics, between knowledge and expectation. Henricus perpetuates Terra Australis, but he is no advocate.

\(^{317}\) The southern continent depicted on Jodocus Hondius senior’s world map is much as we found it on Mercator’s world map of 1569, including inscriptions detailing the data supporting key parts of the geography. However, one major change to Mercator’s cartography is evident: the Pacific coastline of Terra Australis is now buttressed with a chain of islands stretching from New Guinea to the tip of South America. This is a feature which Hondius repeats on a second map he engraved for Jean le Clerc, drawn in the style of Ortelius’s 1589 map of the Pacific, *Maris Pacifici*. To the best of my knowledge, Hondius is the first cartographer to depict such an island chain shadowing the southern continent’s littoral. (Stallard, "Navigating Tasman's 1642 Voyage," pp. 33-37, and notes 52-57.)

\(^{318}\) Although it is obvious enough to the naked eye, detailed comparisons between the coordinates of Henricus’s island chain and the South-land coastlines in both Ortelius’s famous world map of 1570, *Typus Orbis Terrarum*, and Henricus Hondius’s own world map of 1630, *Nova Totius Terrarum Orbis Geographica ac Hydrographica Tabula*, confirm that Henricus’s ‘Galego’ island chain and the customary Pacific coast of the South-land are identical in latitudes and longitudes. I date the beginning of Henricus Hondius’ islandification of the Pacific Southland littoral to 1630 when Henricus’s first world map for the Mercator-Hondius-Janssonius Atlas was engraved. Careful comparison between the islands spread across the 10\(^{th}\) to 20\(^{th}\) parallels, that is, of Hoorinse Eylanden, Eylandt van Goede Hope, and Verraders Eylandt, with the South-land coast of Ortelius reveal the islands to have been configured to conform to the former South-land coast which has been erased to 22°S. In *Polus Antarcticus* (some seven years later) Henricus has extended this process. See J. Keuning, "The History of an Atlas: Mercator-Hondius", *Imago Mundi* 4 (1947); Gerard Mercator et al., *Atlas, or, a Geographicke Description of the World, Volume 1* (Amsterdam: Theatrum Orbis Terrarum, 1968, original 1636); Stallard, "Navigating Tasman's 1642 Voyage," pp. 33-36.
As Dutchmen, the Hondius brothers and their fellow cartographers had an advantage over cartographers from other states when it came to sourcing the latest empirical data concerning the southern hemisphere – thanks, of course, to the Netherlands-based VOC. But maps and books circulated widely throughout Europe, and so it was not long before cartographers in other states started to draw on the VOC data. In João Teixeira’s atlas of 1630 the discoveries of the Dutch are combined with the fantastical writings on the southern continent of Teixeira’s Spanish countryman, Manuel Godinho de Erédia. In a number of maps and manuscripts, Erédia details the supposed existence of a land south of Java, which he calls Lucaantara: “Lucaantara should be the general name for the peninsula on which were situated the ports in the Kingdoms of Beach and Maletur”.319 Thus Teixeira’s southern continent – seen in its entirety in Figure 8e – includes two notable inscriptions (see Figure 8f for a detail of this). The first reports the discovery by the Dutch of Eendracht’s Land. The other – at the northernmost promontory to Teixeira’s southern continent – designates that region (in translation) “Nuca Antara, discovered by Manoel Godinho de Eredia in the year 1601.”320 Teixeira seems to have no qualms about conflating the Dutch discoveries with established belief in a southern continent, though the bold cartography of his atlas may belie the very same doubts entertained by many of his counterparts who were uncertain about the relationship between the emerging geographies of Australia with the long-standing conceptions of Terra Australis.

320 For more information on Eredia’s delusions about India Meridional, see W.A.R. Richardson, "A Cartographical Nightmare - Manuel Godinho De Erédia's Search for India Meridional" (paper presented at the Proceedings of the International Colloquium on The Portuguese and the Pacific, University of California, Santa Barbara, 1993).
In Melchior Tavernier’s world map of 1628 (Figure 8g) you will find both a good rendering of the results of Carstensz’s survey of the Gulf of Carpentaria in 1623, and a conventional rendering of Terra Australis. The coastlines very nearly meet, but Tavernier has left a small gap separating the two coasts – the coastlines left hanging in expectation until the obvious assumption that they are one and the same littoral can be put to proof.\textsuperscript{321} This was the very question that had vexed the Dutch explorers who had won the information now filtering out and finding its way onto maps. When Frederik de Houtman – discoverer of the Abrolhos islands on Australia’s western coast – detailed his discoveries to Prince Maurice in a letter of 7 October 1619, he described how he “suddenly came upon the Southland of Beach.”\textsuperscript{322} Twenty-three years later the idea of Beach continued to frame ideas of geographies south of Java, Francois

\textsuperscript{321} Shirley, Mapping of the World, plate 246 (entry 323), p. 346.
\textsuperscript{322} Heeres, The Part Borne by the Dutch, p. 14.
Visscher contemplating how “one might easily sail eastward along Staten landt, and in this way come to a perfect knowledge how far the said Staten landt extends; sailing on the said easterly course as far as the longitude of the Salomonis islands, in which way one would become acquainted with all the utterly unknown provinces of Beach”.

Thus map-makers like Tavernier and his fellow cosmographers and geographers waited for more and better particulars that would shed light on the abiding question of the relationship of the VOC discoveries with Terra Australis. Those better particulars finally came with the 1642 voyage of Tasman.

---

Figure 8g. Melchior Tavernier, *Charte Universelle de Tout le Monde*, 1628, western hemisphere, detail. Image courtesy of the British Library.

---

**More and Better Particulars, More Confused Cartography**

The VOC had no intentions of publicising the results of Tasman’s expedition, and so his journal was locked away for decades.\(^{324}\) However, Joan Blaeu – having inherited his father’s role as official cartographer to the VOC – had access to the data gathered by VOC expeditions: charts, surveys, logs, and so on. So while the VOC may have suppressed Tasman’s journal, they did let news of his discoveries leak out to the international community through the maps Blaeu produced and sold on the consumer market. One map in particular helped circulate news of Tasman’s discoveries: Blaeu’s *Nova Totius Terrarum Orbis Tabula*, 1648.\(^{325}\) There is no reference to Terra Australis on this map, but it does include the coastlines of two interesting new geographies: Tasmania, and New Zealand. With Tasman’s information about Van Diemen’s Land (Tasmania) at his disposal, Blaeu was encouraged to give the emerging outline of Australia a proper designate as a land in its own right. Hitherto just annotated with names applicable to the various landfalls on Australia’s shores – Eendracht’s Land on the mid-west coast, Nuyl’s Land to the south, Arnhem’s Land to the north – Blaeu now stamped the continent with a single designate, in doing so declaring the landfalls all a part of the one insular mainland: Hollandia Nova – or New Holland.\(^ {326}\)

This information was, therefore, available to those enterprising enough and curious enough to piece together a cosmography of the southern latitudes. However, it was some time before Blaeu’s depiction of New Holland started regularly appearing on other cartographers’ maps. It seemed that many were simply uninterested in refining or expanding their knowledge of this area of the globe, and their maps reflect that indifference. That the information was accessible is without doubt, as we do find representations of Tasmania and New Zealand on a select few maps, like Joseph Moxon’s 1655 world map (in the style of Edward Wright’s map of 1599) where an accomplished rendering of the VOC discoveries to 1644 is evident (Figure 8h).

---

\(^{324}\) Schilder, *Australia Unveiled*, p. 197.

\(^{325}\) Only coloured copy known is held by the Ransom Center (Kraus Map Collection). All twenty plates are reproduced in Wieder, *Monumenta Cartographica*, v. 3.

Figure 8h. Joseph Moxon, *A Plat of all the World*, 1655. Image courtesy of the Norman B. Leventhal Map Center.
But it was the better part of two decades before Tasman’s discoveries became standard features on maps of the southern hemisphere. Even then some cartographers were cavalier in their approach to the geography of New Holland. Numerous cartographers continued to copy Nicolas Sanson’s 1651 map of the world (Figure 8i), following his unusual depiction of the VOC discoveries. Nicolas Sanson is widely recognised as the father of the new movement in ‘scientific cartography’ that emerged around the middle of the seventeenth century. This movement saw map-makers forsake much of the ornamentation and embellishment which made earlier maps so beautiful and so peculiar, in preference for more restrained representations which were self-consciously plain. The geographies were to speak for themselves. Sanson’s world map of 1651 is an early archetype of this cartographic vogue; it contains no border decorations whatsoever, and within the two hemispheres there are no cartouches, nor any narrative or symbolic figures – no ships, no sea monsters, no waves, just geographies surrounded by unembellished space.

Yet amidst all the self-conscious plainness, there is Terra Australis, dominating the southern latitudes, even if modestly presented as a coastline and nothing more. There is, as yet, no sign of Tasman’s discoveries, though some of the earlier VOC landfalls on Australia’s western and southern shores are represented in an oddly shaped landmass that stands apart from the larger southern continent. Sanson seems to have been unaware of the Dutch knowledge of Arnhem Land or Cape York in Australia’s north, though he was certainly aware of the stories of Beach, the northern promontory of his Australian land thus labelled. When Giovanni Battista Nicolosi copied Sanson’s map in 1660 (Figure 8j), he reproduced without alteration Sanson’s southern geographies. He did, however, update the map by including Tasman’s discoveries in Tasmania and New Zealand, as well as information about Arnhem’s Land in Australia’s north.
Figure 8i. Nicolas Sanson, *Mappe-Monde, ou Carte Generale du Monde*, 1651. Courtesy of the British Library.
Figure 8j. Giovanni Battista Nicolosi, world map, 1660. Image courtesy of the National Library of Australia.
As can be seen in the detail of Nicolosi’s map (Figure 8k), the product of his scavenging traces from other maps is his reproduction of a hopeless mélange of geographies – a series of fragments conforming to no overarching logic. There is the coastline of Terra Australis, marked both in the east and the west. There is the coastline of New Zealand, a land which is in such proximity to the stretch of Terra Australis labelled Terra d. Quir that it seems they must enjoy some relationship, but what? Then there is Arnhem’s Land, a fragment connected neither to Beach in the west, or Terra Australis in the east. The result is a confused montage of knowledge new and old. It brings to mind Frank Lestringant’s description of Renaissance maps:

The map did not reveal the state of the world at a given moment, but a mosaic of data whose chronology might extend over several centuries, the whole being assembled in a floating space. These driftings, at the same time spatial and temporal, conferred a dynamism and a perspective value on the map. On it were depicted not only lands actually known, but also those remaining to be discovered.\textsuperscript{327}

\textsuperscript{327} Lestringant, \textit{Mapping the Renaissance World}, p. 113.
Reconciling all of this data could be a difficult task. Allain Mallet attempted it on a map of 1683 (Figure 8l), making a prospective connection between the coast of New Zealand with the Solomon Islands, for good measure labelling the entity Terre de Quir. This made poor geographical sense – given the Solomon Islands had always been considered islands – but it satisfied the cosmographic urge to order fragments of geographical knowledge into a holistic understanding of the whole earth. This process showed no sign of abating in the seventeenth century, nor, for that matter, in the eighteenth. So long as knowledge of the southern latitudes was incomplete, the idea of Terra Australis helped people order and visualise the globe.

Figure 8l. Alain Mallet, Isles de Salomon, 1683. Image courtesy of the National Library of Australia.
As for the southern continent supposedly discovered by Quiros – Terre de Quir – it remained a touchstone for many of the cosmographic attempts to reconcile Tasman’s discoveries with the idea of a southern continent. Because New Zealand was proximate to the region of Terra Australis which Quiros had supposedly visited, it remained an open question whether or not New Zealand was in fact a part of the larger southern continent. In 1694 Sir John Narbrough put the issue thus:

Ann. Dom. 1609, 1610. Pedro Fernandez Giros a Portuguese, and Captain Ferdinand de Quir a Spaniard, do both affirm, That they sailed at several times above 800 Leagues together on the Coast of a Southern Continent, until they came to the height of 15 degrees of South Latitude, where they found a very fruitful, pleasant, and populous Country... This vast Tract of Land perhaps may be one side of, or may belong to, Jansen Tasmen's Land, Van Diemen's Land, Zelandia Nova, Hollandia Nova, Carpentaria, and New Guiney...

Even though Tasman had proved that the mainland now known as New Holland was insular and could not be connected to New Zealand or Terre de Quir, geographical confusion, ignorance, and incompetence meant some writers remained unsure as to the relationship between these lands. As we are told in a tract of 1699: “By Terra Antarctica, we understand all those unknown and slenderly discover’d Countries towards the Southern Parts of the Globe; the chief of which do bear the Names of New Guinea, New Zealand, New Holland, and (which may comprehend these and all the rest) Terra Australis incognita.”

It may have been stripped of a share of its lustre, but the southern continent never lost its cosmographical relevance. The desire to order the chaos of geographical fragments is palpable, with Terra Australis the rubric most easily employed to achieve this – though as already indicated, applying a cosmographical logic to the confusion of fragments often failed to make good geographical sense.

---

328 John Narbrough, An Account of Several Late Voyages & Discoveries to the South and North (London: 1694), p. x.
329 Pat Gordon, Geography Anatomic’d: Or, the Compleat Geographical Grammar. Being a Short and Exact Analysis of the Whole Body of Modern Geography, after a New and Curious Method (Cornhill: Robert Morden and Thomas Cockerill, 1699), p. 375.
Take the map of Australia published by Melchisedech Thevenot in 1663 in his book, *Relations de divers voyages curieux* (Figure 8m). Thevenot has copied the details from Blaeu’s 1648 map, including partial coastlines of Tasmania and New Zealand. He has also adopted Blaeu’s label of Hollandia Nova, with which he labels what we would today recognise as Western Australia. Further east – amidst a canvas of blank space between the coastlines of Tasmania, New Zealand, and New Guinea – Thevenot has embellished his map with an additional label: “Terre Australe d’écouverte l’an 1644”. Just what is intended here is something of a mystery. The explanation that would make the best sense is that Thevenot was labelling the as yet unknown eastern portion of Australia as Terre Australe – which would also accommodate the inscription stating Terre Australe was discovered in 1644. However, it is all too possible that Thevenot – thoroughly muddled as to the cosmographical possibilities of this jigsaw of
coastlines – had no real understanding of Tasman’s expeditions, and figured that New Holland, Tasmania, New Zealand and Terre de Quir further east were all connected. If such a scenario seems improbable, then observe Emanuel Bowen’s copy of Thevenot’s map (Figure 8n), published in a book by John Campbell in 1744. The inscription above the label of Terra Australis states:

The Reader is desired to observe that nothing is marked here but what has been Actually discovered which is the reason of the white Space between New Holland and New Zealand, and again between New Zeland and New Guinea which make the South and East sides of Terra Australis; It is also requisite to observe that the Country discovered by Ferdinand de Quiros lies according to his description on the East side of this Continent directly Opposite to Carpentaria which if Attentively considered will add no small weight to the Credit of what he has written about that Country and which has been very rashly as well as very unjustly treated by some Critical Writers as a Fiction; whereas it Appears from this Map of Actual Discoveries, that there is a Country where Ferdinand de Quiros says he found one: And if so why not that Country be such a one as he describes?

Still: even with such an explicit geographical account, I am uncertain as to what Bowen had in mind when he inscribed this map. Could it be that Bowen – and, indeed, Thevenot before him – haphazardly applied the label of Terra Australis to multiple entities considered insular from one another? Certainly other cartographers and cosmographers did this, as, for example, on Guillame Del’isle’s maps. Or was Bowen truly confused, believing that all those geographies were somehow connected?330 If so then it is ironic that in the text of John Campbell’s book in which Bowen’s map appears, Campbell is very clear-minded about the relationship of these different geographies:

330 In 1647 Bowen seems to evince a much more sound understanding of these same geographies in the book attributed to him: Emanuel Bowen, A Complete System of Geography, 2 vols., vol. 2 (London: William Innys, et al, 1747), pp. 772-783. However, while Bowen was responsible for the maps in this book, its true author was in fact Stephen Whatley (based on Herman Moll’s original Compleat Geographer). (Glyndwr Williams, The Great South Sea: English Voyages and Encounters 1570-1750 (London: Yale University Press, 1997), p. 253.)
On the Whole, therefore, it appears, there are three Continents already tolerably discovered, which point towards the South Pole [Africa, Australia, and South America]; and therefore ‘tis very probable there is a fourth, which if there be, it must lie between the Country of New Zeland, discovered by Captain Tasman, and that Country which was seen by Captain Sharpe and Mr. Wafer in the South Seas; to which Land therefore, and no other, the Title of *Terra Australis Incognita* properly belongs.\(^{331}\)

---

\(^{331}\) John Harris and John Campbell, *Navigantium Atque Itinerantium Bibliotheca, or, a Complete Collection of Voyages and Travels... Now Carefully Revised with Large Additions, and Continued Down to the Present Time*, 2 vols., vol. 1 (London: T. Woodward et al., 1744), p. 331. Campbell (who substantially rewrote the text of the same name published by John Harris in 1705) notes earlier in this treatise that “…it be agreeable to Reason, that there must be a Body of Land about the South Pole, to counterpoise those vast Countries about the North Pole” (p. 174).
Hiatus

Campbell’s notion that New Zealand may form part of the southern continent – a continent whose best prospects still lay in the South Pacific – made fair geographical sense, and in the eighteenth century there are a number of maps and cosmographies which forward this conception of Terra Australis. But as the seventeenth century drew to a close, and as the discipline of cartography became more and more geared towards visual austerity as well as empirical verifiability, Terra Australis became a much rarer sight on maps. As Denis Cosgrove has explained:

Extraneous spatial calculations and navigational or topographic information might surround the map or occupy open oceanic spaces, but they are not allowed to interfere with the accurate delineation of coasts and islands, while unknown or unexplored spaces are acknowledged as such and left blank rather than exploited for iconographic elaboration. Representations of geographical distributions of phenomena across cartographic space are similarly sober, in the style known to historians of cartography as ‘plain representation.’

It was, ironically, French cartographers (pioneers and leaders in the new style of ‘plain representation’ or ‘scientific cartography’) who remained most likely to depict conjectural geographies alongside empirical constructs, but for the most part map-makers avoided the embellishment intrinsic to conjectural geography, in line with the new milieu. By the close of the seventeenth century, Terra Australis was no longer an essential artifact of cartographies. What is more, Terra Australis all but disappears from the itineraries of explorers, a rare breed in their own right in the latter half of the seventeenth century. After Tasman’s voyages, the Dutch abandoned their quest to further discover the known and unknown South-lands, and there was no other company or nation willing to take up their mantle. So while to the retrospective observer it is obvious that the riddle of the Antipodes was on the verge of being answered –

---

333 Schilder, Australia Unveiled, p. 204.
requiring perhaps one or two voyages of discovery to probe the eastern coast of Australia, fully reconnoitre the extent of New Zealand, and traverse the 50th parallel – in the wake of Tasman’s voyages exploration languished in a torpor lasting over one hundred years. Had interest in Terra Australis run its course? Was Terra Australis no longer the dynamic, vibrant geography that had transfixed generations of interested minds? Had the southern continent become irrelevant?

Not quite. Despite the growing number of sceptics, Terra Australis always had advocates who continued to see value in the prospect of discovery, and cosmography seemed fuller and more comprehensible with the southern continent in play. The real problem was not interest or relevance, but rather the pragmatics of exploration.

The simple reality of the Age of Discovery was that exploration, though undoubtedly the product of curious minds, was inexorably constrained by the fiscal obligations of commercialism; the promise of immediate or future gain was a principal rationalisation for any voyage, thus an exploratory commission depended on expectations of profit. Van Diemen had gotten away with his schedule of expeditions on the auspices of profit-seeking – be it a passage to Chile, or southern lands rich with minerals and tradeable goods, and people with whom to trade. But for all the hype and rumour, no voyage in search of Terra Australis, nor any accidental encounter with the coasts of New Holland, had yielded anything of commercial or even strategic value – while at the same time they had cost dearly in both lives and money. So it was bitter experience that proved there was no profit to be had in the short-term, which is why the VOC Directors resolved to forbid any further exploratory expeditions in the wake of Tasman’s efforts.

334 While it is unarguable that the majority of voyages commissioned throughout the Age of Discovery were profit-based, depending on the proclivities of the commissioning power one could add Christian conversions, strategic knowledge, and imperial strategy to the ubiquitous financial interests when defining profit. Rarely, though, did profit mean adding to geographical knowledge for knowledge’s sake alone. Exploration based on noble and disinterested motivations of knowledge-seeking has historically been seen as a late-blooming practice of the Enlightenment – a conceit much criticised over recent decades, for good reason. In nearly all Enlightenment voyages of discovery one finds the machinations of empire-building thinly veiled by earnest teams of scientists and savants who perform a real and important role, but one which is anterior to the commissioning body’s objectives of obtaining strategic knowledge and claiming militarily or commercially useful lands.
Thus, as much as people still hoped to find lands of plenty in Austrlia del Espíritu Santo or Terra Australis, pursuing established ventures made much better commercial sense. Charles de Brosses – one of the most prominent intellectuals of the late eighteenth century – echoed this understanding in his comments on the decline in southern voyaging, while also presaging the means by which this torpor would be lifted:

Merchants have nothing in view but a quick return of profit. It is not to be expected from them, that they should engage in great and extensive attempts, where the success is uncertain and the profits at a distance. The first expenses (if not immediately reimbursed) generally check their ardour, and send them back in despair to the ordinary commercial channels of their accustomed trade...

But, to succeed fully in the design we are now proposing, means more powerful must be employed than those of any private adventurer, or trading company. Some potent Sovereign, who has himself enlarged views, who has able ministers to assist him, whose people are powerful at sea, and who possesses extensive and solid establishments near to the Line, is the only proper person to finish this great undertaking.

In the subsequent chapter we will see how it did indeed take “some potent Sovereign” (though not necessarily the French sovereign de Brosses had envisaged) to sustain the multiple voyages of discovery needed to discover the truth of Terra Australis. That, however, was still the better part of a century distant. For the meanwhile, it was the Spanish and the Dutch who were best positioned to prosecute any further expeditions for southern lands, with the Dutch entrenched in the East Indies, and the Spanish in South America. These were the two nations who had done the most to discover Terra Australis, but in the late seventeenth and early eighteenth centuries Spain was in political and financial decline, and the Netherlands-based VOC had a sprawling

---

empire to consolidate, while at the same time facing stiff competition from other powers, and declining revenues in the East Indies. The only other exploratory voyage commissioned by the VOC in this period was more a salvage mission than a voyage of discovery. It was led by William de Vlamingh (1699), tasked with touching upon the western coast of Australia to see if they could find any survivors from the *Ridderschap van Holland*, a VOC ship that had gone missing somewhere in the Indian Ocean in 1694, with no further sight of the ship or her crew of some 350.338

In general, the European powers were too busy waging economic and imperial warfare amongst each other to bother with voyages of discovery to conjectural lands that had already evaded generations of explorers.339 As Daniel Baugh argues, South Seas exploration was constrained by:

> the conservatism which enveloped Spanish and Dutch policy, concentration of English and French resources on colonial development in North America and the West Indies, and the task of improving trading opportunities in India. Perhaps the most important diversion of all was the peculiarly unsettled condition of seventeenth-century European politics, marked by an intensive yet highly unstable process of state building in the two emerging maritime powers, England and France; for this reason those countries were strongly inclined toward short-term goals. Furthermore, throughout the first half of the eighteenth century all European governments tended to concentrate on the immediate requirements of European rivalry and the balance of power.340

The hiatus in austral exploration did not mean, however, that belief or interest in Terra Australis completely evaporated. In particular, the idea of a southern continent continued to offer

---


cosmographers the promise of cosmographical completeness, a role which was gradually reinforced by the understanding that there ought to be an equality of land in the two hemispheres. As John Ray wrote in 1692:

In the present terraqueous Globe, the *New World* which lye between the two great Seas, and almost opposite to our Continent, doth in some measure counterpoise the Old, and take off a great part of the advantage, which by reason of its preponderancy, it might other wise have. Moreover, I am of Mr Brierwood’s Opinion, that there may be, and is a vast Continent toward the Southern Pole opposite to *Europe* and *Asia*, to counterpoise them on that side; nay, I do verily believe, that the Continents and Islands are so proportionably scattered and disposed all the World over, as if not perfectly and exactly, yet very nearly to counterballance one another; so that the Globe cannot falter or reel towards any side…

Nevertheless, in the late seventeenth century, the discourse on Terra Australis was considerably different to the discourse of the past two centuries. The urgency, the excitement, and the passion which had characterised the books and petitions and maps of earlier advocates for a southern continent had been replaced, for the most part, by austral apathy. Terra Australis was no longer lusted after by explorers; it has disappeared from many maps, and on those where it did appear it was no longer the arresting central geography of Mercator and his ilk, instead a subsidiary geography – fragmented, faint, often only implied: present with a question mark attached. And in books concerned with history, geography and exploration it was often given short shrift, sometimes dispensed with in a list of geographies, sometimes completely absent. To be sure, Terra Australis did not disappear from discourse; but it became context rather than focus: it was cosmographical and historical background, it was common knowledge, but it was not the prominent geography of the early seventeenth century.

There were, simply, more interesting and more important things going on: the colonisation of the Americas, the fascination with the prospect of a North-West Passage (another equally grand

---

imaginative geography, but one that still seemed attainable), and, above all else, the mercantile contest amongst the European nations. Sidelong within cosmographical discourse, Terra Australis is ever-present, but not prominent. William Dampier’s fabulously popular travelogues produced around the turn of the century are a case in point. Dampier began his maritime wanderings around the globe in 1679. His first book is an account of his adventures aboard the ship, Cygnet, from 1686 till his return to England in 1691. His writings are perhaps best remembered for the interesting detail he provides concerning his time spent on the western coast of Australia. At a couple of points he contextualises his narrative with reference to Terra Australis. For example, Dampier argues for the utility of a sea route round the tip of South America and then utilising the “Easterly Trade Wind” to cross the Pacific, in order to access the Spice Islands. He then digresses:

And to speak my thoughts freely, I believe ‘tis owing to the neglect of this easy way that all that vast Tract of Terra Australis which bounds the South Sea is yet undiscovered: those that cross that Sea seeming to design some business on the Peruvian or Mexican Coast, and so leaving that at a distance. To confirm which, I shall add what Captain Davis told me lately, that after his departure from us at the Haven of Ria Lexa… he went, after several Traverses, to the Gallapagoes, and that standing thence Southward for Wind, to bring him about Terra del Fuego, in the Lat. of 27 South, about 500 leagues from Copayapo, on the Coast of Chili, he saw a small sandy Island just by him; and that they saw to the Westward of it a long tract of pretty high Land, tending away toward the North West out of sight. This might probably be the Coast of Terra Australis Incognita.342

The southern continent remains for Dampier – and consequently his audience – a useful cosmographic tool to help order fragmented geographies. It allows him to contextualise his comments, though the subject of the southern continent is not a focus of Dampier’s attention in

342 William Dampier, A New Voyage Round the World… (London: James Knapton et al, 1697), p. 352. Like many of his peers, Dampier was ignorant to the details of Tasman’s 1642 voyage which proved New Holland could not be joined to a larger southern continent.
its own right. In fact, as Glyndwr Williams argues, had Dampier been asked to explain and make sense of his cosmographic understanding of the southern hemisphere, he most likely could not have.\(^{343}\) His loose understanding and application of the notion of Terra Australis to southern geographies belay a commonplace uncertainty about the relationship of various real and imagined southern geographies. That hardly mattered, though, as order was not dependent upon truth.

Later, Dampier discusses his impending arrival on Australian shores:

> Being now clear of all the Islands, we stood off South, intending to touch at *New Holland*, a part of *Terra Australis Incognita*, to see what that Country would afford us.\(^{344}\)

*New Holland* is a very large tract of Land. It is not yet determined whether it is an Island or a main Continent; but I am certain that it joyns neither to *Asia, Africa*, nor *America*…\(^{345}\)

As a travelogue, Dampier’s work is part geography, part narrative, in which the cosmography of Terra Australis plays a fleeting role. He did not talk-up the prospects of discovering the still unknown southern continent, but what he did do was make New Holland real by giving his readers detail, colour, story – all the things lacking from the dry cartographic representations of the VOC discoveries.\(^{346}\) By presenting New Holland as a real place he helped restore interest in the Pacific: he made southern geographies seem real again – attainable, even.

So in Dampier’s travelogues Terra Australis is present, but not prominent. The same is true of a multitude of novels set in a fictional southern continent, published by English, Dutch and French authors throughout the late seventeenth and eighteenth centuries. Nearly all of these novels are

---

345 Ibid., p. 463.
thinely disguised political polemics. Terra Australis proves the perfect setting because it captures both the real and the fantastic: it is a geography unknown but certainly within the realm of possibility, which means that a story of shipwreck and adventure on its shores provides the requisite dose of realism, with the latitude to send the stories’ protagonists on fantastic adventures. Aping the vogue for travelogues, many of these novels profess that they are true accounts of maritime mishaps. Denis Vairasse d’Allais wrote in his History of the Sevarites (1675):

Among all remote Countries, there is none so vast, and so little known, as the third Continent, commonly called, Terra Australis. It is true, Geographers give some small and unperfect descriptions of it, but it is with little knowledge and certainty; and most of their draughts may be suspected, and look’d upon, as imaginary and fictitious. Sure it is, that there is such a Continent; many have seen it, and even landed there, but few durst venture far in it, if any there were; and I do not think that any body hath made any true description of it… This History will supply that defect.

“This History” is, of course, fiction. Thus it prompts the question raised by Oskar Spate: “What have all these wild romancings to do with Pacific History?” Simply, they reinforce interest in the unknown and little-known regions of the southern latitudes. Or as Spate answers:

On the surface, in the sense of actual events in the Pacific, very little; and yet they were part of the critical thinking of the century which in so many fields – science, economics, industry, politics – laid the foundations of our modern world. Side by side with more sober geographical speculations, they were a part of what Terra Australis, the South Sea,


the Pacific meant in the minds of men ill-informed indeed, but eager to grasp its reality or to make of it an ideality.349

While Terra Australis was very much a diminished version of the Mercatorian archetype, and while interest would never again reach the fever-pitch of the preceding century of activity, the Pacific generally and Terra Australis in particular continued to exercise the imaginations of not just novelists, but savants, entrepreneurs, and mariners.

For instance, Woodes Rogers was a privateer who never quite reached the fame of his contemporary, William Dampier. He wrote an account of a privateering voyage that saw him circumnavigate the globe between 1708 and 1711. It seemed logical to Rogers that the great expanse of the Pacific was broken up by more land than had yet been discovered:

I have often admir’d that no considerable Discoveries have yet been made in South Latitude from America to the East Indies… I give this Hint to encourage our South Sea Company, or others, to go upon some Discovery that way, where for outh we know they may find a better Country than any yet discover’d, there being a vast surface of the Sea from the Equinox to the South Pole of at least 2000 Leagues in Longitude that has hitherto been little regarded, tho’ it be agreeable to Reason, that there must be a Body of Land about the South Pole, to counterpoise those vast Countries about the North Pole. This I suppose to be the Reason why our antient Geographers mention’d a Terra Australis Incognita, tho’ very little of it has been seen by anybody.350

However, a general interest in the still mysterious, still largely unknown Pacific (which happens to be the area in which the most promising regions of Terra Australis were imagined) did not translate into a renewed flurry of activity. The romance of unexplored regions and undiscovered geographies was no match for cold pragmatism. Exploration for the southern continent just did

not meet the commercial imperatives driving the decision making of companies and states alike. Though the Age of Discovery had not yet run its course, this period – late seventeenth, early eighteenth century – was the nadir for maritime exploration.\footnote{Baugh, "Seapower and Science: The Motives for Pacific Exploration", pp. 1-2.}

But though commercial pragmatism was the order of the day, there are still a few glimpses of the fervour which Terra Australis continued to generate in advocates. The Dutch made one last attempt on Terra Australis. This time, however, it was an expedition sponsored by the WIC whose last voyage with Terra Australis in mind had been launched in 1642 under Hendrik Brouwer, seventy-nine years earlier. There had been at least one Dutchman with his sights set on Terra Australis since then. Arend Roggeveen had been ambitious enough to gain a charter in 1675 that authorised exploration and trade in the unknown regions of the South Seas, but his ambition had not been matched by investor dollars, and his scheme was abandoned, but not forgotten. In 1722, with the financial support of the WIC, an expedition inspired by Arend finally did set out to discover the unknown lands of the South Seas – led by Arend’s son, Jacob.\footnote{Jacob Roggeveen and Andrew Sharp, The Journal of Jacob Roggeveen (Oxford: Clarendon Press, 1970), pp. 1-4.}

The plan for Jacob Roggeveen’s expedition was elemental. Instead of hugging the American coast after rounding South America and making for the equatorial latitudes, he would strike out into the Pacific after making the Chilean coast. If there was a southern continent in the temperate latitudes of the South Pacific, he would find it. And Roggeveen expected that find it he would, based on reports of land or indicators of land contained in accounts of expeditions by Willem Schouten, William Dampier, and Lionel Wafer. Roggeveen takes up the story as he approaches the never before seen Easter Island [Paasch meaning Easter in the original Dutch]:

But when we had approached this land to a small distance off, we saw clearly that the description of the sandy and low island (both by Capn. William Dampier, following the account and testimony of Capn. Davis, and by the diarist Lionel Wafer, whose journal of this and other discoveries the said Dampier by printing has made world-renowned, and
included as a distinguished adornment in his own book, comprising all his land and sea journeys) was not in the least similar to our observation, further, that it likewise could not be that land that the said discoverers testify had been seen 14 to 16 miles from them, and stretched beyond their sight, being a succession of high land, and concerning which the said Dampier judges and deems it to be the point of the unknown Southland… Therefore it is to be concluded easily from the above that this discovered Paaschland will be another land, which lies further east than that land which is one of the reasons for our expedition, or else the discoverers in their descriptions, both verbal and written, could very easily have been convinced by falsehood.\footnote{Ibid., pp. 91-93.}

Roggeveen seems to have had absolute faith in the accounts of his predecessors. When he departed Easter Island he was quite resolute that the southern continent (or at least a land that presented the aspect of a mainland) would shortly be found, as described: “Therefore gave signal to our consorts to change course and steer west, deciding that our hope would shortly be satisfied by a good discovery with a high and widely extending region of land.”\footnote{Ibid., p. 106.}

Reading Roggeveen’s journal the impression of earnestness is striking. He approaches the information provided by Schouten and Davis (through Dampier and Wafer) with unquestioning good faith; when his expectations turn to disappointment he feels betrayed by his predecessors. After a week of easting with no sign of Terra Australis and no sign of land that could have been so mistaken, Roggeveen is ropable:

After the dispersal of the meeting, at noon the course was set north-west, being then clear, fresh water, and the content of which resolution contains the following. But before coming to this, I must in a few words observe that one must be greatly astonished at finding people who contrive to become famous through the general publication of their writings in which they seek to establish embellished lies as clear truth, as applies to a so-called Captain Davis, William Dampier and Lionel Wafer, as this Dampier narrates in his
Voyage-Descriptions, folio 266, and in the description of the isthmus of America, folio 84, written by the said Wafer, with which gem the said Dampier adorns and decorates his book; for since we have discovered no land from Copayapo [a settlement in Chile] westward for a distance of 658 miles, where we are today, except the Paasch Island, it accordingly follows that this is the coast of the unknown Southland according to the opinion of the said Dampier, depending on the witness of Davis its discoverer, and stretched north-west out of sight, which however the aforesaid Wafer limits to 14 to 16 miles, but both testifying that it was high land. Now when the narration is compared with our observation, nothing else remains to be said but that these three (for they were English) were as much robbers of the truth as of the goods of the Spaniards. 355

Having put to proof Davis’s Land and found it wanting, Roggeveen continued his voyage, subsequently dispatching another trace which had been held as a possible indicator of a mainland in the southern Pacific:

For as our voyage in this sea comes to an end through the discovery of the reason which had moved Capn. Willem Cornelissen Schouten to conclude that land must be to the south, because he sailed in level and smooth water without hollow swells from the south as on the previous days, which reason lies in the meeting of all these islands or reefs which we to our great danger and harm have discovered… 356

So yet another expedition for Terra Australis had ended in failure, Roggeveen indignant that the deception of a southern continent had lured him into a fruitless voyage. Yet, perversely, Roggeveen’s own expedition would become grist to the mill for advocates of Terra Australis. With his own journal lost until 1836, it allowed second-hand accounts to make of the voyage what they would. The best known account was by Carl Friederich Behren (first published in

355 Ibid., p. 108.
356 Ibid., pp. 140-141.
Dutch in 1732).\textsuperscript{357} Though Roggeveen had completely given up on Terra Australis, his discovery of the Tuamotu islands was bastardised to fit a familiar mould:

They soon after saw two other islands of very large extent, one of which they called \textit{Tienhoven}, and the other \textit{Groninguen}; which last, many of their officers were clearly of opinion, was no island, but the great south continent they were sent to discover; with respect to which, however, our author suspends his judgment, because the proofs on either side seemed to him convincing. As for the island of \textit{Tienhoven}, it appeared to be a rich and beautiful country, moderately high, the meadows exceedingly green, and within-land adorned with trees. They coasted along the shore for a whole day, without coming to the end of it. They observed, however, that it extended in the form of a semicircle towards the island of \textit{Groninguen}; so that after all, it is very probable, that these two countries, that were at first taken for islands, may, in reality, be lands contiguous to each other, and both of them part of the \textit{Terra Australis incognita}...\textsuperscript{358}

Passed through the filter of knowledge, data all-too-often becomes amenable to expectation. The truth, it seems, was not nearly so easily attained as empiricists like Roggeveen would have it.

\textbf{Conclusion}

Terra Australis was but a mirage on the receding horizon, but there was no doubting that this geographical entity had life in it yet. Tasman’s voyage permanently retired the southern continent in its Mercatorian guise, but changes to its prospective bounds did not determine the more fundamental ontological question: the question of existence. It was not just that Terra Australis was an interesting or a valuable geography, or simply an historical artifact that people had become accustomed to, though it was all those things; it was that Terra Australis remained a palimpsest: a dynamic vehicle that was malleable to the needs and expectations of each

\textsuperscript{357} Ibid., p. 17.
\textsuperscript{358} This passage is from John Callander’s plagiarised version of Charles de Brosses’s \textit{Terra Australis Cognita}. (De Brosses and Callander, \textit{Terra Australis Incognita}, (vol 1), pp. 614-615.)
succeeding generation, whatever their whim and dally. So as the stocks of Terra Australis shrunk, most authorities pushed the southern continent to the sidelines of their cosmographies, where it added context, but did not impose upon the new empiricism. When a backdrop for fantasies was needed, Terra Australis was, again, the context to another subject’s story. But then, as interest in the South Seas began to revive, Terra Australis could be expanded into the void of knowledge which still dominated the southern Pacific. The southern continent persisted because it was still useful.

Still useful – and still elusive. As we look forward, we know that the riddle of the Antipodes is on the verge of being answered, and yet the final few voyages of discovery required to unravel the cosmographic puzzle of the southern latitudes are delayed by a century-long lull in exploration. In a way, it was the very Dutch expeditions that had nearly pursued Terra Australis to its confutation which also led to a stay of execution for this most enduring of geographical fictions. For, though Terra Australis remained a geography of some promise – interesting, valuable, desirable, and so still well worth believing in – the question was, did it make good sense to fund any further commercial or state expeditions to discover Terra Australis, when so many voyages had now ended in disappointment? Fortunes had been spent, and many lives lost, pursuing the yet-elusive Terra Australis. It was that perpetual elusiveness which ensured that this geography was able to prosper, for a while, at least, predominantly in the minds of the geographically curious, free from the continual encroachments of new empirical data.
Chapter Nine

An Icy End

It is very certain that the discovery of Terra Australis Incognita is considered, by many wise and knowing people, as a kind of philosopher’s stone, perpetual motion, or, in plain English, as a chimera, fit only to take up the empty brains of wild projectors. Yet there seems to be no sufficient reason, why such as are competent judges of the matter in dispute, should decide, peremptorily, that there is no such country: or, if there be, that it is not worth the finding. These sort of hasty conclusions are extremely fatal to science in general and to the art of navigation in particular.

--Charles de Brosses/John Callander

If I have failed in discovering a Continent it is because it does not exist...

-- James Cook, letter, 22 March 1775

It is pliable fragments of empirical data – incomplete surveys of a coast, charts of a geography set amidst the unknown, rumours of lands seen and places visited – that vivify imaginative geographies. But when surveys are made complete, new charts are contextualised amidst known coasts, and rumours are replaced by verifiable reports, those fragments of empirical data become part of a matrix of geographical knowledge that has ever-less place and use for geographical entities carved from the imagination. And, so, all imaginative geographies eventually wither from a thousand empirical cuts. By the end of this chapter Terra Australis will prove to be no exception, cut down to, at best, a frigid and seemingly worthless Antarctic island by James Cook, who proved that no land worthy of the name, Terra Australis, could exist. Cook’s exploits are, of course, well-worn territory, his voyages universally recognised as exploratory marvels. But there is more to dwell on than just Cook and his competence as a navigator and commander; there is the fact that there was still a conception of a southern continent of sufficient currency to compel a man of Cook’s abilities to set out to test its existence. Indeed, perhaps the greater marvel is the story of how the stocks of an ailing Terra Australis were revived in the eighteenth century, to the point where more voyages with designs on the southern continent were launched between 1764 and 1772 than had been launched in the entire preceding

359 Charles de Brosses and John Callander, Terra Australis Cognita: Or, Voyages to the Terra Australis, or Southern Hemisphere, During the Sixteenth, Seventeenth, and Eighteenth Centuries... 3 vols., vol. 3 (Edinburgh: printed for John Callander, 1768), p. 611.

century. Having the means to pursue these voyages was, of course, one thing, but having the desire to seek out a geographical entity that had brought nothing but disappointment to its would-be discoverers was another thing entirely. Just how the southern continent regained authority and with that authority traction in the minds of the ambitious and curious is explained by the intersection of multiple events and developments. There was one factor, however, that played a singularly important role: the evidence of ice. Over the years, explorers may not have found the land they expected, but more than a few did discover icebergs in the southern latitudes. To your average sailor, as to your average geographer, this could only mean one thing: land, and lots of it.

**Gonneville’s Land and Bouvet’s Islands of Ice**

Before I get to the science of ice, I need to first discuss two intimately related voyages, separated by more than two centuries. In 1503 a fleet of two ships led by the Frenchman Binot Paulmier de Gonneville was blown off course by storms, somewhere along the route to the Cape of Good Hope. Whether he was blown west, east, south or even north around the Cape into the Indian Ocean, no-one really knows, though most writers think Gonneville ended up on the shores of Brazil. Wherever it was he washed up, six months were spent in friendly relations with the local inhabitants – so friendly, in fact, that Essomeric, son of the region’s king, chose to accompany the men on their return to France. In a stroke of good luck for seventeenth and eighteenth century cosmographers, but appallingly bad luck for Gonneville, the expedition’s records were lost along with Gonneville’s flagship when attacked by pirates in the English Channel. Geographers had no way of knowing what land – what continent, even – Gonneville had stumbled across. Thus Gonneville’s Land was thrown in with the cache of evidential traces available to enterprising cosmographers and cartographers in thrall of the southern continent. For the better part of two centuries, it was a piece of evidence little-valued. Then in 1663 Jean Paulmier de Courtonne, a distant descendant of Essomeric and Gonneville, published an account of Gonneville’s voyage. Lacking any co-ordinates to help identify Gonneville’s (or more rightly, Essomeric’s) Land, Paulmier’s account perpetuated the conception that Gonneville had
landed on the shores of the southern continent.\textsuperscript{361} That meant that somewhere south of Africa there was a potentially valuable land – the “third world” coveted by French speculators since the late sixteenth century – that the French, as original discoverers, could claim as their own.

The problem was that there was no data that could help identify the region of this discovery – the records were so ambiguous as to be useless. Naturally, this was no impediment to speculation. Coupled with the growing body of French novels set in terres australes, the lure of Gonneville’s Land was enough to keep the idea of southern lands fresh in the geographical imagination, and eventually inspire a new generation of explorers. Oskar Spate records a number of proposals by Frenchmen with Gonneville’s Land in mind, but the first explorer to receive a commission and sail into the waters of the southern hemisphere in search of the lost continent was Lozier de Bouvet. Though his original proposals had been rejected, in 1738 Bouvet was commissioned by the French India Company to seek out Gonneville’s Land, a land identified with the southern continent. Lagging pitifully behind her mercantile and imperial rivals, France was sorely in need of a way station along the route to the Indian and Pacific spheres of commerce, and a base in the southern Indian Ocean would provide just that. Bouvet was to sail in latitudes as low as 55\(^\circ\)S, traversing the seas where the waters of the Atlantic and Indian Oceans meet, south of Africa.\textsuperscript{362}

It can be considered something of a miracle that Bouvet did in fact discover land, on 1 January 1739 chancing upon an islandic mote that happens to be the most remote place on earth, a cool 1000 miles from its closest terrestrial neighbour. In discovering this island Bouvet had to deal with pack ice and the continual threat of icebergs, as well as an almost perpetual fog. The conditions made an approach – let alone a landing – impossible, and so when Bouvet departed the waters off the land dubbed Cape Circumcision (and now Bouvet Island) he did so ill-informed, but nevertheless believing he had encountered a promontory of the southern continent. His evidence was a combination of the sighting of the Cape, and the presence of vast quantities


of floating ice – ice, it was, believed, that could only form from great rivers or estuaries of frozen freshwater (more on that in a moment). However, Bouvet’s superiors were not sufficiently optimistic to authorise another expedition to prosecute the reconnaissance of the coasts believed to lie beyond the fog and ice that shrouded Cape Circumcision.

Indeed, after Bouvet’s 1738 voyage of discovery, the better part of three decades passed without another exploratory venture to the unknown southern latitudes. Imperial rivalries, mercantile contest, and the struggle for survival between the various commercial companies plying the Indian, Pacific, and Atlantic waters meant that voyages of exploration were assessed as risk – the sort of risk that could not be indulged. Even if a commercial venture for the terres australes had been able to secure financial backing, in the 1740s and 50s the prospects for receiving state approval for such a voyage narrowed from slim to none, with authorities careful to avoid escalating imperial tensions between France, England and Spain by intruding into another nation’s claimed sovereign waters. In 1756 those frictions flamed into the Seven Years War; France and Spain were pitted against Britain and Portugal, with various other nations dragged into the mess.

Thus, explorers could but bide their time. Yet despite the hiatus in exploration, with the passage of time interest in southern lands grew. Fictional travelogues to austral utopias and dystopias continued to find a market, as did their non-fiction counterparts. George Anson’s account of his 1743 privateering voyage into the Pacific, A Voyage Round the World, became a best-seller. While Anson added nothing of significance to geographical knowledge, books and tales like his helped maintain interest in the Pacific. So too did the occasional map which provided a speculative glimpse of the southern continent, like John Bowles’ 1740 world map, A Map of the World or Terrestrial Globe in Two Planispheres (Figure 9a).


364 In the eighteenth century most world maps did not depict a southern continent, but many did contribute to the continued belief in such an entity through their annotation of the Antarctic latitudes with the label “Terres Australes” or “Terres Antarctiques”, or similar.
Figure 9a. John Bowles, *A Map of the World or Terrestrial Globe in Two Planispheres*, 1740. Image courtesy of the National Library of Australia.
On Bowles’ map we see the familiar sight of a coastline in the southern Pacific, well south of the unmarked routes of explorers who had found no signs of a southern continent in the latitudes near the equator. In the southern Atlantic and Indian Oceans there is a second fragment of a southern coastline, reminiscent of Mercator’s sixteenth century archetype. One last detail – an annotation – completes the representation:

Because of the much greater Cold and the Seas being more Frozen towards y^e South than y^e North Pole, discoveries have not been made so far to y^e Southward as to y^e Northward, but open Seas are never known to be Frozen only y^e Borders near y^e Land, thro’ y^e great quantity of fresh water brought from the Land whence it may Reasonably be concluded that there lies much more land tho’ less Discover’d about the South Pole than the North Pole that more Discoveries have been made to y^e Northward proceeds likewise from y^e Discoverers Living nearest that Pole.

This annotation is drawn directly, almost word-for-word, from John Senex’s earlier world map of 1725, A Map of the World (Figure 9b). Yet as had become the norm for world maps – with cartography increasingly concerned with plain representation and empirically verifiable geographies – there is no southern continent depicted in Senex’s map. Depiction was dependent upon discovery, which was yet to happen. However, it seemed a sure thing that land would be found to exist, for, by Senex’s logic, encounters with ice in the southern latitudes was proof that a major landmass must be nearby. By that reckoning, Bouvet’s extensive encounters with icebergs in the southern Indian Ocean might have added to an emerging picture of Antarctic frigidity, but by the science of the day they also loomed as proof-positive that a southern continent must exist.
The More Ice, The More Land

The equation is this: the more land the more ice, hence the more ice the more land. This seemingly straightforward proposition is best known through the work of the eighteenth century French intellectual, Charles de Brosses:

the greater extent of coast there is, the more ice there will be; and, on the other hand, the more ice we find at sea, the more land we may expect to discover. The sea never freezes but in bays, and along the coasts, but our best navigators assure us that it does not freeze
far out at sea, even in the neighbourhood of the Poles. The agitation, depth, and saltness of the water preserves it from this concretion, which takes hold of it near the shores, where it is mixed with a great quantity of fresh water, the produce of the inland rivers. Now the existence of these large rivers necessarily supposes a continent through which they pass, and where they are formed.  

This understanding of the way in which ice forms held sway for much of the eighteenth century. Georges le Clerc explained that even if “against all probability” it was cold enough at the Pole to freeze-over the surface of the sea – and observations had already shown that sea-water could remain liquid at sub-zero temperatures – “it is still not conceivable how these enormous floating mountains of ice could be formed, if they did not find a fixed point against land, from whence afterwards they were loosened by the heat of the sun.”

Thus, when theoretical geographer Philippe Buache turned his attention to the question of southern lands, it was ice which dominated his understanding of the southern latitudes. As Buache explains in a 1763 essay reflecting on his vision of the southern hemisphere, he was struck by those great floating islands of ice, which were found near lat. 52. by Sharpe and Davis, and in near 300 degrees of longitude; by Mr Halley in near 345 degrees; and by Bouvet, tween the 7th and 53rd degree of longitude, in the month of June, in that climate; phænomena which there was then no reason to expect: The description which Halley has given of the floating islands, that he discovered before him, no less than three hundred feet high, and three leagues in circumference…

---

Figure 9c. Philippe Buache, *Carte des Terres Australes*, 1739, detail. To the east and the west of ‘Cap de la Circoncision’ Buache has charted what looks like an island chain, which is in fact a chain of icebergs, based on the reports of Bouvet. Image courtesy of the National Library of Australia.

Given the quantity of ice encountered by Bouvet in particular (see Figure 9c), Buache was confident in two things. First:

> the promontories of ice just mentioned, can be produced only by rivers which have a long course, at least 400 leagues, like those of *Siberia*.

To produce such rivers, sufficiently copious to form the number and magnitude of the islands of ice which have been found in latitude 52, there must necessarily be, as there is to the North, a vast tract, which serves as the basin of such rivers; from which I infer, that the Antarctic regions are not less extensive than I have represented them, and that I can be mistaken only in the bearings of the coast.\footnote{\textsuperscript{368} Ibid., p. 33.}
Second, Buache figured that if great volumes of ice had been seen by Bouvet, and smaller quantities had been seen by Sharpe and Davis on the other side of the Antarctic Pole, there must be a huge estuary of ice in the middle of the Antarctic lands that opened out towards Africa on one side and America on the other. This meant that the prospective southern continent must be divided in two, separated by a huge frozen Antarctic sea fed by enormous rivers flowing from high mountain chains in the Antarctic lands (see Figure 9d). Yet though ice dominates Buache’s conception of southern lands, there was still sufficient room for sanguine hopes of fine and fertile country and climate, and Buache discusses various traces of empirical data that convinces him that this must be so. Buache was singular in his specific vision of the southern continent, but though often mocked for his hypothetical geography in modern times, he articulated the fundamental belief of his time: there was too much ice in the southern hemisphere for there not to exist land – and probably a continent.

---

369 Eighteenth century science was wrong about ice being unable to form from sea-water, as many seas are filled with sea-ice, that is, ice which has formed from sea-water freezing. However, they were right about icebergs. Icebergs calve either from glaciers – frozen rivers or rivers of ice – or from an ice shelf. Ice shelves may protrude many kilometres into the ocean, but they are fed by an ice sheet formed from compacted snow which flows down from solid land and into the ocean. An ice shelf can be up to one kilometre thick. So, icebergs did indicate the presence of land, but Buache was wrong about the quantity of land it necessarily implied. He figured that it was rivers feeding the glaciers and frozen estuaries; given the quantity of ice encountered it meant there must be many rivers calving ice, which meant there must be a huge expanse of land forming the catchment to the rivers.

370 It should be said that at least one cartographer followed Buache in his idiosyncratic depiction of southern lands. See Louis Denis’s *Mappe-monde Physique Politique at Mathematique ou Nouvelle Maniere de Considerer la Terre*, 1764 (one copy held at the National Library of Australia).
Figure 9d. Philippe Buache, *Carte des Terres Australes*, 1754, based on Buache’s earlier 1739 map which did not show his two Antarctic mainlands. This is unarguably an accurate representation of Buache’s geographical ideas, but the map’s authorship has been subject to question. It is almost certainly from Buache’s own hand given he refers to such a map in his 1763 essay in the *Gentleman’s Magazine*. Image courtesy of the National Library of Australia.
Reviving Equipoise

As the last vestiges of medieval cosmology were repudiated in the eighteenth century, advocates of a southern continent could also draw upon a purely theoretical argument to support their conjectures. The following is a translation of Buache on his 1746 map, *Carte du Globe Terrestre*:

One can still observe in the Planisphere that the Great Continents are all found on the same side of the globe, they occupy about 2/3rd of the space... Scientists must explain why this apparent inequality of the solid parts of our globe does not produce any movement... in the rotation of the Earth on our axis.

With these words, Buache becomes one of the first thinkers to articulate a theory of equipoise explicitly in the context of a rotating earth. It is interesting – if not compelling – stuff, all the more so when read in its proper context as an annotation to Buache’s hemispheric map. The unique quirk of that map was that it superimposed the lands of the southern hemisphere upon a map of the northern hemisphere (Figure 9e). The result was a veritable pictorial essay: in just a glance it is plain to see that there is a region as large as all of Asia and Europe which has no known equivalent in the southern hemisphere. If the earth was to maintain its balance as it rotated about its axis, then surely a counterpoise to these northern lands – a great southern continent – must exist in the unknown latitudes of the south. In this iteration equipoise was set to become yet another scholarly justification for belief in southern lands.

---

371 I say it is not compelling because in the subsequent decades empirical traces and the presence of southern hemispheric ice are given considerably more attention than the theory of equipoise in discussions about the possible existence of a southern continent.
Figure 9e. Philippe Buache, *Carte du Globe Terrestre*, 1746. Image courtesy of the National Library of Australia.
Without doubt the most influential advocate of the theory of equipoisure was Charles de Brosses. In 1756 de Brosses published his *Histoire des Navigationes aux Terres Australes* – the *Principia Mathematica* of southern hemispheric exploration history.\(^{372}\) It was an authoritative, scholarly treatise that began with a compelling plea to his countrymen to rally behind the pursuit of the undiscovered southern lands, whether one continent or a multitude of mainlands and islands, both for the benefit of France, and science in general. That such lands existed, he could prove by reason and logic: “in this vast tract, it is impossible but there must be, to the South of *Asia*, some immense continent to keep our globe in equilibrio during its rotation, by serving as a counterpoise to the map of Northern *Asia*.”\(^{373}\) He then elaborated:

> Whoever examines the two hemispheres of the globe divided horizontally, that is, by the Equator (as they should always be) and not by the Meridian, must be struck in observing so much land in the one hemisphere, and so little in the other; especially, as he knows that the weight of earth is, to that of sea-water, nearly as five to three; the weight of the cubic-foot of sea-water being 73 pounds and an half, while the medium of different earths is about 120… In fact, of twenty-five millions of square leagues on the surface of the whole globe, the ancient continent occupies but five, or one fifth of the whole. It is unequally balanced from E. to W. by the map of the two *Americas*, making but one twelfth of the whole. But these two masses of earth lie so far to the *Artick* side, that perhaps not one tenth of the heaviest, and about one third of the least lies to the South of the Line. Thus the inequality of weight from S. to N. must be very great… Hence the careful observation of the known parts of the earth tends much to confirm the hypothesis of some great counterpoise placed towards the South, especially under the first meridian; that is, betwixt 180 and 230 degrees of longitude…\(^{374}\)

\(^{372}\) Charles de Brosses, *Histoire Des Navigationes Aux Terres Australes*… (Paris: 1756). I use Callander’s unauthorised translation (plagiarisation) for quotes. The only significant changes between this and the original stem from statesmanship: de Brosses urges France to discover Terra Australis, Callander urges Britain, and Callander pays less attention to the expeditions of Frenchmen Bouvet and Kerguelen. (Dunmore, *Visions and Realities*, p. 39.)

\(^{373}\) de Brosses and Callander, *Terra Australis Incognita*, p. 8.

\(^{374}\) Ibid., pp. 8-10. As de Brosses continues (p. 10), it is interesting to find that he actually acknowledges some of the potential flaws in his argument: “…even though the difference of the specific weight of earth and water above-mentioned should not be great, according to the opinion of those who, with probability enough, consider the vertical height of the depth of the sea, as forming but a very considerable part of the cubical contents of the whole mass, not to mention, that as our
If de Brosses was right, then lands of unappreciated strategic and commercial opportunity awaited discovery by whichever “potent Sovereign” possessed the necessary vision to grasp this opportunity.\textsuperscript{375} There were but two viable candidates: France and Britain.

**The Resumption of Exploration**

The scientific arguments about balance and especially those concerning ice aligned with the centuries-old traditions of geographical lore, ensured that the conjecture of southern lands retained enough credibility to once again exercise the imaginations of adventurers and statesmen. It is tempting to suggest that some sort of noble Enlightenment ethos of knowledge-seeking also played a part in the resurgence of interest in Terra Australis, especially given how prominently science and scientists feature in the activities and the accounts of the famous expeditions of the 1760s and 1770s. But no matter how serious the actual scientists, and no matter how significant and valued the knowledge they gathered on the voyages, the agendas of naturalists, astronomers and other scientists were almost always secondary to imperial and commercial motives. Science was respected as a legitimate pursuit, but it also offered a pretext to less disinterested objectives.\textsuperscript{376} Indeed, when France and Britain once again took up the pursuit of southern lands upon the cessation of the Seven Years War, the various expeditions launched were, at least in part, state-sponsored rather than purely commercial ventures commissioned with a clear eye on strategic advantages to be gained from discovering and claiming lands in southern waters.

The Earl of Egmont was one man convinced of the existence of a southern continent. Seeing an opportunity to upstage Britain’s imperial rivals, the Earl, as First Lord of the Admiralty, resumed British exploration in 1764 with an expedition to be led by John Byron. His instructions outline three potential objectives: the strategically important Falkland Islands, the

\textsuperscript{375} Ibid., p. 7.
\textsuperscript{376} See Baugh, “Seapower and Science: The Motives for Pacific Exploration.”
still undiscovered North-West Passage across northern America, and Terra Australis in the southern Atlantic. Addressing the latter, Byron’s instructions begin:

Whereas nothing can redound more to the honour of this Nation as a Maritime Power, to the dignity of the Crown of Great Britain, and to the advancement of the Trade and Navigation thereof, than to make Discoveries of Countries hitherto unknown… And Whereas there is reason to believe that Lands and Islands of great extent hitherto unvisited by any European Power may be found in the Atlantick Ocean between the Cape of Good Hope and the Magellanick Streight, within Latitudes convenient for Navigation…³⁷⁷

Unusually, Byron’s instructions contemplate the southern Atlantic region of the putative southern continent that had historically garnered the least attention of geographers, entrepreneurs, and, consequently, explorers. It is no surprise that Byron did not bother to prosecute the search, deciding his time was better spent in the Pacific.

Indeed, it seems that Byron’s own expectations for southern lands were focused on the southern Pacific, born out in comments made in his journal after discovering the northern islands of the Tuamotu archipelago in the South Pacific:

Sunday June 16th. Wind East with a mountainous Swell from the S°ward. For a day or two before we made the Islands of Disappointment till this day we had entirely lost that great Swell & for some time before we first made the Land we saw vast Flocks of Birds which we observed towards Evening always flew away to the S°ward. This is a convincing proof to me that there is Land that way, & had not the Winds failed me in the higher Latitudes as mentioned before, I make no doubt but I should have fell in with it, & in all probability made the discovery of the S° Continent; Indeed if it had not been for the Sickness in both Ships, I would still have attempted it by hauling away to the S°ward

immediately from those Islands. I remarked before that all the Islands we have seen are well peopled; Now if there are not a Chain of Islands reaching to the Continent how can we account for these Peoples being here, situated we may say in the middle of this vast Southern Ocean.  

I am not entirely convinced that Byron really believed he was on the lee of Terra Australis – for if he did believe this it also means he was willing to forsake what loomed as the greatest discovery since 1492 because the winds were indifferent, and he counted a number of sick men amongst his crew. It strikes me as possible that, having largely ignored his instructions and ultimately made no discoveries of any great significance, it may have seemed more politic to report portents of future discovery, than to report outright failure. Whether by design or by coincidence, he told the Earl of Egmont what the Earl wanted to hear. Still, we have seen throughout the story of Terra Australis many cases of data being filtered through the understandings of geographical expectation, and perhaps Byron is yet another example of this.

Whatever the case, Byron’s comments were enough to spur on the Admiralty. After the better part of a century with minimal exploration, there was, it seemed, no time to waste, especially in forbearance of the knowledge that the French had similar designs on strategically valuable lands – amongst which was the southern continent. Thus, Byron returned in May of 1766; by June his flagship had been recommissioned under the command of Samuel Wallis, and another voyage of discovery was underway. Wallis’s orders now reflected Byron’s wishful reading of the swell and the bird-life as evidence that the southern continent was within Britain’s grasp, and, crucially, would be found within the temperate latitudes of the Pacific:

there is reason to believe that Lands or Islands of Great Extent, hitherto unvisited by any European Power may be found in the Southern Hemisphere between Cape Horn and New

---

378 Ibid., pp. 104-105.
Zeeland, in Latitudes convenient for Navigation, and in Climates adapted to the produce of Commodities useful in Commerce...\(^{380}\)

Wallis’s ensuing expedition is normally remembered for its discovery of Tahiti. Yet in terms of what it meant to exploration history, an equally important discovery was of further signs of a southern continent. Those signs of a southern continent led directly to the commissioning of Cook’s second voyage, which saw Cook hound the southern continent into oblivion. So what was it that was seen on the Wallis expedition? On 19 June 1767 George Robertson, master of the *Dolphin* under Wallis, recorded in his journal:

> At 2 P.M. we made sail and steered WSW ½ W. our greatest hopes at this time was the prospect of high Land which we all suposed we saw the day before, this was the only Comfort we had for the departing so soon from Osnaburg Island and thanks be to the Almighty we was not disappointed in our hopes—At 3 P.M. we saw the Land bearing W ½ S. It appeared to be a great high mountain covered with clouds on the top; at 6 A.M. the Extreme of this Land bore from W ½ S to W.B.N. ½ N distance about 14 Leag\(^{8}\) at same time we saw the tops of several mountains the Extreems bearing from South to S.W. upwards of twenty Leag\(^{8}\). This made us all rejoice and fild us with the greatest hopes Imaginable, we now lookt upon our selves as relived from all our distresses as we was almost Certain of finding all sorts of refreshments on this great Body of Land, *Especially* as there was so great plenty on Osnabrug Island, which was only a small detached spot in comparison with what we saw this evening at Sun Set, *we now suposed* we saw the long wishd for Southern Continent, which has been often talkd of, but neaver before seen by any Europeans.\(^{381}\)

The continent Wallis supposedly had in view was almost certainly a distant cloud bank which had initially been interpreted as the caps of mountains. They had, however, discovered Tahiti,

---


\(^{381}\) Ibid., p. 135.
and though the original sighting of “high land” had been further south, Robertson reconciled this by positing Tahiti as a peninsula of the southern continent: “we was now fully persuaded that this was a part of the southern continent, we theirfor Determined to work to windward all night for fear of being Imbayd between this north shore and the High Mountains which we saw last night to the southward of us.”\textsuperscript{382} It seems, however, that whereas his counterparts were soon disabused of this notion, especially with the Tahitians communicating the insularity of their land, Robertson held fast to the illusion. When Wallis decided to depart Tahiti and head west – uninterested in chasing mirages on the horizon – Robertson was dismayed; he believed the southern continent was indeed just over the horizon, and the thought of all his “pains and troubles” having been in vain was a source of bitter disappointment.

In the long run, however, Robertson prevailed. Of the eighteen different journals kept by various crew on the expedition, only Robertson’s mentions signs of a southern continent.\textsuperscript{383} And yet, ultimately, the assessments of this one sailor were considered more telling than the judgments of the sum of his fellow crewmen, including his commander – Robertson’s impressions judged the relevant ones when sending Cook after the southern continent. The only way this scenario makes sense is if the Admiralty was strongly swayed by preconceived expectations. Indeed, in a hand-written note thought to have been authored by the man who had commissioned the Wallis expedition – former First Lord of the Admiralty, the Earl of Egmont – Egmont is so consumed with the prospect of a southern continent that he would rather indulge a conspiracy theory than the more obvious conclusion: “But Capt Wallis and his First Lieutenant… [judged] it was too hazardous under these circumstances, to coast the Continent (which they had then actually in view) and afterwards thought most prudent on their return, not to take notice that they had ever seen it at all.”\textsuperscript{384}

Yet if the southern continent was believed to be just over the horizon, it is unclear how the results of Philip Carteret’s voyage across the Pacific were sensibly reconciled. In his ship, the

\textsuperscript{382} Ibid., p. 140.
\textsuperscript{383} Ibid., p. xxviii.
\textsuperscript{384} Ibid., p. xxviii. This note was appended to another journal written during that voyage, that of Robert Molyneux, master’s mate.
Swallow, Carteret had accompanied Wallis and the Dolphin until the two ships passed through the Straits of Magellan, when they were separated. Subsequently, Carteret’s passage across the Pacific was in higher latitudes than Wallis; thus, while Wallis went on to encounter Tahiti, Carteret made his passage a few degrees further south. This proved that Tahiti could not be part of the southern continent, and nor could there have been another headland on the horizon – the headland supposedly seen by Robertson. What is more, Carteret recorded heavy seas at 146° W, concluding: “from the great Swell or Billows we had here there could be no land near us to the Southward.” But if his audience was primed for news of southern lands, then this absence of swell could be quickly forgotten. A little further west, between 147° and 149° Carteret indicates that he “lost the Southerly billows swell”, though a day’s passage later and he again records the presence of “the great Southern Swell”. As he took stock of his passage across the Pacific, which he rightly notes to be the most southerly course yet pursued in those latitudes, he concludes: “we have not seen any land or Island of any consequence, nor have we had any kind of indication of any Continent.”

France Australe

In the same year as Carteret and Wallis made their voyages, the French had resumed austral exploration with a voyage planned and led by Louis Antoine de Bougainville, spanning 1766-1769. A second voyage was launched in 1767, led by Jean-François-Marie de Surville. Both Bougainville and de Surville carried hopes of discovering some unknown land in the southern Pacific, whether a continent, or merely rich islands. Their respective expeditions boast many achievements – circumnavigating the globe, visiting the shores of New Zealand, discovering the Great Barrier Reef and various islands – but the discovery of terres australes did not count amongst them. Bougainville reflected on this disappointment, with the sting of chastisement reserved for armchair geographers:

385 Carteret and Wallis, Carteret’s Voyage Round the World, 1766-1769, p. 153
386 Ibid., p. 154.
387 Ibid., p. 154.
If any considerable land existed hereabouts, we could not fail meeting with it; as the least latitude we were hitherto arrived at, was 17° 40’ S. which is the same that Quiros observed on this very coast, whereof the geographers have been pleased to make a great continent.

I agree, that it is difficult to conceive such a number of low islands, and almost drowned lands, without supposing a continent near it. But Geography is a science of facts; in studying it, authors must by no means give way to any system, formed in their studies, unless they would run the risk of being subject to very great errors, which can be rectified only at the expense of navigators.\(^{389}\)

Having dallied with the prospect of discovering unknown southern lands in Bougainville and de Surville’s voyages, in 1771 the French turned their full attention to the undertaking, launching two expeditions, both to the southern Indian Ocean, charged with the principle objective of discovering what, with any luck, would become known as France Australe.

The first to depart was the expedition led by Marion du Fresne. Officially, the voyage was concerned with returning to his Pacific homeland an indigenous Tahitian brought to France by Bougainville. This was a noble auspice under which to launch an expedition, but there was, of course, more at stake. On the way to Tahiti via the Cape of Good Hope, du Fresne was to plumb the southern latitudes south-east of the Cape, discovering, if it existed, the southern continent.\(^{390}\) As Julien Crozet, du Fresne’s second in command, explained:

> It was proposed he should advance sufficiently to the south in order to try and discover the islands, or the continent, which it was supposed were to be found in this southern portion of our globe, the Governor of the Isles of France and Bourbon being particularly


\(^{390}\) Contemplating the existence of Terra Australis, an officer, Le Dez, commented that its existence “appears sufficiently demonstrated by the very form of the globe, which obliges us to attribute to this hemisphere almost the same configuration, the same quantity and quality of matter as ours.” (Edward Duyker, *An Officer of the Blue: Marc-Joseph Marion Dufresne, South Sea Explorer, 1724-1772* (Melbourne: Melbourne University Press, 1994), p. 113.)
anxious that the most northerly portions of this supposed land should be discovered, as they would be nearer to the colonies and under a more temperate climate than the more southern portions.\textsuperscript{391}

When their Tahitian consul died just as they reached anchorage in Madagascar, the expedition’s focus became purely exploratory. They reprovisioned at the Cape of Good Hope, then struck south in search of southern lands, with the 1503 encounter by Gonneville and the 1738 encounter by Bouvet foremost in their thoughts. As soon as the ships crossed the Antarctic Convergence, a dramatic change in temperature was observed, confounding their expectations for what should have been, according to the theory of climate, temperate climes. It did not matter. On 13 January 1772 the two ships emerged from the mists that beleaguer these waters to the heartening sight of land (to be later known as the Prince Edward Islands). According to Crozet: “M. Marion named it Terre d’Esperance (Land of Hope), because its discovery flattered us with the hope of finding the southern continent we were in search of.”\textsuperscript{392}

With the weather against them and both ships ailing after a collision, the land could not be explored to the south, so speculation that it was in fact a narrow headland to the southern continent could be neither confirmed nor denied. Needing to make haste in search of a port for repairs, the fleet continued east. Familiar signs of land were sources for encouragement: “I was surprised to see a white pigeon, which had no doubt strayed from some neighbouring land, and it seemed to me one might well argue that we were not far off from a big country which produces the proper seed-food for this bird.”\textsuperscript{393} The sighting of penguins and seals reinforced this impression, as did the sighting of a huge iceberg. On 22 January two more islands were encountered – the Crozet Islands. Taken together – animals, ice, and chains of islands (long associated with the presence of a mainland) – these traces seemed to confirm that the southern continent, or at least a land of considerable extent, lay to the nearby south. In the end the fleet’s

\textsuperscript{391} Julien Crozet, \textit{Crozet’s Voyage to Tasmania, New Zealand, the Ladrone Islands, and the Philippines in the Years 1771-1772}, trans. H. Ling Roth (London: Truslove & Shirley, 1891), pp. 6-7. Crozet assumed command of the expedition after du Fresne was killed by Maoris in New Zealand.
\textsuperscript{392} Ibid., p. 11.
\textsuperscript{393} Ibid., p. 16.
inability to locate the southern continent was explained away by damned misfortune: “Our position was now favourable for the discovery of the southern continent if only we could have advanced in a south-easterly direction; but unfortunately the state of the *Castries* since she was dismasted did not allow M. Marion to follow out his otherwise well-matured plans.”

By the time the fleet returned to Mauritius in 1773 with news of these discoveries, a second expedition led by Yves-Joseph de Kerguelen had long since departed in May 1771. Kerguelen’s instructions gave the ambitious young explorer the opportunity to better the achievements of the Englishman, James Cook, who had just completed his first circumnavigation of the globe in which he visited New Zealand and eastern Australia. Indeed, forestalling the British who had sent ships to investigate the existence of a southern continent in the Pacific was an additional motivation for the French to make haste; but whereas the British were now looking to the Pacific, the French were focused upon lands south of the Cape of Good Hope, as we saw with the expedition of du Fresne and Crozet. Thus, Kerguelen’s instructions stated:

> His Royal Highness fully trusting of his knowledge, skills, zeal and energy has decided to give him preference to attempt one of the most important discoveries remaining to be made.

> The Honourable Yves de Kerguelen is hereby informed that all appearances point to the existence of a very large continent to the South of the Islands of Saint-Paul & Amsterdam and that, furthermore, the said continent must lie in a part of the world extending between 45° south and the vicinity of the Pole, in an immense area which as yet has not been entered. It also appears as an acknowledged fact that the Honourable Binot de

---

394 Ibid., p. 17. Interestingly, Crozet found an ingenious way of memorialising the southern continent even if it did not exist (pp. 70-71): “Might not the subterranean fire, which formerly burned and vitrified so much matter in New Zealand, have also by several shocks detached this island from New Holland or from the Austral lands or from some other continent? …In this great portion of the earth so long unknown to Europe and so little known to this day, how many physical revolutions may not have been occasioned by successive volcanic eruptions? How many cities, empires, nations, may have disappeared from the face of the earth and abandoned their abode to the element which now covers them… I shall not be astonished if those navigators, now occupied with the discovery of an Austral Continent, should find at the Antarctic Pole nothing but islands, being the summits of the mountains which have escaped from volcanic shocks and have been separated from plains which may have formerly surrounded them. There they will surely find people absolutely similar to those of New Zealand.”
Gonneville made landfall there around the year 1504 and lived there for about six months, during which time the natives of the land treated him very well.³⁹⁵

Barely a month into sailing south from the port of Mauritius, the land now known as Kerguelen Island was sighted. Confronted with heavy seas, strong winds, powerful currents, and the added danger of mists, Kergeulen left it to his more nimble sister ship (the *Gross Ventre*) commanded by St. Allouarn to affect a landing and reconnoitre the coast. But as conditions worsened Kergeulen made the fateful decision to abandon the *Gross Ventre* and return to Mauritius to proclaim his discovery.³⁹⁶ Just what had he discovered?

I have had the good fortune to discover the Antarctic Continent, and even to find out that it is well placed for the formation of establishments suitable to command Asia and America…

It is a fifth part of the world… It extends to the east by north-east, offering settlement under different skies and different climates… The latitude in which this land is situated holds out the promise of all the vegetable products of the metropolis… Southern France will provide grain crops suitable for man, building, and masting timber…³⁹⁷

These are flattering words for a land neither temperate nor continental. But Kerguelen’s enthusiasm carried the moment; with his report at hand the Governor of Mauritius wrote to Paris in glowing terms. True, all expeditions to these sub-Antarctic waters had encountered a combination of biting cold, heavy seas, snow, icebergs, and perpetual mists, and the lands encountered comprised mountainous terrain shrouded in fog and capped with snow; but the

³⁹⁶ After Kergeulen inexplicably disappeared, St. Allouarn and the *Gross Ventre* chose to continue with the expedition. They proceeded east in the same latitude as Kerguelen Island, affecting the most southerly passage ever attempted. Every day brought indications of land (or so it was thought) with seals, birds, weed, and so on, which led St. Allouarn to conclude that he was coasting the southern continent at some distance. However, he also concluded that such a land was of little immediate value, given the frigid climate in which the putative continent existed.
Governor was nonetheless swayed by Kerguelen’s testimony and the theories of climate and latitudinal determinism that dominated eighteenth century thinking. The Governor effused:

If one considers the latitude of the land which has been discovered, one cannot fail to attribute to it the mildest and most felicitous climate… All that the eyes have been able to see is intersected by woods and greenery, which seems to indicate a country that is inhabited and carefully cultivated.\(^{398}\)

Kerguelen had deceived himself – not in the naïve ways of a true believer like Quirós, but rather from an overweening desire to glorify his exploits and better his station in life – and, as a result, he had deceived those around him. He could do so on the basis of such flimsy data because he had such a rich store of geographical lore to draw upon.

When he returned to France, no time was wasted in contemplating further expeditions to capitalise on the discovery of the southern continent, a matter of considerable priority in light of the mercantile race in which France found herself lagging. As was keenly observed in the draft preamble to instructions for another expedition to Kerguelen’s promised land:

It is far too important to verify… the existence of the land which M. de Kerguelen has just discovered… to delay issuing orders for a new expedition to this area. An even more powerful motive… is the need to forestall the English, or any other nation which, following the rumours that have circulated concerning this discovery, might seek to disturb in its principle the possession which the commander of the flute will, presumably, have claimed on behalf of His Majesty.\(^{399}\)

By December 1773 Kerguelen was back at France Australe: Kerguelen Island. From there Kerguelen was meant to proceed east in the high latitudes, assiduously avoiding Australia, Tasmania, and New Zealand, his only landfalls to be upon the southern continent which, with

\(^{398}\) Ibid., p. 212.
\(^{399}\) Ibid., p. 215.
due diligence, should be found to stretch right around the globe. Kerguelen was instructed to follow that coastline – though not if it dipped below 50°S – all the way to Cape Horn. If lucky, he would find that Gonneville’s Land tended north into the more temperate climes of the southern Pacific. By the end of the voyage, the southern continent would nowhere remain ‘unknown’. These were the goals of the voyage; the reality was that Kerguelen had no stomach for a lengthy expedition in dangerous and miserable climes. So, after he arrived at Kerguelen Island, he dithered for some weeks attempting to land, before, once again, returning straight to Mauritius, and eventually France where a court martial awaited. The fairytale of France Australe was over.

**In Pursuit**

The British, too, were closing in on the truth of the continental phantom, Terra Australis. Byron had only wishful portents to report, and Wallis nothing at all – but interest persisted. In his *Account of the Discoveries made in the South Pacifick Ocean*, Alexander Dalrymple, the British geographer-cum-mariner, fanned the flames of British ambition with a treatise of singular conviction. He set out the usual articles of evidence in support of his conjectures, but in one regard he bettered all the arguments of his peers – expanding, even, on the work of de Brosses. With careful calculations of regional land to water ratios, Dalrymple purported to prove that a southern continent must exist – accompanied by an explanation of how his scientific calculations showed where it would be found:

The annexed Table will elucidate the comparative proportion, in square degrees, of land to water in the two hemispheres, as well within the Tropicks as without, tho’ it is not extended to the Poles, even of the northern regions, very little being known.

<table>
<thead>
<tr>
<th>North Lat.</th>
<th>South Lat.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Land.</td>
</tr>
<tr>
<td></td>
<td>Land.</td>
</tr>
<tr>
<td>0 to 10º</td>
<td>1100</td>
</tr>
<tr>
<td></td>
<td>1200</td>
</tr>
<tr>
<td>10 to 20º</td>
<td>950</td>
</tr>
<tr>
<td></td>
<td>950</td>
</tr>
<tr>
<td>20 to 23º</td>
<td>420</td>
</tr>
<tr>
<td></td>
<td>270</td>
</tr>
</tbody>
</table>
The excess of land in North latitude is very inconsiderable, being only 50 square degrees. This will probably be made up in the Southern Lands and Islands not yet discovered.

<table>
<thead>
<tr>
<th>North Lat.</th>
<th>South Lat.</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 to 30º</td>
<td>980 1540</td>
</tr>
<tr>
<td>30 to 40º</td>
<td>1700 1900</td>
</tr>
<tr>
<td>40 to 50º</td>
<td>2200 1400</td>
</tr>
<tr>
<td></td>
<td>4880 4840</td>
</tr>
</tbody>
</table>

From the Tropick to 50º North latitude, the proportion of land and water is nearly equal; but in South latitude, the land, hitherto known, is not 1/8 of the space supposed to be water. This is a strong presumption, that there are in the southern hemisphere, hitherto totally undiscovered, valuable and extensive countries, in that climate best adapted for the conveniency of man, and where, in the northern hemisphere, we find the best peopled countries.  

No scholar had ever provided such a detailed breakdown of the theory of equipoisure, but then it is arguable that no scholar had ever wanted the southern continent to exist as much as Dalrymple. He planned to captain a voyage of discovery that would finally discover the continent that he had shown must exist in the south Pacific, after which glory would forever redound to his good name.

Perhaps Dalrymple’s most telling statement is his brief explanation as to why he does not extend his comparison of north and south latitudes all the way to the South Pole:

---

400 Alexander Dalrymple, *An Account of the Discoveries Made in the South Pacifick Ocean, Previous to 1764* (London: 1767), pp. 90-91. Note: though printed in 1767, this treatise was not published till 1769.
So little is known here in the Southern Hemisphere, that there is scarce room for a comparison, and as the climate to the South in those latitudes, is probably too severe for such countries to be of much value, they do not come within the object of the present disquisition.\textsuperscript{401}

Dalrymple used theoretical justifications to reason for a southern continent that would be found not loosely in the southern hemisphere, but in the precise region where its existence made the southern continent still worth believing in. Where that geography was no longer valuable to him – that is, amongst the frigid climes of the Antarctic, climes “too severe for such countries to be of much value” – his theoretical rationalisations evaporated. Dalrymple reverse-engineered his southern continent: he knew what he wanted to exist, then used theoretical justifications to make it so.

In the end, Dalrymple’s ingenuous arguments and confident lobbying were for nil; his inexperience as a mariner precluded him from captaining a voyage with the expansive undertaking of exploring the southern hemisphere. Nor was it any consolation to Dalrymple that he was over-looked not for some middling sailor, but for James Cook – a mariner destined to be recognised as one of the best navigators and commanders of all time. Cook was tasked with the initial objective of observing the transit of Venus across the Sun from the vantage of Tahiti. As soon as this was completed, he was to head south in search of Terra Australis. His instructions read:

\begin{quote}
there is reason to imagine that a Continent or Land of great extent, may be found to the Southward of the Tract lately made by Capt\textsuperscript{n} Wallis…
\end{quote}

\begin{quote}
You are to proceed to the southward in order to make discovery of the Continent above-mentioned until you arrive in the Latitude of 40°, unless you sooner fall in with it. But not having discover’d it or any Evident signs of it in that Run, you are to proceed in
\end{quote}

\textsuperscript{401} Ibid., p. 92.
search of it to the Westward between the Latitude before mentioned and the Latitude of 35° until you discover it, or fall in with the Eastern side of the Land discover’d by Tasman and now called New Zeland.402

Departing in August 1768 on his first great voyage of discovery, Cook was assiduous in prosecuting these instructions, first taking in Tahiti and with her Venus, then heading south to open waters, before turning for New Zealand. At this point no continent had been discovered, and it appeared none would be. When Cook comments of New Zealand that “This country, which before now was thought to be a part of the imaginary southern continent, co[n]sists of Two large Islands”, an astute Beaglehole detects in Cook’s inclusion of the word “imaginary” a shift in his thinking: for all the enthusiasm of his erstwhile peers and true believers, Cook saw his task now not as that of the explorer finding an El Dorado, but of the scientist putting to proof an untenable hypothesis.403

With his principal objectives complete, Cook contemplated the route of his return to Britain. One option was to cross the high latitudes of the Pacific, rounding Cape Horn from the west to east: “To return by the way of Cape Horn was what I most wish’d because by this rout we should have been able to prove the existence or non existence of a Southern Continent which yet remains doubtfull”.404 It was not to be, however. Cook continues: “…but in order to ascertain this we must have kept in a high latitude in the very depth of winter but the condition of the ship in every respect was not thought sufficient for such an undertaking.”405 And so it was that Cook returned to Britain in July 1771, convinced that the southern continent did not exist, but unable to prove this beyond doubt, for there was yet a skerrick of cartographic space “Northward of 40° where the grand Object can lay.”406

403 Ibid., p. 274.
404 Ibid., p. 272.
405 Ibid., p. 272.
406 Ibid., p. 290.
Figure 9f. William Whitchurch, *Chart of part of the South Sea, shewing the tracts & discoveries made by His Majestys ships Dolphin, Commodore Byron & Tamer, Capn. Mouat, 1765, Dolphin, Capn. Wallis, & Swallow, Capn. Carteret, 1767, and Endeavour, Lieutenant Cooke, 1769*, circa. 1771-1779. Image courtesy of the National Library of Australia.
A Final (Icy) End

Even before he had returned to Britain, Cook knew he had to finish the job: “I think it would be a great pity that this thing which at times has been the object of many ages and Nations should not now be wholly clear’d up, which might very easily be done in one Voyage without either much trouble or danger or fear of miscarrying as the Navigator would know where to go to look for it”.  There was no southern continent in the remaining unexplored spaces above 40°S: of that Cook was sure, and it would be relatively straightforward to prove. That should have been where the matter ended, for as geographers and explorers had recognised for centuries, any land further south than 40° offered little prospect of either commercial or strategic utility. But Cook, it seems, was not completely impervious to the allure of the southern continent. He was no believer, that is for sure, but he had become enchanted by the conceit. So what if it did not exist?: it was a geography too splendid, even if a barren wasteland – a geography too expansive, enduring, and beguiling – to simply disregard.

Cook is an unfailing sceptic when it comes to the southern continent, and we see glimmers of him disapproving of the overly imaginative geographers and entrepreneurs who vivified Terra Australis in its various guises; but he is as compelled to seek it out as Quirós and Van Diemen before him. The difference is that Cook had the means and the mettle to pursue the continent to the most frigid and inhospitable latitudes in which it might possibly be found, and in pursuing this white whale he could not be disillusioned by non-existence, for to prove that very fact – the fact that the continent was nothing more than a centuries-old wives tale – was the very fire that drove him to the ends of the earth.

Cook devised a plan that was ambitious to the point of immoderacy: he would circumnavigate the southern hemisphere in the highest possible latitudes, pushing as far south as 60°S (to put this in context, Tasman’s 1642 expedition had abandoned the higher latitudes at 49°S due to the multitude of dangers and brutal conditions). There were to be no blank spaces left on the map

---

407 Ibid., p. 290.
408 Cook advised Lord Sandwich of adjustments he wanted made to the instructions for the proposed voyage: “to make new discoveries the Navigator must Traverse or Circumnavigate the Globe in a higher parallel than has hitherto been done, and this will be best accomplished by an Easterly Course on account of the prevailing westerly winds in all high Latitudes. The
where a continent born of the mould of Terra Australis – no matter how shrivelled and feeble – might reside in the imaginations of men. Cook considered that he might well discover land, but he expected that if he did it would be so close to the Pole that at best it may warrant the label of an Antarctic continent: a continent entirely removed from the essence of Terra Australis.

What is more remarkable than Cook putting forth such a self-sacrificing proposal is the fact that it met with official approval – despite the almost complete lack of strategic or commercial prospects offered by the voyage. By dint of the authority Cook now carried as a bold and successful explorer – promoted after his first voyage from Lieutenant to Commander, though the rank of Captain would have to wait till he had completed his second voyage – he had unprecedented freedom in choosing his objectives; the result was the first voyage of discovery commissioned by a “potent Sovereign” that did not hide imperial agendas behind the veil of science. This was to be, truly, a scientific expedition; an expedition for which the primary objective was no more and no less than ascertaining geographical truth. The reality of this makes Cook’s instructions a curious document, as the standard exhortations to take careful note of advantages and commodities is repeated as rote, despite the incongruity of the subject. So, for example, Cook is to seek out Bouvet’s Cape Circumcision, whereupon,

you are to satisfy yourself whether it is a part of that Southern Continent which has so much engaged the attention of Geographers & former Navigators, or Part of an Island… If you find any Mines, Minerals, or valuable Stones, you are to bring home Specimens of each…You are likewise to observe the Genius, Temper, Disposition and Number of the

principle thing to be attended to is the proper Seasons of Year, for Winter is by no means favourable for discoveries in these Latitudes; for which reason it is humbly proposed that the ships may not leave the Cape of Good Hope before the latter end of September or beginning of October, when having the whole summer before them may safely Steer to the Southward and make their way to New Zealand, between the parallels of 45° and 60° or in as high a Latitude as the weather and circumstances will admit. If no land is discovered in this rout the Ships will be obliged to touch at New Zealand to recruit their water.

From New Zealand the same rout must be continued to Cape Horn… if land is discovered the track will be altered according to the direction of the land, but the general rout must be pursued otherwise some part of the Southern Ocean will remain unexplored.” (Ibid., pp. xx-xxi.)

A range of additional scientific experiments and inquiries were to be conducted during the expedition, adding to the impression of Cook’s second voyage as the epitome of the ‘noble Enlightenment ethos’. It would be naïve, however, to assume there was no statesmanship involved between different nations when it came to science – yet another field in which shows of power and superiority had imperial overtones.
Natives or Inhabitants, if there be any… You are with the consent of the Natives to take possession of convenient Situations in the Country in the Name of the King of Great Britain…  

Cook would do his best to seek out Cape Circumcision, but there would be no continent attached to it, nor any mines, minerals or valuable stones, nor inhabitants from whom to take possession of the land. Cook knew it, and the Admiralty by now must have suspected that there was nothing of immediate value to be found, be it at Cape Circumcision or any other lands of these southern latitudes.

Yet though Cook and his peers in the Admiralty knew better, Cook’s sailors did not. Having set sail in the middle of 1772, by the time the expedition found the higher latitudes of the Antarctic, the men were on constant alert for land, expecting a sighting at any moment. False cries of land rang out for weeks – but it always turned out to be a fog-bank, or an iceberg, or pack ice. There was no mainland to be found in the southern Indian Ocean. After welcome respite from the cold with a brief foray to New Zealand, Cook took his men into the southern Pacific where the same expectations were quashed by the cold reality of a largely unbroken expanse of ocean. Cook, however, suffered no surprise, and so no significant disappointment. That is not to deny, however, that Cook was expecting to discover a continent, but as his naturalist Johann Reinhold Forster made clear, it was not the same continent his less critical charges had in mind. This is borne out in the latitudes which the sailors expected to traverse, contrasted with the latitudes – down to 70°S – to which Cook took them. Forster explains:

Captain Cook in [his former voyage having] penetrated to 40 degrees of south latitude without finding land, the southern continent was restrained within narrower limits, though

---

410 Cook and Beaglehole, *Voyage of the Resolution and Adventure*, pp. clxvii-clxviii.
411 Given Cook’s implicit understanding that his was a voyage that sought the prize of truth and nothing more, it is interesting to find Cook – almost three years into the voyage, by that time nearing its conclusion – caught in a rare moment of disingenuity: “the reader must not expect to find me much farther to the South. It is however not for want of inclination but for other reasons. It would have been rashness in me to have risked all which had been done in the Voyage, in finding out and exploring a Coast which when done would have answered no end whatever, or been of the least use either to Navigation or Geography or indeed any other Science”. (Ibid., p. 638.) But-for the bettering of knowledge itself, no part of Cook’s second voyage answered any end whatever.
these were still considerable enough to engage the attention of future navigators. We
were now to enter on this unexplored part, and running to the eastward between the 50th
and 40th degrees of south latitude, to search for undiscovered countries in the depth of
winter. Many among our fellow-voyagers proceeded on this dangerous expedition in the
firm belief that we should speedily find the coasts we went in quest of, whose novelty and
valuable productions would amply reward our perseverance and fatigues. But captain
Cook, and several others, judging from what had been done in the former voyage, and
what they had already experienced on this, were far from expecting to discover new
lands, and greatly doubted the existence of a southern continent.412

At every turn Cook’s preconceptions were confirmed; the lands his men expected to discover
were so many “imaginary Lands”.413 On the other hand, as he whittled away the possible
bounds of the southern continent with each thrust further south, Cook became more certain that
there was in fact a continent – but a purely Antarctic one. Each day brought more encounters
with ice, which loomed as more evidence of this seemingly inescapable conclusion.414 These
were not just stray bergs, but an endless horizon of ‘Ice Islands’. “It is a general received
opinion”, Cook wrote, “that Ice is formed near land, if so than there must be land in the
Neighbourhood of this Ice, that is either to the Southward or Westward.”415 So while Cook was
intent upon disproving the ‘imaginary southern continent’ of Terra Australis, he was also intent
upon discovering the Antarctic mainland he figured existed. Later in the expedition when South
Georgia Island east of Cape Horn was encountered, Cook – and, of course, his men – still held
to the vain hope that perhaps, after all, they would find a continent (however enfeebled); Cook
pondered “whether the land we had seen the preceding day might belong to an extensive tract
and I still had hoped of discovering a continent. I must Confess the disappointment I now met

412 Johann Reinhold Forster, A Voyage Round the World, ed. Nicholas Thomas and Oliver Berghof, 2 vols., vol. 1 (Honolulu:
413 Cook and Beaglehole, Voyage of the Resolution and Adventure, p. 72.
414 To give due credit, by the end of the voyage Cook had begun to doubt the received wisdom about the formation of ice, and
his naturalist, Johann Reinhold Forster, would later publish a comprehensive critique of the subject. (Johann Reinhold
Forster, Observations Made During a Voyage Round the World, ed. Nicholas Thomas, Harriet Guest, and Michael Dettelbach
(University of Hawaii Press, 1996), pp. 61-78.)
415 Cook and Beaglehole, Voyage of the Resolution and Adventure, pp. 71-72.
with did not affect me much, for to judge of the bulk by the sample it would not be worth the
discovery.”416

Figure 9g. William Hodges, “Ice Islands with the Resolution and the Adventure”, in William Hodges, Original
Sketches, Drawings, Maps etc Collected by Admiral Isaac Smith. Drawings and Watercolours, mainly of Captain

And so Cook continued to add to the thousand empirical cuts that ensured the demise of Terra
Australis. As we now know, and as Cook and his men were figuring out, there are a meagre few
islands in the Southern Ocean, beyond which, at the Pole, lies a virtually impenetrable body of
ice. On 30 January 1774 Cook recorded the latitude as 71° 10’ S. Not only was Cook within the
Antarctic Circle, he was barely 120 miles from the coast of Antarctica itself. With “Ninety
Seven Ice hills” on the horizon, Cook had reached the absolute limit of navigable waters.417

416 Ibid., p. 625.
417 Ibid., p. 323.
When his circumnavigation of the Antarctic Circle finally drew to a close a year later, Cook was right that not even his harshest critic (the incorrigible Dalrymple notwithstanding) could begrudge his final assessment:

The risk one runs in exploring a coast in these unknown and Icy Seas, is so very great, that I can be bold to say, that no man will ever venture farther than I have done and that the lands which may lie to the South will never be explored. Thick fogs, Snow storms, Intense Cold and every other thing that can render Navigation dangerous one has to encounter and these difficulties are greatly heightened by the unexpressable horrid aspect of the Country, a Country doomed by Nature never once to feel the warmth of the Suns rays, but to lie for ever buried under everlasting snow and ice.418

Conclusion
Reflecting on Cook’s achievements, Beaglehole writes: “if we contemplate these voyages of Cook against the background of geographical thought, or as exercised in the strategy of empire, we may consider their results as primarily negative. There was no continent.”419 Yet as Beaglehole himself recognises, the results of Cook’s voyage are better conceptualised otherwise – as additions to knowledge. Had a magnificent southern continent been encountered it would have hardly been a discovery at all, as discovery suggests an addition to knowledge that, in the words of John Allen, does “not conform to their preexisting world view.”420 The only way a real discovery could be affected was for the southern continent to be found not to exist – to find that geographic preconceptions were wrong. In that sense, Cook’s discovery of millions of square miles of ocean – unencumbered but for the scarcest fragments of land and seasonal bergs that ride the currents – was the greatest discovery of all.

In the end, Cook’s assessment was final:

418 Ibid., pp. 637-638.
I had now made the circuit of the Southern Ocean in a high Latitude and traversed it in such a manner as to leave not the least room for the Possibility of there being a continent, unless near the Pole and out of the reach of Navigation… Thus I flater my self that the intention of the Voyage has in every respect been fully Answered, the Southern Hemisphere sufficiently explored and a final end put to the searching after a Southern Continent, which has at times ingrossed the attention of some of the Maritime Powers for near two Centuries past and the Geographers of all ages.\footnote{Cook and Beaglehole, \textit{Voyage of the Resolution and Adventure}, p. 643.}

It was now for the geographers and statesmen, explorers and idle thinkers, frequenters of taverns and indulgers of scuttlebutt, to get their heads around a more challenging revelation than had ever been expected. There was – there is – no southern continent. As is abundantly clear in Figure 9h, after two millennia, and countless transformations, this imaginative geography had simply run out of space.
Figure 9h. The southern hemisphere – run out of space. Jean-Claude Dezauche, *Hémisphère Méridional pour voir plus distinctement les Terres Australes, circa.* 1785. Image courtesy of the National Library of Australia.
Conclusion

Mistaking Australia for Terra Australis

One is tempted to suppose that until men are literally forced out of it they cling to their image or idea of the truth rather than face up to the truth itself: in fact, that most of what is offered as the truth is just a new re-shuffle of our thinking to adjust the mental image of the world to the bits of the world that actually hit us, so to say, in the face. In other words, the mental image is the environment we go by as true, until the true environment destroys the illusion. Even then we seize on any part of the true environment that might, for the time being, salvage something of our mental map of the world, and so we continue with our images in some other form. None of us lives by the true environment, but only by a mental image of what that environment is; hence the mental environment may be as important for geography as the actual environment itself, were that to be ascertained.

-- J. Wreford Watson

In the wake of Cook’s second voyage, Terra Australis was given an icy farewell. Imaginative geographies need space – space in which they can be imagined, and space into which they can retreat when confronted by inconsistent empirical data. Terra Australis had run out of space; there was simply nowhere left in which a great continent could be fitted, and even if revised as a smaller Antarctic continent, the latitudes Cook had left undiscovered were so frigid that any landmass a geographer might postulate could not offer any of the temperate riches the southern continent had always promised. There was no amount of revision or reimagining that could save Terra Australis. It was obsolete, and thus proclaimed a mere fancy of less-informed minds, as John Marra wrote in 1776:

it may be affirmed with certainty, that no continent exists, within those limits, and that all the conjectures and positive assertions of former navigators, and the reasoning of geographers and astronomers concerning a Terra Incognita Australis, have not the least foundation in truth, but are mere fictions unsupported by facts, and now fully disproved by uncontrovertible demonstration.

And yet, this is not the last we hear of Terra Australis. Throughout the last two decades of the eighteenth century and the following two centuries, the name of ‘Terra Australis’ continues to appear with surprising frequency. Of course, not even the most zealous advocate was prepared to maintain after Cook’s voyages that a glorious southern continent still awaited discovery; but the trope of Terra Australis had so dominated images and discussions of the southern hemisphere that while the continent was discarded, its toponymy was redeployed as a pseudonym for a real land: “New Holland, or Terra Australis, the largest island in the world, or rather a continent.”

This was hardly a new development, as we saw in Chapter Eight how some cartographers and geographers confused by the profusion of geographical fragments in the seventeenth and eighteenth centuries clumsily applied the rubric of ‘Terra Australis’ to any and all southern geographies, including applying it to multiple incompatible entities. Nevertheless, it was understood by most scholars that there was a distinction between the southern continent that had appeared for centuries on cartographers’ maps and for which a rich tapestry of resources and advantages had been imagined, as opposed to the lands which the Dutch had discovered south of Java. For example, in an educational geography text published in 1791 (and hopelessly out of date with contemporary knowledge) the following clarification is made between New Holland and Terra Australis:

Q. What is New Holland?
A. It is a very extensive country, situated south of the Moluccas; it has been discovered in the present century; the inhabitants are blacks, very ill made, and live miserably; the English have a settlement on the eastern coast, called Botany Bay, where they send their convicts.

Q. What is the Terra Australis?
A. It is a name given to all the lands situated south of Africa; part of the coasts were discovered, in 1503, by Captain Gonneville, who was thrown upon them by a tempest; since that the Europeans have endeavoured to form establishments there, but without

---

success, from the intractable disposition of the natives. A French navigator discovered another coast, in 1734, which he called the Circumcision.⁴²⁵

So while ‘Terra Australis’ was sometimes malappropriated, the fundamental ontological disambiguation between Australia and the southern continent was widely comprehended in the eighteenth century. However, once it had been proved that there was no southern continent, it meant there was nothing stopping authors from redeploying the trope of Terra Australis in hitherto incompatible modes.

At the end of the eighteenth and start of the nineteenth centuries, there did not yet exist any agreed name for the landmass discovered by the Dutch, in part because there was still some uncertainty as to whether Australia was a continent as opposed to being a collection of large islands separated by straits. With the circumnavigation and survey of Australia of 1801-1802 by Matthew Flinders, that uncertainty was mostly cleared up (though a few question marks still hung over various rivers and inlets). Flinders subsequently tried to make sense of the prevailing toponymic confusion when he published an account of that circumnavigation in 1814:

The vast regions to which this voyage was principally directed, comprehend, in the western part, the early discoveries of the Dutch, under the name of NEW HOLLAND; and in the east, the coasts explored by British navigators, and named NEW SOUTH WALES. It has not, however, been unusual to apply the first appellation to both regions; but to continue this, would be almost as great an injustice to the British nation, whose seamen have had so large a share in the discovery, as it would be to the Dutch, were New South Wales to be so extended. This appears to have been felt by a neighbouring, and even rival, nation; whose writers commonly speak of these countries under the general term of Terres Australes. In fact, the original name, used by the Dutch themselves until some time after Tasman's second voyage, in 1644, was Terra Australis, or Great South Land;

and when it was displaced by New Holland, the new term was applied only to the parts lying westward of a meridian line, passing through Arnhem's Land on the north, and near the isles of St. Francis and St. Peter, on the south; all to the eastward, including the shores of the Gulph of Carpentaria, still remained as Terra Australis…

It is necessary, however, to geographical precision, that so soon as New Holland and New South Wales were known to form one land, there should be a general name applicable to the whole; and this essential point having been ascertained in the present voyage, with a degree of certainty sufficient to authorise the measure, I have, with the concurrence of opinions entitled to deference, ventured upon the re-adoption of the original TERRA AUSTRALIS; and of this term I shall hereafter make use, when speaking of New Holland and New South Wales, in a collective sense; and when using it in the most extensive signification, the adjacent isles, including that of Van Diemen, must be understood to be comprehended. 426

As it turns out, it was an additional suggestion Flinders made in a footnote to this passage which was eventually adopted as the accepted name for the continent: “Had I permitted myself any innovation upon the original term, it would have been to convert it into AUSTRALIA; as being more agreeable to the ear, and an assimilation to the names of the other great portions of the earth.” 427 Yet even after ‘Australia’ became the accepted designate for the continent, it remained common for writers to use ‘Terra Australis’ as well as ‘Great South Land’ and ‘Antipodes’ as interchangeable terms for Australia. Ernest Favenc in his 1888 history of Australia is an example of an author employing various monikers to refer to Australia. He runs through southern continent, Terra Australis, the South Land, Great South Land, Southern Land, New Holland, Australia, and uses more local names such as Gulf of Carpentaria and Arnhem’s

---

426 Matthew Flinders, A Voyage to Terra Australis; Undertaken for the Purpose of Completing the Discovery of That Vast Country, and Prosecuted in the Years 1801, 1802, and 1803, in His Majesty's Ship the Investigator, and Subsequently in the Armed Vessel Porpoise and the Cumberland Schooner, 2 vols., vol. 1 (London: G. and W. Nichol, 1814), pp. ii-iii.

427 Ibid., p. iii.
Land all within the scope of a few pages.\(^{428}\) This is no more than the rhetorical technique common-place to writers whereby every effort is made to not repeat a word or name, and any chance to add flair to otherwise common statements is embraced. This is still the case today.

For instance, William J. Lines titled his environmental history of Australia *Taming the Great South Land* (unarguably a compelling title), while in his 2008 Australia Day citizenship speech, then-Prime Minister of Australia Kevin Rudd proclaimed, “We, in this great south land bring these great stories together in one people.”\(^{429}\) There is even a well known song by the Australian band Icehouse titled “Great Southern Land” – an unofficial national anthem to some Australians. As creatures with a love of the familiar and a strong affinity for history, it makes a lot of sense that we would persist in calling Australia ‘Terra Australis’ or ‘Great South Land’. When we use these terms today, we are simultaneously able to evoke a sense of place, a sense of history, and a sense of local pride. ‘Terra Australis’ hints at a grand story of exploration and a grand idea we can trace to antiquity, and when we use the epithetic appellation ‘Great South Land’ we appear to confirm both a geographic and national reality.

Unfortunately, all instances of this seemingly innocuous rhetorical puffery convey a fundamental misunderstanding of the discourse of southern lands. The problem is that Australia is a southern continent, but it is not *the* southern continent. It may be a great southern land, but it is not *the* Great South Land. It is *une terre australe*, but not Terra Australis. In some ways, my point is a simple one: Australia and Terra Australis are two separate geographical entities. It is an argument – though I would like to think of it as a statement of obvious fact – that goes to the heart of my thesis: Terra Australis was no mere ‘poet’s conjecture’; throughout the early modern period Terra Australis existed in people’s minds as a real geographical entity, despite being considered a mostly unknown continent.


Terra Australis and Australia are no more synonymous than Tierra del Fuego, New Zealand, or Kerguelen or Bouvet Islands are synonymous with Terra Australis. What these entities all share with Terra Australis is coextensivity – they exist in the same place as parts of Terra Australis were imagined to exist – as well as a history of misidentification: all were temporarily thought to be part of the great southern continent, which turned out to be true for none of them. Indeed, it is impossible for such a thing to be true regardless of what land was discovered; Terra Australis was a fully realised entity that existed in the minds of its proponents as a geography independent of geographical reality.

The problem, then, with referring to Australia as Terra Australis is that it implies that Australia is Terra Australis, or Terra Australis is Australia, collapsing the histories of two distinct entities into one unhistorical muddle that hints at none of the nuances that define the story of Terra Australis as a part of the history of ideas. This is a criticism that James McClymont saw fit to make more than a century ago:

> If any proof were required of the complete absence of all connection between the theory of a *Terra Australis* and the geographical fact of the Australian continent, it would surely be found herein – that the belief in the former persisted for a hundred years after Australia was visited and mapped by Dutch navigators. And yet to this day a confusion exists between these distinct phenomena, which blurs the outlines of early Australian history.⁴³⁰

This confusion is perpetuated both in casual references to Australia as Terra Australis, and in explicit statements conflating the histories and identities of the two entities, like the following very clever sounding pronouncement: “The great southern continent was invented before it was discovered.”⁴³¹ A quip too-clever by half. To explain why, contemplate the more explicit statement of Oskar Spate in the introduction to a book titled *Terra Australis*, a statement which

---

exemplifies the exact nature of this misconception: “The central theme is the complex process by which a vast unknown, Terra Australis, was reduced to a smaller Australia, no longer hypothetical but known.” In a sense, this statement is back to front. Much of the southern hemisphere was indeed a vast unknown, but it was Terra Australis which was posited to turn that expanse into a subject of knowledge. By the time the existence of Australia had been roughly sketched out, Terra Australis had not been reduced to the entity of Australia, but to the same entity it had been throughout the sixteenth century, just a smaller, more southern version. That is, Australia and Terra Australis existed contemporaneously and shared a history, but they existed as separate entities.

Consider the following statement on the Cambridge University Library website advertising that “A new exhibition charting the European discovery of Australia and its coastline has gone on display at Cambridge University’s library.” We are informed that, “The display of maps from the 16th to the 20th Century, starts with imaginary images of the country.” But there are no imaginary images of Australia, because before its European discovery there was no concept of Australia in Europe. You can no more have imaginary images of a real land unknown to exist than you can have real images of an imaginary land believed to exist. In European discourse Australia does not exist until it is discovered by the Dutch in the seventeenth century. Hence, those images at the Cambridge University Library are of Terra Australis, and, eventually, of both Terra Australis and Australia. This confusion about Terra Australis prefiguring Australia – about an imaginative geography somehow being turned into a corporeal geography – evokes one of the most insidious phrases ever applied to the subject, that of the “proto-history of Australian discovery”. Unless an author’s intention is to actually suggest that Europeans were mystical soothsayers, then comments like this one – “I discovered that the ancient Greeks had sensed it

was there because something had to balance the white bit at the top of the globe” – are unintentionally but absurdly misleading.\footnote{Sara Wheeler, \textit{Terra Incognita: Travels in Antarctica} (New York: The Modern Library, 1999), p. xv.}

Concepts of Terra Australis were not concepts of Australia; knowledge of Australia was not knowledge of Terra Australis. This may seem a pedantic point, but to lose sight of it is to lose sight of what makes sense of the discourse of Terra Australis.

*****

No matter how one tells the story of Terra Australis, it ineluctably ends, as it ends in the stories of nearly all imaginative geographies, in abandonment: the story of a meme pursued to obsolescence.

But it took many revisions to the outline of Terra Australis to reach that point, and in the meantime expectations were continually being softened, each revision to the southern continent’s prospective geography eroding not just a little more of the continent, but a little more of what made the continent worth believing in. As an entity becomes less valuable, less desirable, and less interesting, and as the authority affirming the existence of the entity erodes, the imperative to believe in its existence dissolves; eventually a point is reached where, faced with geographical dissonance, the easier and more reasonable course of action is to abandon belief in the original entity, rather than persist with efforts to reconcile new data.

What makes the story of the imaginary southern continent so remarkable is the moment at which that point was reached – the moment when the cost of belief outweighed the lure of the entity being imagined. This is what is so hard to understand about the imaginary southern continent: we know how the idea developed, we know the timeline of the various key discoveries, and so we know – looking back, from a modern perspective – that it would have made perfect sense had the idea of Terra Australis been abandoned sometime in the seventeenth century. But it was
not. This was an idea so powerful, so potent, and so real in the minds of the early moderns, that it was not abandoned until the 1770s. And in what circumstances. It took one of the world’s greatest explorers in one of history’s most remarkable voyages of discovery to finally confute the idea of a great southern land. Two millennia of imagining – and it was not till the very end of the Age of Discovery that Terra Australis was laid to rest.

That is the power of imaginative geography.
Primary Sources


Crozet, Julien. *Crozet's Voyage to Tasmania, New Zealand, the Ladrone Islands, and the Philippines in the Years 1771-1772*. Translated by H. Ling Roth. London: Truslove & Shirley, 1891.


Mercator, Gerhard, Henricus Hondius, Johannes Janssonius, and R.A. Skelton (introduced by). *Atlas, or, a Geographicke Description of the World, Volume 1*. Amsterdam: Theatrum Orbis Terrarum, 1968 (original 1636).


Ouiseau, J. *Practical Geography, with the Description and Use of the Celestial and Terrestrial Globes*. London: C. Macrae, 1794.


**Secondary Sources**


———. "A Secret First: Did European Navigators Explore and Map the West Coast of the Americas before Columbus Died in 1506?" *Mercator's World,* no. 7 (2002).


Mackaness, George. *Some Proposals for Establishing Colonies in the South Seas.* Sydney, 1943.

Major, R.H. *Memoir on a Mappemonde by Leonardo Da Vinci, Being the Earliest Map Hitherto Known Containing the Name of America.* London, 1865.


———. *The Theory of an Antipodal Southern Continent During the Sixteenth Century*. Hobart, 1892.


Stevens, Wesley. "The Figure of the Earth in Isidore's 'De Natura Rerum'." *Isis* 71, no. 2 (1980).


The subject of Antipodes can be broken down into three core topics. The first concerns the shift in ancient Greece from the conception of the earth as a disc (or pillar, bowl, etc) to the conception of the earth as a sphere (a necessary antecedent to any southern-hemispheric land). The second relates to the ancient zonal theory of climate, which largely determines the question of habitability of any potential southern lands. The third and central topic is concerned with who first posed the question: might land exist in the southern hemisphere? There is no dearth of writing on any of these topics, but there are considerable problems common to scholars in this field. For example, belief that the Antipodes were originally posited either because the Greeks subscribed to a principle of cosmographic symmetry or because they believed the lands in the northern hemisphere must necessarily be balanced by an equal quantity of land in the southern hemisphere (I refer to this as the theory of equipoisure) is widespread amongst historians and lay readers alike. These are, however, assumptions of modern scholars, irredeemably at odds with extant evidence. Neither theories of symmetry or equipoisure played any role in ancient cosmography relating to the southern hemisphere. This is just one of a series of errors and assumptions which I intend to discuss in the following pages, as I explore the three topics outlined above. My intention is to remove (false) certainty from the stable of Antipodean knowledge, replacing misconceptions with a more rigorous set of conditional propositions. In the end I argue for a bare few facts and conclusions, but those I do argue for are supported by the evidence, allowing for a strong foundation for any further forays into the Antipodes.436

A Spherical Earth

For there to be a southern hemi-sphere, there must first be a sphere, and so the logical starting-point for an inquiry into the subject of Antipodes is the genesis of the idea of the earth’s sphericity. As Arthur Heidel had shown, there is no evidence predating Plato (420 – 348 BC) and Socrates (470 – 399 BC) of such a conception of the earth, and certainly the popular notion that Pythagoras was the first to conceive

436 The focus of this paper is the European concept of Antipodes that eventually evolves into the imagined entity of Terra Australis. There are non-European discourses that independently develop a number of similar cosmographic concepts to those discussed in this paper, but as they do not intersect with the original ancient Greek discourses, they fall outside the scope of my discussion.
a spherical earth is not supported by evidence. Nevertheless, many authors persist in crediting Pythagoras (circa. 580 – 500 BC) with the conception of the earth’s sphericity. Some point to comments in Aristotle’s (384 – 322BC) seminal work of cosmology, On the Heavens. But while Aristotle does mention a “Pythagorean view” when discussing the earth’s spherical geometry (On the Heavens 2.2.285b), without more information – which Pythagoreans, from what period, and espousing exactly what views – this is suggestive and nothing more.

Many more scholars make the same attribution to Pythagoras based on the writings of doxographer Diogenes Laertius (3rd century AD). Diogenes, probably relying on Favorinus (circa. 80 – 160 AD), says, “we are told he [Pythagoras] was the first to call the heaven the universe and the earth spherical, though Theophrastus says it was Parmenides, and Zeno that it was Hesiod.” Diogenes also tells us that Alexander Polyhistor of the 1st century BC wrote of a number of Pythagorean tenets which he purportedly found in “the Pythagorean memoirs”. Those tenets include “a universe animate, intelligent, spherical, with the earth at its centre, the earth itself too being spherical and inhabited round about. There are also antipodes, and our ‘down’ is their ‘up’.” Yet far from being convincing evidence that Pythagoras (or his early disciples) held such views, this could be read as evidence that Alexander better fits the label of ‘Pythagorean’ than Pythagoras himself. Given what we know of the practice of scholastic accommodation in ancient Greece, and given the degrees of separation of these ancient but nevertheless secondary texts from the originals (if any ever existed), we simply

---

439 In the context of ancient Greek natural philosophy, second-hand sources fall into two basic categories: doxographies, whose principal purpose is to catalogue the arguments and works of their philosopher predecessors, and those sources where the author is expounding upon a subject of natural philosophy and as a matter of course quotes or references contemporaries or predecessors for the purposes of authority or criticism. Hermann Diels coined the term ‘doxography’ in his foundational work, Doxographi Graeci, (Hermann Diels, Doxographi Graeci (Berlin: Typis et impensis G. Reimeri, 1879). Diels’ research proved that despite the hundreds of years separating doxographies from the philosophers they discuss, their source work was actually much more contemporary with those philosophers – being the monumental lost work of Theophrastus, Tenets in Natural Philosophy (Theophrastus was the pupil of Aristotle and an important thinker in his own right, 371 – 287BC). On this basis, Diels argued for the reliability of these doxographies, discounting the dangers of corruption. Subsequently, many scholars have utilised these sources, sometimes with less scepticism than the inherent methodological dangers warrant. For further discussion of the methodological issues surrounding doxographies, see Charles H. Kahn, Anaximander and the Origins of Greek Cosmology (New York: Columbia University Press, 1960), pp. 11-24; Jaap Mansfeld and David Runia, Aetiana: The Method and Intellectual Context of a Doxographer (Leiden: Brill, 1997), chapters 1 and 2; David Runia, “What Is Doxography?,” in Ancient Histories of Medicine: Essays in Medical Doxography and Historiography in Classical Antiquity, ed. Philip Van der Eijk (Leiden: Brill, 1999); Jaap Mansfeld, "Sources," in Cambridge Companion to Early Greek Philosophy, ed. A.A. Long (New York: Cambridge University Press, 1999).
cannot conclude that Pythagoras advocated earthly sphericity or the existence of inhabited Antipodes.\textsuperscript{441} (The same applies to Diogenes Laertius’ comments about Parmenides (circa. 520 – 450 BC), where he says, “He was the first to declare that the earth is spherical and is situated in the centre of the universe.”\textsuperscript{442}) It is not ridiculous to assume that the Pythagoreans did subscribe to a conception of earthly sphericity, but we cannot pretend to know one way or another. The reality is that we have no original works to draw upon, nor any remotely contemporaneous accounts, that could provide authority for such an attribution to Pythagoras.

As it happens, an even earlier figure is sometimes posited as the father of sphericity. Again based on the comments of Diogenes Laertius in \textit{Lives of Eminent Philosophers}, some authors look to Anaximander (circa. 610 – 546 BC):

\begin{quote}
He held that the parts [of the physical world] undergo change, but the whole is unchangeable; that the earth, which is of spherical shape, lies in the midst, occupying the place of a centre... He was the first to draw on a map the outline of land and sea, and he constructed a globe as well. (2.1.1-2)
\end{quote}

This, however, is scant authority for the proposition in question. The 3\textsuperscript{rd} century AD writings of Diogenes cannot shoulder the evidential burden required to prove that Anaximander subscribed to the notion of earth’s sphericity, and that he constructed a globe of the same, in the 6\textsuperscript{th} century BC. That neither Pliny (23 – 79 AD) nor Strabo (circa. 63 BC – 24 AD), both predecessors of Diogenes who discuss the contribution Anaximander made to geography, mention he believed the earth was spherical or that he constructed a globe, further militates against this proposition. Heidel further points out that Hippolytus in the 2\textsuperscript{nd} century AD suggests Anaximander viewed the earth as essentially flat (\textit{Refutatio} 1.6.3).\textsuperscript{443} Another name sometimes mentioned is Eudoxus (circa. 408 – 355 BC), proffered as either the father of the concept of earthly sphericity, or at least as a disseminator of the idea. But, again, the lack of reliable evidence precludes certainty on this point.

\textsuperscript{441} Accommodation is the term William Heidel uses to refer to the revisionist practice whereby the genesis or development and transmission of certain ideas is credited to earlier philosophers or philosophical schools, despite there being insufficient evidence (often none whatsoever) to make such a connection. (William Arthur Heidel, \textit{The Frame of the Ancient Greek Maps}, 1937 reprint ed. (New York: Arno Press, 1976), pp. 66-67.)

\textsuperscript{442} For more detail see Heidel, \textit{The Frame of the Ancient Greek Maps}, pp. 70-80.

\textsuperscript{443} Heidel, \textit{The Frame of the Ancient Greek Maps}, p. 67.
If we are to rely on the available evidence, the earliest philosopher who we can be sure did hold the earth to be spherical is Plato, though there are no indications that this idea was original to him or Socrates. But even Plato is a less definitive source of information about the idea of sphericity than we might like. Scholars disagree as to whether a passage in the *Phaedo* (108e-109a) describing the earth as ‘round’ means spherical, or disc-like. A few paragraphs later Plato has Socrates state:

‘Well then, my friend, in the first place it is said that the earth, viewed from above, resembles those balls made of twelve pieces of leather in its variegation and in its division into different colours, of which our colours, the ones the painters use, are as it were samples.’

But this does not settle the question. As J.S. Morrison notes, “the image of the balls of twelve pieces of leather is introduced in such a way as to illustrate the variegation in colour of this upper surface, not its spherical shape.”

A passage in Plato’s *Timaeus* is more instructive – though I would be more cautious than Heidel, who is likely to lead readers into confusion where he suggests that in the *Timaeus* “the sphericity of the earth and the possibility, at least, of antipodes, are taken for granted.”

The passage of Plato in question does not broach cosmography; rather, it expounds a general principle of geometry:

> When a thing is uniform in every direction, what pair of contrary terms can be applied to it and in what sense could they be properly used? If we further suppose that there is a solid body as the centre of it all [the universe], this body will not move towards any of the points on the extremity, because in every direction they are all alike; rather, if a man were actually to walk round and round that body, he would repeatedly stand at his own antipodes and call the same point on its surface ‘above’ and ‘below’. For the whole being spherical, as we said just now, there is no sense in speaking of one region as above, another below.

As Francis Cornford in his commentary to the *Timaeus* points out, “This paragraph is in general terms, referring to any spherical figure, at the centre of which is a solid body. It applies to the actual universe,

---

445 Morrison, “The Shape of the Earth”, p. 110.
446 Heidel, *The Frame of the Ancient Greek Maps*, p. 84.
because this has a solid body at its centre, viz. the Earth.” What we can deduce, then, is that Plato regards the earth as a sphere, and that should a person find themselves in the southern hemisphere – antipodal to Europe – then they would be in an equal position to a person in Europe, neither above nor below their counterpart. However, he does not give any hint as to whether he believes a terrestrial Antipodes does in fact exist in the southern hemisphere, and, indeed, he does not even speak of the concept of Antipodes, but rather of the concept of entities that are geometrically opposite (antipodality).

If Plato is somewhat ambiguous in his comments about the shape of the earth, Aristotle is altogether more definitive in On the Heavens. From the nature of his comments and the length of his proofs, it is clear that by the time of Aristotle the question of the earth’s sphericity was an established philosophical subject. He writes:

Some think it [the earth] spherical, others flat and shaped like a drum. These latter adduce as evidence the fact that the sun at its setting and rising shows a straight instead of a curved line where it is cut off from view by the horizon, whereas were the earth spherical, the line of section would necessarily be curved. They fail to take into consideration either the distance of the sun from the earth, or the size of the earth’s circumference, and the appearance of straightness which it naturally presents when seen on the surface of an apparently small circle a great distance away. This phenomenon therefore gives them no cogent ground for disbelieving in the spherical shape of the earth’s mass. (2.13.294a)

Though we do not know with which of Aristotle’s predecessors the concept of earthly sphericity originated, we can state with certainty that by the 4th century BC the concept was well-established in philosophical discourse, eventually becoming orthodoxy.

It is once the earth is conceived as a sphere that the notion of a southern hemisphere comes into play – but for the time-being the southern hemisphere exists as a knowledge void. Eventually curiosity and the challenge to complete the picture of the earth-sphere would compel philosophers to question whether a land mass existed there; but before that they would wonder whether human existence in the southern hemisphere was possible – a question of climate.

---

448 Cornford, Plato’s Cosmology, p. 263.
The Zonal Theory of Climate

In any discussion of ancient Greek concepts of climate, one will always encounter the antiquarian term, klimata. Because most ancient scholars believed the earth was the centre of the universe, it appeared that the stars travelled around the earth, often conceived as part of a great celestial sphere centred on the earth. The apparent rotation of this celestial sphere determined north and south, east and west. Like the stars, the sun also appears to travel around the earth, yet not quite in conjunction with the celestial sphere – it seems to travel roughly east to west, but on a slight tilt to the equator. Hence it was thought that the sun independently travels around the celestial sphere over the course of a year. The path of the sun around the celestial sphere is known as the ecliptic.450 The klimata, then, are latitudinal bands encircling the earth determined by ‘inclination’ towards – or exposure to – the sun. In this sense klimata is more an astronomical term than a geographical one, but of course solar exposure seemed to have a clear relationship to climate.

At some stage the relationship between klimata (exposure to the sun) and meteorology (particularly winds, heat and cold, and precipitation) was developed into the theory of zones. The earliest exposition of a fully developed zonal theory of climate is found in Aristotle’s Meteorologica (2.5.362b), where he explains that “it is not difference of longitude but of latitude that brings great variations of temperature.”451 Yet while Aristotle is the earliest scholar who we can be certain subscribed to such a theory of zones, it is clear he is not the originator of this theory. Some scholars follow Plutarch of the 1st century AD who states:

Pythagoras says that, as the celestial sphere is distributed into five zones, into the same number is the terrestrial; which zones are the arctic and Antarctic, the summer and winter tropics (or temperate zones), and the equinoctial; the middle of which zones equally divides the earth and constitutes the torrid zone; but that portion which is in between the summer and winter tropics is habitable, by reason the air is there temperate.452

---

However, this attribution is unreliable. Not only is it removed from the supposed original by six centuries, but neo-Pythagoreans are notorious for attributing to earlier scholars, especially Pythagoras, an originary place in the heritage of contemporary ideas.

At any rate, most writers identify Parmenides, not Pythagoras, as the father of the theory of zones, due to the comments of Posidonius in *The Ocean* in the 1st century BC, which we know through Strabo: “Poseidonius, then, says that Parmenides was the originator of the division into five zones...” (2.2.2) Despite what is relayed by Posidonius, this information must be taken sceptically; even if we trust Strabo’s report of Posidonius, there is doubt over how well Posidonius has represented Parmenides. Scholars have also cited the comments of the doxographer dubbed Aëtius (circa. 2nd/1st century BC):

Parmenides says that there are rings wound one around the other, one made of the rare, the other of the dense, and between them there are others mixed of light and darkness. What surrounds them all like a wall is solid, beneath which there is a fiery ring, and what is in the middle of all rings is [solid] around which there is again a fiery [ring]. The middlemost of the mixed rings is for them all the [origin] and [cause] of motion and coming into being which calls steering goddess, and key-holder, and Justice, and Necessity. Air has been separated off from the earth vaporized because of the latter’s stronger compression; the sun is an exhalation of fire and such is the Milky Way. The moon is a mixture of both air and fire. Aether is topmost, surrounding all; beneath it there is that fire-like part which we call sky; beneath it is what surrounds the earth.453 (2.7.1)

While most scholars accept the veracity of this doxography’s account of Parmenides, there is, nevertheless, nothing in this much debated passage which implies a system of climatic zones, nor anything that might look like a precursor to such a system.454 Interestingly, it may be this very Aëtian passage which led Posidonius to (unjustifiably) declare Parmenides the originator of the theory of zones,

much the same as modern scholars have done.\textsuperscript{455} Thus, while we are left with some tantalising traces, there is not enough here to allow us to confidently track the theory of zones back to Parmenides.

To conclude, then, it is only around the time of Aristotle that we can confidently say the earth was recognised as spherical, and was conceived as being divided into a series of climatic zones which determined habitability for humans. We now have the antecedent to the Antipodes thanks to the postulate of a southern hemisphere, and also the potential for Antipodeans thanks to the theorised climatic habitability of the southern temperate zone.

**Antipodes and Antipodeans**

I have suggested that for Antipodes to exist, the earth must first be conceived of as a sphere so that there is a place to situate the Antipodes. However, strictly speaking, an antipodal landmass – that is, a landmass located opposite to the *oikoumene* (the known world of Europe, Asia, and Africa) – could exist on a flat or drum-shaped or disc-like earth. Indeed, Benjamin Olshin identifies the cosmography of Anaximander (who believed the earth was flat), as represented by Hippolytus (circa. 170 – 236 AD), as one of the earliest positings of an antipodal landmass.\textsuperscript{456} However, the passage in question does not specifically mention an antipodal landmass, only an antipodal surface of the earth:

\begin{quote}
[Anaximander] asserted that there is an eternal motion, by the agency of which it happens that the heavens are generated; but that the earth is poised aloft, upheld by nothing, continuing on account of its equal distance from all [the heavenly bodies]; and that the figure of it is curved, circular, similar to a column of stone. And one of the surfaces we tread upon, but the other is opposite.\textsuperscript{457} (1.5)
\end{quote}

What is being said here is not geographical; rather, it is an explanation of geometry – the mention of an opposite surface to the known world describes the shape of the earth, not the characteristics of unknown regions. If we were to say that this is a reference to the Antipodes, then we would also be obliged to say that all ancients who believed the earth to be disc-shaped necessarily conceived of an Antipodes, for such a shaped earth would have to have an opposite side. Clearly, though, there is an important

\textsuperscript{455} Heidel, *The Frame of the Ancient Greek Maps*, p. 91.

\textsuperscript{456} Benjamin Olshin, "A Sea Discovered: Pre-Columbian Conceptions and Depictions of the Atlantic Ocean" (PhD, University of Toronto, 1994), p. 269.

\textsuperscript{457} Hippolytus, "The Refutation of All Heresies," (Edinburgh: T & T Clark, 1877).
difference between positing the existence of a specific landmass, and elucidating the existence of various surfaces of a three-dimensional geometry.

Moreover, sphericity features in this article as an antecedent to the idea of the Antipodes because a spherical earth is qualitatively different to other geometric shapes. As will be seen a little later in Aristotle’s description of Anaxagoras’s cosmography, a disc-like earth is readily conceived to have a surface and an underside – the top side is the surface of the earth where you find the oikoumene, while the other (under-) side is also technically a surface, but is inevitably conceived as the foundations of the earth. We know that while the earth was still considered to be flat or a cognate shape, philosophers pondered what peoples or lands lay beyond the boundaries of their limited knowledge. They were curious about what existed upon the surface of the earth – only that surface was not seen as extending to their geometric antipodes. A sphere, however, is comprised of one single, unbroken surface. There is a conceptual underside in terms of that region opposite to the oikoumene, but one cannot avoid conceiving of the earth’s surface holistically. Thus, when the earth was eventually conceived as a sphere a new knowledge void appeared, because the surface of the earth now extended around the globe.

Who, then, first addressed the question of the composition of the surface of the southern hemisphere? According to some authors, Aristotle looms as the most likely contender. James Romm points to Aristotle’s Meteorologica and argues: “Beginning with Aristotle, Greek geographers speculated about a second habitable world in the southern hemisphere matching the oikoumēnē in the North.” Yet all that Aristotle says is that the southern hemisphere possesses a habitable climate. Having outlined the southern and northern temperate zones, Aristotle continues: “These are the only habitable regions; for the lands beyond the tropics are uninhabitable...” (2.5.6) This can hardly be declared the first recorded comment about the existence of Antipodes; ‘lands beyond the tropics’ may merely refer to part of the African continent, or it may simply mean, ‘if there was land beyond the tropics, it would be uninhabitable.’

There is, however, another curious Aristotelian passage in On the Heavens which is ostensibly suggestive of other peoples or lands. The following comments are made in the context of a discussion on the rotation of the globe and how we might in abstract terms define left and right, up and down:

---

Clearly therefore the invisible pole is the upper, and those who live in the region of it are in the upper hemisphere and to the right, whereas we are in the lower and to the left. It is the contrary of the Pythagorean view, for they put us above and on the right, and the others below and on the left. The truth is just the reverse. Nevertheless in relation to the secondary revolution, *i.e.* that of the planets, we are in the upper and right-hand part, and they in the lower and left; for the place from which these bodies start is on the opposite side—since they move in the opposite direction—so that we are at the beginning and they at the end. So much for the dimensional parts of the world and those which are defined by their position. (2.2.285b)

Who are “the others below”, according to the Pythagoreans, or those who live in the upper region and to the right, according to Aristotle? The most convenient and satisfying answer would be Antipodeans who live in the Antipodes. However, I strongly doubt that Aristotle intended to convey such a message. Throughout antiquity, philosophers indulged a fairly common convention whereby, in the context of a geographic discussion, they refer to other peoples and other lands so as to identify a space on the earth; the reference to these people or lands is for heuristic purposes—that is, to allow the author to conveniently refer to different regions without necessarily intending to assert that there are, in fact, other peoples or other lands.

Breaking from chronology momentarily, consider Geminus of Rhodes of the 1st century BC. In his *Introduction to the Phenomena* he provides a detailed discussion of the different regions—and potentially peoples—of the globe:

Of those who dwell on Earth, some are called *synoikoi*, some *perioikoi*, some *antoikoi*, and some *antipodes*. *Synoikoi* are those who dwell around the same place in the same zone [as we do]. *Perioikoi* are those who dwell in the same zone but around the circle. *Antoikoi* are those who dwell in the southern zone in the same hemisphere. *Antipodes* are those who dwell in the southern zone in the other hemisphere, lying on the same diameter as our *oikoumene*, which is why they have been called ‘with feet opposite’.459 (16.1)

---

Interpreted literally, Geminus appears to be making very bold claims about the existence of humans in the four quadrants of the globe. But Geminus is doing no more than using a heuristic device which allows him to refer conveniently and vividly to the different regions of the earth. This understanding goes against the literal grain of this passage of his text, but we know this is the case not merely because it is familiar as a convention used by other philosophers, but because Geminus later explains his exact meaning:

When we speak of the southern zone and of those dwelling in it, as well as the so-called *antipodes* in it, we should be understood in this way: that we have received no account of the southern zone nor whether people live in it, but rather that, because of the whole spherical construction, and shape of the Earth, and the path of the Sun between the tropics, there exists a certain other zone, lying toward the south and having the same temperate character as the northern zone in which we live. In the same way, we speak of the *antipodes*, not in the sense that people positively dwell diametrically opposite us, but rather that there is on Earth a certain habitable place diametrically opposite us. (16.19-20)

The example of Geminus is salutary. Armed with the knowledge that geographical treatises sometimes employ these heuristic devices, we should re-evaluate the ancient texts which mention Antipodes or Antipodeans. For, no matter if a scholar implies through their language belief in the existence of other peoples and other lands, they may simply be using a tool of rhetoric to convey an understanding about space, not geography or population.

Observe the comments of Pomponius Mela (1st century AD). He explains that the world is divided into five zones, two of which are temperate, one in each hemisphere. He continues, appearing to assert the existence of Antichthones (this term normally refers specifically to the quadrant of the southern hemisphere adjacent to the *oikoumene*): “The remaining two habitable zones have the same annual seasons, but not at the same time. The Antichthones inhabit one, we the other.”\(^{460}\) (1.4) Again, the tendency has been to interpret declaratory statements literally, but we court error in doing so. These sorts of comments are often part rhetoric, part factual statement – the rhetorical devices serving to illustrate the substantive point being made, in this case that there are habitable zones in both

hemispheres. Later, Mela indicates as much when he drops the absolute and adopts the conditional: “If, however, there is a second world, and if there are Antichthones located directly opposite to us in the south...” (1.54) With this in mind, I would assess Aristotle’s comments as being merely indicative of regions, given the comment about “others below” is in a discussion squarely concerned with orientation of the earth, not cosmography or geography, and he makes no mention of antipodal lands or people elsewhere.461

If not Aristotle, nor Plato, many authors identify Eratosthenes (circa. 276 – 194 BC) as having posited Antipodes and Antipodeans. A fragment from Eratosthenes’ poem, *Hermes*, has survived to modern times. In it Eratosthenes writes of the earth:

Five encircling zones were girt around it: two of them darker than greyish-blue enamel, another one sandy and red, as if from fire....Two others there were, standing opposite one another, between the heat and the showers of ice; both were temperate regions, growing with grain, the fruit of Eleusinian Demeter; in them dwelt men antipodal to each other.462

Within the context of the zonal theory of climate, Eratosthenes speaks of the temperate regions of the earth – one north, one south – possessed of both grain and men. But is talk of grain and antipodal men rhetorical, or literal? Was Eratosthenes actually positing an antipodal landmass inhabited by humans, or was he merely using these concepts to vivify his discussion of zones and give a greater sense of place to an otherwise elusive subject? We have seen how other scholars have used talk of Antipodes and Antipodeans to illuminate a discussion of zones, so the possibility cannot be ruled out here.

**Crates**

Our inquiry finally brings us to Crates of Mallos (circa. 180 – 150BC), librarian at the Greek city of Pergamum, and a man whose name has become totemic for writers introducing the history of the

---

461 As indicated earlier, where Plato comments in *Timaeus* (62d-63) that if a man were to walk round a spherical body “he would repeatedly stand at his own antipodes,” we must be careful not to interpolate the later definition of antipodes as a geographical place opposite to the *oikoumene*. Here it merely means opposite. Interestingly, once scholars eventually did posit an Antipodes, if they relied upon the following premise articulated by Plato in the *Timaeus* it would logically lead them to posit Antipodeans: “...in all regions where inordinate cold or heat does not forbid it mankind exists at all times in larger or smaller numbers.” (23a) (Cornford, ed., *Plato's Cosmology*.)

imaginary southern continent. Though we have no original texts from Crates, through Strabo’s *Geography* we know that Crates posited an Antipodes, as well as a second southern landmass, and possibly a second northern landmass.⁴⁶³ Strabo tells us that, like his contemporary Aristarchus, Crates was driven to reconcile the following comment found in Homer’s *Odyssey* (Book I): “...the Ethiopians that are sundered in twain, the uttermost of men, abiding some where Hyperion [the Sun] sinks and some where he rises.”⁴⁶⁴ It is only by dint of Crates’ interpretation of this Homeric comment that we are furnished with his cosmography, for Strabo was resolute in his conviction that geography only properly treat of the known world, but he did make exceptions where it involved Homer, a figure with whom Strabo, like so many others, was obsessed. There is no reason to think that Homer did in fact believe the earth was a sphere; indeed, most classicists and historical geographers recognise Homer as a flat-earther. However, Crates – a dedicated and influential Homeric scholar – believed with his Stoic contemporaries that the earth was spherical. Thus, for the greater glory to redound to Homer, Crates had to find a way to accommodate the geographic content from Homer’s works with a spherical earth, which he did with his quadripartite cosmography:

Crates, following the mere form of mathematical demonstration, says that the torrid zone is ‘occupied’ by Oceanus and that on both sides of this zone are the temperate zones, the one being on our side, while the other is on the other side of it. Now, just as these Ethiopians on our side of Oceanus, who face the south throughout the whole length of the inhabited world, are called the most remote of the one group of peoples, since they dwell on the shores of Oceanus, so too, Crates thinks, we must conceive that on the other side of Oceanus also there are certain Ethiopians, the most remote of the other group of peoples in the temperate zone, since they dwell on the shores of this same Oceanus; and that they are in two groups and are ‘sundered in twain’ by Oceanus. Homer adds the words, ‘abiding both where Hyperion sets and where he rises,’ because, inasmuch as the celestial zodiac always lies in the zenith above its corresponding terrestrial zodiac and inasmuch as the latter does not by reason of its obliquity extend outside the territory of the two Ethiopias, we must conceive that the entire revolution of the sun takes place within the width of the celestial zone, and that his risings and his settings take place herein, appearing differently to different peoples, and now in this sign and now in that. (1.2.24)

Making sense of this passage, we get the following picture of Crates’ cosmography. The river ocean (Oceanus) runs around the equator; a second river ocean running north-south bisects the equatorial Oceanus. This effectively divides the world into four quadrants. There are “Ethiopians” – meaning a landmass – on “our” side of Oceanus (that is, the side of the oikoumene), and Ethiopians on the southern side in another landmass. There is a further group of Ethiopians in the second quadrant of the southern hemisphere; this landmass is directly opposite the oikoumene. The fourth landmass is not discussed, but we can interpolate its presence given that Oceanus is presented in the form of a river, implying the presence of something else in this quadrant of the globe (which, admittedly, could be a sea). With this, we have the first extant, unambiguous postulation of Antipodes, and Antipodeans.

If this is the extent of what we know about Crates’ cosmography, it would not appear to be the case if you read most authors who discuss his contribution to the idea of Antipodes. Of particular concern is the orthodoxy which tells us that Crates constructed his cosmography based upon a principle of cosmographic symmetry. This misunderstanding may be linked to the numerous, overwhelmingly similar, and commonly reproduced drawings modern authors have furnished as interpretations of what Crates’ globe would have looked like. See figures 1 – 3.

![Figure 1](image)

**Figure 1.** Representation of Crates’ globe in Norman J.W. Thrower, *Maps and Civilization: Cartography in Culture and Society*, 3rd ed. (Chicago: University of Chicago Press, 2007). Thrower’s accompanying commentary frames the map thus: “Crates of Mellos…constructed a large globe on which were delineated four approximately symmetrical continents…” (p. 22.)
While these drawings are only representations, we can reasonably suppose that Crates himself did produce a globe, for though Strabo does not exactly state this, it is a reasonable reading of the following passage: “...the man who would most closely approximate the truth by constructed figures must needs make for the earth a globe like that of Crates...” (2.5.10) Where we must be more circumspect is in guessing what this globe might have looked like. Strabo furnishes nothing in the way of specific detail,
and so scholars have done the obvious thing and assumed this globe would have depicted a quadripartite cosmography, with four landmasses and two circumfluent ocean rivers. Yet there is an enormous amount of room for interpretation within this minimal cosmographic framework – the landmasses could be any size, shape or location within each quadrant, the river oceans could meander or at least be less than perpendicular and uniform, and what role seas play is not even hinted at. Thus any graphic interpretation of Crates’ cosmography is necessarily speculative and tentative.

Readers and scholars who contemplate Crates’ cosmography do not merely look to the words of Strabo (and perhaps Geminos, Cicero, Macrobius and Capella465), but also to drawings representing his cosmography. Unfortunately, authors promote these representations of Crates’ globe without any caveats warning the reader that they are speculative. So compelling are these simple drawings – each of which presents a system of oceans and lands that look to be almost symmetrical – it is easy to forget they are representations: that is, original products of modern authors graphically interpreting Crates’ cosmography from a very slim base of knowledge.

The Illusions of Symmetry and Equipoisure
There are two main problems caused by this confusion over what we know about Crates’ cosmography as opposed to what we attribute as Crates’ cosmography. The lesser of these is a terminological issue. As an example, Claude Nicolet states that Crates put forward “three other oikoumenai in the other three sections of the world which he called the periokoi, the antoikoi, and the antipodes.”466 There is, however, no evidence that Crates employed these terms. Rather, these are terms applied to Crates’ cosmography by later scholars of antiquity and the Middle Ages. This, however, is a fairly minor quibble.

The far more serious problem is the now orthodox understanding that Crates’ cosmography was symmetrical, being based on a principle of cosmographic symmetry. For instance, in the highly authoritative and much-admired History of Cartography series, we are told that Crates

...represented four inhabited worlds on the surface of his terrestrial globe. Two were in the Northern Hemisphere – the one where the Greeks lived, occupying far less than half of the

465 None of these authors refer directly to Crates, but their cosmographies match the Cratesian system.
Northern Hemisphere, and another symmetrically situated in the other half. Two other inhabited worlds are found in the Southern Hemisphere, symmetrical with the two north of the equator.\footnote{Harley and Woodward, eds., \textit{History of Cartography, Volume One}, p. 163.}

The truth, however, is that we do not know what Crates’ globe looked like, even if we do have a rough description of his cosmography, and nor is there any indication in any trace that Crates’ cosmography was symmetrical either by design or accident.

One way of getting around this problem would be to qualify a statement by saying, as Peter Whitfield does, that Crates’ four lands were merely “symmetrically disposed”, which while true can only serve to encourage the reader to assume they were posited on the basis of a principle of cosmographic symmetry.\footnote{Peter Whitfield, \textit{New Found Lands: Maps in the History of Exploration} (New York: Routledge, 1998), p. 8.} But the real issue is the preponderance of statements in both lay and expert texts which do describe Crates’ cosmography as symmetrical, and as being based on a principle of cosmographic symmetry.

Take, for example, the often exemplary online old maps resource constructed by Jim Siebold, \textit{Cartographic Images}, which distils the scholarship on a plethora of subjects into erudite monographs. It is worth quoting because it is a distillation of some of the most prominent scholarship on the subject and so representative of both lay and expert opinion:

\begin{quote}
...various measurements of the earth’s size by Eratosthenes raised a curious problem. The known dimensions of the \textit{oikumene} [inhabited world] were too small relative to the estimated size of the earth sphere, the \textit{oikumene} occupied only one quadrant of the sphere. Such an imbalance in a spherical object was contrary to the Greek sense of symmetry. Crates, therefore, solved the problem on his globe by drawing three other ‘continents’ (an anticipation/prediction of the existence of the Americas, Antarctica and Australia) to provide the necessary ‘balance’ and symmetry.\footnote{Jim Siebold, “Slide #113 Monograph: Crates’ Globe,” http://www.henry-davis.com/MAPS/AncientWebPages/113mono.html.}
\end{quote}

A principle of symmetry is interpolated here into Greek cosmography without any justification. Indeed, it is not only Crates who scholars suggest subscribed to such a principle, but ancient Greek philosophers
in general.\textsuperscript{470} So, for instance, the accomplished classicist James Romm suggests that it was a type of “symmetrical” thinking that led to the positing of an Antipodes; he comments that Eratosthenes used “the adjective \textit{antipodes} for both northern and southern races, implying a strict symmetry across the equatorial plane.”\textsuperscript{471} This is, however, Romm’s own interpretation, as the term ‘antipodes’ means opposite, not mirror. Romm seems to bring to his reading the baggage of modern scholarship which suggests symmetry ordered Greek cosmography, and thus he has allowed the principle of symmetry to be assumed where it is neither a necessary consequence nor probable intimation of the passage in question.

It should be noted that in the context of cosmography and cosmology the ancient Greeks did subscribe to various ordering principles – such as beauty, perfection, and honour – the presence of which in numerous texts makes the absence of discussion of symmetry all the more striking.\textsuperscript{472} Interestingly, what is often referred to as symmetry in commentaries on classical geographical writing often turns out to be a cognate concept. For example, a number of authors make reference to this passage of Aristotle’s \textit{Meteorologica} as evidence of belief in symmetry as an ordering concept:\textsuperscript{473}

Since, then, there must be a region which bears to the other pole the same relation as that which we inhabit bears to our pole, it is clear that this region will be analogous to ours in the disposition of winds as well as in other respects. Thus, just as we have a north wind here, so they have a similar wind which blows from their pole, and which cannot possibly reach us... (2.5.13)

What Aristotle is saying, however, is something rather more elaborately reasoned than a simple assertion of symmetry. The passages preceding these comments have Aristotle explaining how the north (Etesian) winds originate – he identifies the cause as the interaction of heat with cold, or sun with water

\textsuperscript{470} Benjamin Olshin is the only author I have found who challenges the orthodoxy amongst modern authors who believe symmetry was an important ordering principle in Greek geography and cosmography. (Olshin, “A Sea Discovered”, pp. 168-169.)

\textsuperscript{471} Olshin, “A Sea Discovered”, pp. 129, 131.

\textsuperscript{472} G.E.R. Lloyd develops a convincing argument that a principle of polarity (opposites) was important in Greek philosophy, including within Greek cosmography. It seems to me an intelligent and well considered argument backed by a large body of evidence. To be clear, however: a principle of opposites does not equate to a principle of symmetry. (See G.E.R. Lloyd, \textit{Polarity and Analogy: Two Types of Argumentation in Early Greek Thought} (Cambridge: Cambridge University Press, 1966.).)

\textsuperscript{473} One such author is Chet Van Duzer (Chet Van Duzer, “The Cartography, Geography, and Hydrography of the Southern Ring Continent, 1515-1763,” \textit{Orbis Terrarum} 8 (2005), pp. 129-131.) Van Duzer (in an extended footnote to an excellent article) is one of very few authors to even raise the question of symmetry from a historiographic point of view (rather than just assuming it existed as a cosmographic/cosmological principle).
(especially ice and snow which are found about the north pole). That this relationship should be reflected in the southern hemisphere is not based on a principle of symmetry, but on an expectation of how the sun would relate to the various climates of the southern hemisphere. So, while Aristotle’s conception may be ‘symmetrically disposed’, his reasoning is not based on a principle of symmetry. He reasons based on the earth being a sphere, and how the sun then relates to the different regions of the earth (heat and cold).

Take as another example two different translations of the one passage from Plato’s *Phaedo*. This is J.S. Morrison’s translation:

‘In the first place, then, I believe that if the earth is in the midst of the *ouranos* [universe] and is round it has no need of air to prevent its falling nor of any other such force. The mere fact that the *ouranos* is the same in all directions is sufficient to support it, taken together with the equilibrium of the earth. For a mass in equilibrium, placed in the middle of something that is the same, will not have more, or less, tendency to incline in any one direction. Since the tendency will be equal it will not incline.’

Now contrast this with R.S. Bluck’s translation of the same passage. Bluck is a product of the discourse which says a principle of symmetry and also the theory I refer to as equipoisure (according to which the hemispheres must possess equal quantities of land for the sake of the earth’s balance) were important cosmological and cosmographical principles in ancient philosophy. Thus, Bluck has Plato’s Socrates say:

‘I am satisfied,’ he said, ‘in the first place, that if it is spherical and in the middle of the universe, it has no need of air or any other force of that sort to make it impossible for it to fall; it is sufficient by itself to maintain the symmetry of the universe and the equipoise of the earth itself. A thing which is in equipoise and placed in the midst of something symmetrical will not be able to incline more or less towards any particular direction; being in equilibrium, it will remain motionless.’

---

This translation, infused with the terminology of equipoise and symmetry, seems to reinforce modern assumptions. It is only by comparing it with Morrison’s translation that it becomes clear just how easily modern assumptions can be retrospectively incorporated into original sources, seemingly validating those very assumptions.

It should also be said that while scholars have at least argued that certain passages of ancient texts constitute evidence of a principle of symmetry, as far as I am aware no author has ever presented any evidence – erroneously or otherwise – to support their claims about equipoise. It is an assumption which thus far has completely escaped the historiographic strictures of evidence and argument – and yet it has become one of the most deeply entrenched fallacies in the discourse on Antipodes. Moreover, authors often conflate and confuse symmetry and equipoise, as can be observed in the following text: “For reasons of global symmetry, Greek philosophers posited the existence of a large continent in southern waters to balance the lands known to exist in the north (i.e., Europe, Asia, and Africa).”

Such statements have the double ignominy of being both conceptually confused and factually incorrect.

There quite simply is no mention of a theory which even loosely approximates to a theory of equipoise in any ancient text. This absence is all the more conspicuous when it is realised that there is a long tradition of inquiry in which scholars from antiquity sought to explain how the earth remained at equable rest, or in equable motion. What stopped the earth from tumbling off in to space? What gave our apparently fixed and immobile earth its balance? No scholar ever answered equipoise.

Conclusion

These, then, are the conclusions which are justifiable on the basis of what little evidence we have. From at least the time of Aristotle in the 4th century BC, scholars were discussing the idea that the earth is a sphere. From at least the time of Aristotle, scholars were discussing the idea that the earth is divided into five climatic zones, each hemisphere a reflection of the other (the two hemispheres share the single relevant passage can be read in the original Greek in John Burnet, *Plato’s Phaedo* (Oxford: Clarendon Press, 1911), the full text of which can be viewed online via Internet Archive (http://www.archive.org/details/platosphaedo00platuoft)


torrid zone encircling the equator). And from at least the time of Crates in the 2\textsuperscript{nd} century BC scholars were discussing the idea of southern hemispheric lands. And that is all.

This is, unarguably, an austere catalogue of conclusions, and at first glance I am sure the story of Antipodes seems the poorer for it. But what we gain by stripping away assumptions and fallacies is narrative latitude – latitude to tell a more complex and richer story about the Antipodes as we move through the Middle Ages and the Renaissance. Until now, those authors who have turned their attention to the subject of the Antipodes have rarely considered it necessary to engage their critical and analytical faculties to explain the remarkable story of how an imaginary continent was constructed, and how it became a part of the cosmographical canon, helping shape the course of history in the 16\textsuperscript{th}, 17\textsuperscript{th}, and 18\textsuperscript{th} centuries. Whether discussing ancient Greeks or early modern Britons, the simple and intuitive explanation for why southern lands were posited – symmetry and equipoise, stupid – has predetermined nearly every inquiry made into this subject.\textsuperscript{478} It is only by removing the false certainty that has made the discourse on imagined southern lands so stagnant and uncritical, that new questions can be asked, and new answers explored. By tearing this discourse wide open, a sea of inquiry beckons.

\textsuperscript{478} Notable exceptions include James R. McClymont, \textit{The Theory of an Antipodal Southern Continent During the Sixteenth Century} (Hobart, 1892); Olshin, “A Sea Discovered”; and Alfred Hiatt, \textit{Terra Incognita: Mapping the Antipodes before 1600} (London: University of Chicago Press, 2008).
Appendix Two

The Challenges of Aristotelian Cosmology

Its appeal may have been great, but there were more than mere religious quibbles with the prospect of a southern continent in the Middle Ages. An intellectual awakening in matters of natural philosophy is observable from the twelfth century. This can in part be attributed to organic advances in philosophy across time, but the equally important influence, especially from the twelfth century, was the rediscovery of ancient Greek texts, mostly translated from Arabic or sourced from Arabic libraries. But savants rediscovering the great texts of ancient Greek natural philosophy soon found that there was a downside to knowledge: the more elaborate and comprehensive one’s scientific theories, the more restraints were placed on the physical world.

One text in particular looms above all others as the single most significant influence on late medieval scientific thought: Aristotle’s *On the Heavens*. Not only was *On the Heavens* a masterwork of Greek cosmology, it was one of the only dedicated cosmological texts from antiquity to be translated in the eleventh and twelfth centuries. The irony of Aristotle’s *On the Heavens* stimulating a surge of interest in cosmological and cosmographic questions is that it was the very cosmological order of elements prescribed by Aristotle which posed one of the major hurdles to the theoretical existence of Antipodes. In his famous treatise, Aristotle states:

> If earth is enclosed by water, water by air, air by fire, and these similarly by the upper bodies – which while not continuous are yet contiguous with them – and if the surface of water is spherical, and that which is continuous with or embraces the spherical must itself be spherical, then on these grounds also it is clear that the heavens are spherical. (2.4)

---

479 Jerry Brotton, *Trading Territories: Mapping the Early Modern World* (New York: Cornell University Press, 1998), pp. 98, 116; George H. T. Kimble, *Geography in the Middle Ages* (London: Methuen and Co., 1938), pp. 44-99. From the twelfth century Arabic scholarship became more accessible to European scholars. It was at this time that many of the classics were rediscovered – arguably the most important to the earth sciences being Ptolemy’s *Almagest* and Aristotle’s *On the Heavens* – along with the many Arabic commentaries advancing these texts.

480 Edward Grant, *Planets, Stars, and Orbs: The Medieval Cosmos, 1200-1687* (Cambridge: Cambridge University Press, 1996), p. 14. The primacy which Aristotle’s *On the Heavens* attained can be explained by a number of factors, including the dearth of competing authorities on cosmology (and given the reverence for classical authority this only served to further exalt Aristotle’s cosmology), the rise of the university in the late Middle Ages and the focus within these institutions on science and philosophy, his cosmology’s general compatibility with Christian precepts, its endorsement by influential figures, and not to forget the impressiveness of the work itself. (———, *Physical Science in the Middle Ages* (New York: Cambridge University Press, 1977), p. 60; David C. Lindberg and Ronald L. Numbers, *God and Nature: Historical Essays on the Encounter between Christianity and Science* (University of California Press, 1986), p. 52.)
...the earth may be seen not only to rest at the centre, but also to travel towards the centre. (For where any part of it moves, we must assume the whole moves too.) And whither it is natural for it to go, there it is natural for it to remain. Therefore the reason is not its impartial relation to the extremes: that could be shared by any other element, but motion towards the centre is peculiar to the earth...the centre is its natural place. (2.13.295b-296a)\textsuperscript{481}

Today we understand the earth as a composite of different substances, combining to make what is referred to as the terraqueous sphere – a solid planet, with surface depressions filled by waters. As commonsensical as this appears today, there was no way to know in classical and medieval times what lay beneath the surface of the earth – let alone what the earth looked like outside of the known areas of the oikoumene. Thus, scholars built upon what knowledge they had, and in terms of physics – basically a science concerned with the composition and interaction of matter – they had the building blocks of the elements: earth, water, air, fire, and the aether that filled celestial space. So, one of the questions Aristotle addressed was seemingly quite straightforward: how do these elements combine and interact to form the earth? This question quickly became complicated, however, because in classical times it was believed that everything had a proper, or natural, place in the universe, including the elements. So it was that Aristotle grouped the matter which comprised the earth into discreet components and ordered them accordingly. His arrangement is easy enough to comprehend.

The elements are each conceived in the form of a sphere. The natural place of the most important element – earth – is the centre of the universe. The other elements are concentric to this same point at the centre of the universe, but obviously they cannot possess the same space as another element. The order of priority for the elements is earth, water, air, fire, and aether. This means that the sphere of earth is submerged within the sphere of water. The sphere of water is surrounded by air, and the sphere of air is surrounded by fire.\textsuperscript{482} Beyond that is aether. Scholars normally conceptualised this in the manner of Figure i.

\textsuperscript{482} See ibid., Book II.
This is all well and good as a theoretical exercise, which is all this cosmological arrangement amounted to in classical times. But in medieval times, Aristotle’s cosmology was taken very seriously. And once you take this system seriously, problems arise. Namely, all land should be entirely submerged within the elemental sphere of water, yet this clearly contradicts observed reality.

To resolve this inconsistency a number of different explanations were proposed by medieval scholars, with one of the more common solutions asserting that God had raised a portion of the sphere of earth above the waters and maintained it there for the benefit of mankind – the perpetual miracle. The authority for this proposition was Christ himself:

And God said, ‘Let the waters under the heavens be gathered together into one place, and let the dry land appear.’ And it was so. God called the dry land Earth, and the waters that were gathered together he called Seas. And God saw that it was good. (Genesis 1:9)

An alternative solution which had the benefit of not compromising Aristotle’s cosmology was to differentiate between the elemental earth sphere’s centre of gravity on the one hand, and centre of magnitude on the other. In the words of Pierre d’Ailly (circa. 1351 – 1420; in Ymago Mundi), “Since one part of the earth is less heavy and weighty than another, it is, therefore, higher and more elevated from the center of the world.”

483 The argument proceeded like this: there is a greater volume of earth in
the northern hemisphere because that part of the earth was exposed to the sun which has made the land dry and light. The earth submerged beneath the waters is sodden and thus heavier than the exposed regions; a cubic metre of this submerged sodden earth is much more dense than the equivalent cubic metre of aerated earth. Assuming the earth element is perfectly spherical, this means the northern hemisphere is lighter than the fully submerged southern hemisphere, and so the centre of gravity is further south than the centre of magnitude (i.e., the geometric centre of the sphere). In this way, there need not be any divine intervention to raise the earthen sphere from its proper place at the absolute centre of the universe, as this model allowed for the earth’s centre of gravity to remain true to Aristotelian cosmology, while also raising part of the earth’s surface above the waters. The result is illustrated in Figure ii.

Figure ii. Whether it is from divine intervention or from differing densities of wet and dry earth displacing the earth sphere’s centre of gravity, the same raised-earth effect is achieved.
Salvaging the Antipodes from Submersion

For the proponents of southern lands, however, Aristotelian physics was not so easily reconciled. Whichever of the above explanations was relied upon, the portion of earth raised above water would only comprise around one quarter of the earth element’s surface. The *oikoumene* alone took up close to this proportion of the earth’s surface, leaving the Antipodes submerged. So whatever the conceit raising the oikoumenical portion of the sphere above the waters, it required an additional explanation to uncover antipodal lands.

Faced with this challenge, some scholars conceded defeat; some ignored the problem, simply positing both contradictory theories of Cratesian cosmography and Aristotelian cosmology as if they were perfectly compatible; and some proposed improbable explanations. Albertus Magnus (circa. 1206 – 1280) was amongst the ranks of late medieval scholars to defer to the authority of the ancients and his own venerable predecessors, and thus he subscribed to a cosmography with an antipodal continent. But it also meant he esteemed Aristotle, which obliged him to resolve the apparent conflict between these conflicting cosmological and cosmographic systems, while staying true to both. He did so by adding a number of assumptions into the equation:

Some philosophers, as Albumasar and his followers, say that that [antipodal] land is as habitable as the one in which we are living. For since the sun and stars distribute their rays over it, it is reasonable that they dry humidity on the earth in places over which there are acute angles of the rays, and in the places over which the rays fall perpendicularly, and that humidity be generated in other places which are a longer distance from the path of the sun. According to such conclusions the place may be habitable.

Magnus expects a lot from the process of evaporation, which by this reckoning is responsible for parting seas. Others would require even more from these physical processes, as with, for example, Roger Bacon

---


485 Unusual for his time, Albertus expressly identifies Crates as the ultimate source of his cosmography: “Moreover with a sound judgment we say that the other quarter which is toward the south is habitable according to nature and habituation as we think; for it seems we ought to agree with Krices [Crates] and Homer when they say that nature brings forth two races of Ethiopians.” (Albertus Magnus, “De Natura Locorum,” in *An Appraisal of the Geographical Works of Albertus Magnus and His Contributions to Geographical Thought*, ed. Sister Jean Paul Tilmann (Ann Arbor: University of Michigan, 1971), p. 62.)

486 Ibid., p. 63.
(circa. 1214 – 1294) who draws upon the biblical Book of Esdras, wherein it is told that “six parts of the earth are habitable and the seventh is covered by waters.” Faced with the difficulty of Aristotle’s concentric elements, Bacon must uncover enough of the earthen sphere in both hemispheres to confirm the truth of Esdras. He does this by invoking two “natural processes in accordance with natural philosophy”, one based on heat, the other on cold:

…remoteness from the path of the sun induces cold, and cold multiplies moisture, and for this reason about the poles there will be a natural gathering together of waters…But according to mathematicians a larger habitable portion can be assumed there than in our quarter due to the lack of water, since in that part is the point opposite to the aux of the sun, and the sun draws much nearer there to the earth. Whence it must necessarily parch that quarter in some portion of it, and render the remaining portions as far as the pole hotter than the portions of our quarter in which we dwell. (3.16)

The reality is that no adequate solution to the conflict posed by Aristotelian physics was found in the Middle Ages – an indication not of the lack of ingenuity of interested scholars, but of the abstruseness of the problem. Scholars of the time seem quite aware of the inadequacy of the available solutions, but posed with multiple competing theories and ideas, their options were limited. Perhaps the best recourse was to do as Robertus Anglicus did in the 13th century and answer the question of whether there are habitable lands in the southern hemisphere with the simple statement: “…I think so, unless water prevents, as is likely.” As likely as it was based on Aristotle’s theory of elements, most scholars were unwilling to concede either this, or the alternative: that Aristotle’s theory of elements might be flawed. It meant both theoretical models invited scepticism and revision, the likes of which would drastically alter cosmography and cosmology in the coming centuries.

Ultimately, any inconsistencies between Aristotelian cosmology and the idea of Antipodes were resolved in the age-old tradition of scholarship: the problem was ignored. A few, of course, did perform elaborate intellectual back-flips to resolve these inconsistencies, but for the most part it was a non-issue.

---

487 Roger Bacon, *The Opus Majus of Roger Bacon*, ed. Robert Belle Burke, trans. Robert Belle Burke (Philadelphia: University of Pennsylvania Press, 1928), p. 311. The passage in question is Esdras 6:42: “Upon the third day thou didst command that the waters should be gathered in the seventh part of the earth: six parts hast thou dried up, and kept them, to the intent that of these some being planted of God and tilled might serve thee.”

488 Ibid., pp. 311, 313-314.

in scholarship. The idea of Antipodes was simply not of sufficient import to require a theoretical justification, but nor was cosmology a certain enough science to justify dogmatism in its practitioners.\textsuperscript{490} The idea of Antipodes could safely exist as just that – an idea – until knowledge, either theoretical or empirical, compelled its revision.

Appendix Three

The theory of hemispheric balance (equipoisure) and its role in the discourse of the imaginary southern continent

The idea that a large continent exists in the southern hemisphere has been around at least since the second century BC – perhaps earlier, but we cannot prove that. And it never went out of fashion. The ancient Greeks passed the idea on to the ancient Romans, who passed it on to Medieval Christian scholars, who passed it on to scholars across Europe in the early modern period. There is a clear lineage from Antipodes, to Terra Australis. The question any curious modern has when they consider this millenia-spanning history of the idea of southern lands is, why? Why conjecture a southern continent if you are an ancient Greek natural philosopher? Why conjecture a southern continent if you are a seventeenth century Italian cartographer? And the answer given to this question – whether discussing ancient, medieval, or early modern belief in a southern continent – will no doubt be familiar to readers: because it was thought that if there was not an equal quantity of land in the northern and southern hemispheres, the earth would be imbalanced. Given the earth did seem to be balanced, and there had been more land discovered in the northern than southern hemisphere, it meant there must be a great quantity of land awaiting discovery in the southern hemisphere. Hence, the conjectural southern continent.

It is a nice story, but, alas, it is not true. Just why all those different people across so many places and ages postulated and often passionately advocated the existence of a southern continent is a difficult question to answer. What I can tell you is that almost without exception, it was not because of a theory of hemispheric balance, or what I refer to as the theory of equipoisure. Elsewhere, I have already discussed misconceptions about the role that ideas of equipoise and symmetry played in the ancient origins of the idea of Antipodes: that is, they played no role whatsoever. Indeed, the concept of equipoise had not then been conceived. Nevertheless, we do know that at some stage in history a notion that the north and south hemispheres should be in ‘balance’ starts playing a part in some discussions about a possible southern continent. The question I want to address in this article is, who first posited a theory of equipoise, and what role did this notion subsequently play in the discourse of southern lands? To answer that question I am going to take up the story of Antipodes by explaining why the concept of equipoise did not exist in the Middle Ages, before tracking down the early modern

author of equipoiseur – no other than the most important cartographer of his era, Gerhard Mercator. It will then be to see how scholars subsequently modified Mercator’s theory, and the role it played in belief in southern lands. The response to the latter enquiry may contain a few surprises, for though we know that by the seventeenth and especially eighteenth centuries equipoiseur was increasingly featuring in scholarly discussions of Terra Australis, all indications are that the theory of equipoiseur acted as a justification for beliefs already held. That is, equipoiseur may have helped legitimise belief in a southern continent, but at no stage in history was equipoiseur the reason why people ultimately believed in a southern continent.

**MEDIEVAL ANTIPODES**

Why did medieval cartographers take so much care to include the Antipodes on their maps? Though space precludes me from a full and comprehensive response, the basic answer is simple: because medieval scholars adhered to pagan cosmography, and pagan cosmography taught that Antipodal lands may exist. Once the die was cast by the early fathers of medieval scholarship – St Augustine, Martianus Capella, Ambrosius Theodosius Macrobius, men who carried on the teachings of Roman scholars who themselves carried on the teachings of Ancient Greek scholars – the Antipodes were maintained as geographical lore on the strength of that tradition. The notion of Antipodes served no particular imperative – certainly no Christian imperative; it survived because it was knowledge, and though nearly always subordinate to theological concerns, knowledge continued to be valued for its own sake in the Middle Ages.

But what about the theory of hemispheric balance? It would be enough to simply tell you that there are no documents – indeed, no evidence of any kind – indicating medieval scholars contemplated a theory of equipoiseur. But I want to go further, and explain why such a theory would have made no sense even if it had been posited, because it will help explain some key points later on.

From the twelfth century AD scholarly interest in geography, cosmography, and cosmology increased significantly, partly due to organic advances in philosophy in the High Middle Ages, but also thanks to the rediscovery of ancient Greek texts, mostly translated from Arabic or sourced from Arabic libraries.492 One text in particular looms above all others as the single most significant influence on late medieval scientific thought: Aristotle’s *On the Heavens*. This treatise presented a system of physics that

quickly came to dominate the discourse on cosmology, helping scholars explain why the earth was fixed and immobile at the centre of the universe. According to Aristotle’s cosmological model, matter within the universe is subject to two types of natural motion: *rectilinear*, whereby matter moves towards the centre of the universe in straight lines, and *circular*, whereby matter moves in a circular motion about the cosmos. Circular motion applied exclusively to celestial bodies like the stars which orbited about a point without being drawn towards the centre of the universe. Rectilinear motion applied to the elements, which meant that water and earth, for example, were drawn down towards the centre of the universe according to their natural motion. This is why the earth was believed to be at the centre of the universe.

This model of physics could also explain how the earth – apparently immobile at the centre of the universe – achieves stability. It did not topple off into space because the elements all naturally tended ‘down’ – and down is always towards the centre of the universe. So if the centre is the ‘down-most’ place of the universe, and the earth was already there, there was nowhere to topple to. That the earth was immobile was explained – with circular reasoning, as it is – by the fact that the earth (comprised of the four elements) is subject only to rectilinear and not circular motion. It did not spin about an axis, for that would comprise circular motion which would contradict the tenet that matter can only travel ‘down’. This also explained why the earth could not become imbalanced, for to be imbalanced (hence tilting, wobbling, etc) would require either the earth be subjected to ‘violent’ motion, essentially an external force being applied to the earth, or that the earth be capable of circular motion, which it was not. Consider the possibility of the northern hemisphere lacking a counterpoise in terms of a southern hemisphere replete with continental lands. To make this easier to imagine, conceive the lands in the northern hemisphere to be vast and mountainous, the southern hemisphere nothing but water. This means the northern hemisphere has a greater mass and greater weight than the southern. Our conceptual sphere (spheroid) should look like it has a tumour growing in the northern hemisphere – this represents the land in the north (see Figure i).

---


494 In *On the Heavens* Aristotle states (2.13.295b-296a): “...the earth may be seen not only to rest at the centre, but also to travel towards the centre. (For where any part of it moves, we must assume the whole moves too.) And whither it is natural for it to go, there it is natural for it to remain. Therefore the reason is not its impartial relation to the extremes: that could be shared by any other element, but motion towards the centre is peculiar to the earth...the centre is its natural place.”

495 An example of violent motion is a human hitting a ball into the sky with a bat – forcing it to travel against its natural rectilinear motion.
What affect would the down-ward force that impels both earth and water towards the centre of the universe have on this spheroid? Well, despite what our modern-day gravity-obsessed minds may tell us, the spheroid would remain stable. The only possible movement according to this system is for the heavier side to move in a straight line towards the centre of the universe, so that the centre of gravity (as opposed to the centre of magnitude or geometric centre) once again coincides with the centre of the universe. If you want an example of this, read fourteenth century philosopher, John Buridan. The point is, hemispheric balance as we understand it was utterly meaningless in medieval times. What is more, many scholars were loath to admit the possibility that the earth should move at all – even rectilinearly. We must keep in mind that natural philosophy remained subordinate to theology throughout the late Middle Ages. Scholars were invigorated by the re-discovery of so many pagan texts, but they still needed to be cognisant of the heretical limits to pagan-inspired philosophising. Consider Chronicles 16:30: “The world is firmly established; it cannot be moved.” Or Psalm 104:5: “Who laid the foundations of the earth, that it should not be removed for ever.” Caught thus – between the theological tenet of a fixed and immovable earth on the one hand, and Aristotelian cosmology which

---

496 Goldstein, "The Renaissance Concept of the Earth," p. 32; Grant, Planets, Stars, and Orbs, p. 624.
497 A translation of the relevant passage of Buridan is provided in Grant, Planets, Stars, and Orbs, pp. 624-625. It would be remiss not to mention that Aristotle himself was the first to consider the problem contemplated by Buridan. He understood the problem thus: “If, the earth being at the centre and spherical in shape, a weight many times its own were added to one hemisphere, the centre of the Universe would no longer coincide with that of the earth…[T]he larger portion must prevail until it possesses the centre with its own centre, for its impulse extends to that point. It makes no difference whether we posit this or any chance portion or clod, or of the earth as a whole, for the fact as explained does not depend on smallness or greatness, but applies to everything which has an impulse towards the centre. Therefore whether the earth moved as a whole or in parts, it must have continued in motion until it occupied the centre evenly all round, the smaller portions being equalized by the greater under the forward pressure of their common impulse.” (On the Heavens 2.14.297b.)
required the earth to move only rectilinearly on the other – there was no room in late medieval cosmography for a theory of equipoise.\textsuperscript{498}

\textbf{MERCATOR}

And yet the concept of a southern continent forged on. As we transition into the 16\textsuperscript{th} century, we find that cartographers start to rely more and more on a conjectural southern continent to complete their world maps which are marred by an otherwise barren southern hemisphere, while cosmographers appropriate the southern continent as a way of explaining evidence and rumours of new lands in distant regions. Lavished with attention, over the passage of a handful of decades what had been the nebulous and amorphous concept of Antipodes bloomed into a more fully realised geographical entity: Terra Australis. By the end of the sixteenth century the southern continent was not just an idea, it was a part of the cosmographical canon, alongside the continents of Europe, Africa, Asia, and the Americas. Arguably the single-most important person in this process of turning Terra Australis into an essential component of that canon was Gerhard Mercator, through his brilliant world map of 1569, copied by cartographers all throughout Europe. Not only was Mercator’s map a pinnacle of cartography for his era, it also provided the most detailed, well-considered, and fully realised representation of Terra Australis to date. It is Mercator’s vision of Terra Australis – reproduced and added to by countless other cartographers across the years – that is most familiar to us today.

I have already indicated that it was Mercator who authored the first theory of equipoise, but at the beginning of his career he relied upon geographical lore as expressed by his more eminent peers to guide his geography. Thus, in his first world map produced in 1538, he opted for a competent but unoriginal reproduction of Oronce Finé’s 1531 double cordiform world map, with its distinctive and huge southern continent. Such derivative cartography was both effective and acceptable, but copying other cartographers’ visions of the southern continent was just a starting point for Mercator. Where his peers

\textsuperscript{498} In the 14\textsuperscript{th} century Nicole Oresme put forward well-conceived and convincing arguments for the proposition that the earth rotates about an axis. What is instructive about this is that he then declared that his rhetoric was no match for faith: “However, everyone maintains, and I think myself, that the heavens do move and not the earth: For God hath established the world which shall not be moved, in spite of contrary reasons because they are clearly not conclusive persuasions. However, after considering all that has been said, one could then believe that the earth moves and not the heavens, for the opposite is not clearly evident. Nevertheless, at first sight, this seems as much against natural reason as, or more against natural reason than, all or many of the articles of our faith. What I have said by way of diversion or intellectual exercise can in this manner serve as a valuable means of refuting and checking those who would like to impugn our faith by argument.” (Edward Grant, ed., \textit{A Source Book in Medieval Science} (Cambridge: Harvard University Press, 1974), pp. 509-510.) For further discussion see Grant, \textit{Planets, Stars, and Orbs}, pp. 639-647; Duhem, \textit{Le Système Du Monde; Histoire Des Doctrines Cosmologiques De Platon À Copernic}, especially volume 9, the section “L’équilibre de la terre et des mers”.

may have been willing to accept the existence of the southern continent as a given, Mercator soon began to seek reason and evidence to justify belief. The problem was that Mercator’s predecessors had left him with little to work with. The southern continent was assumed to exist on the basis of tradition, not cosmological or cosmographical argument. The conjecture of southern lands was unable, and, moreover, was not expected, to offer any explanations about the physical workings of the earth. Indeed, the first person we can be sure to have ever posited the existence of Antipodes – Crates of Mallos in the second century BC – did so on the basis of his desire to interpret the writings of Homer. The Antipodes evolved on the basis of tradition, not cosmology (despite what most assume). There was simply no imperative for scientific justifications. Mercator, however, aspired to a higher standard of scholarship. He wanted to base his cartography not on whim and lore, but on sound geographical data which he would draw together into the outline of a continent – a continent in whose existence he could trust on the unimpeachable basis of cosmographical theory.

And so, Mercator set about elaborating a cosmology of the universe. Everything began with God, who created the universe and spread matter throughout its reaches. That matter was comprised of the elements: earth, water, fire, air. This was the primordial ‘Chaos’ – matter swirling about with neither form nor function. To order the ‘Chaos’ God imposed what we would call a law of physics – in this case a force which impelled the matter towards the centre of the universe: “For first the Chaos being created, the Earth began to settle into the Center.” As it settled at the centre of the universe, the matter was yet a soup of elements; earth and water mixed together and formed a malleable mass, essentially a planet-sized body of mud. It was only on the “third day [of creation], when the earth was made dry, sollide and firme”.

In the meantime, this malleable, plastic mix of matter began to form into a spherical shape, each side impelled towards the centre. Eventually – just how we will see in a moment – Mercator arrives at the conclusion that the earth is equally balanced on all sides, and given the quantity of land known to exist in the northern hemisphere, a great continent must similarly exist in the still largely unknown southern hemisphere.

So, is this equipoise as we know it? The cosmology elaborated by Mercator in his Atlas Sive Cosmographicae Meditationes de Fabrica Mundi et Fabricati Figura, published posthumously in 1595,

---

500 Gerhard Mercator et al., Atlas, or, a Geographicke Description of the World, Volume 1 (Amsterdam: Theatrum Orbis Terrarum, 1968 (original 1636)), p. 18. I am using a facsimile of the 1636 English version of Mercator’s Atlas.
does indeed contain a theory of hemispheric equilibrium, but it is not equipoise as we know it today. And the reason lies in a common misunderstanding, as exemplified in a recent book where it is assumed that Mercator must have had the rotation of the earth or some sort of toppling effect in mind when referring to hemispheric balance or equivalence: “Mercator believed that some of Marco Polo’s descriptions applied to the southern continent, and that such a large territory was necessary to balance the earth so that it would rotate properly.”501 Clearly, the authors of this passage see balance as an issue pertaining to the revolution of the earth about its axis. If the hemispheres were unequal, then, like a lopsided spinning-top, the earth would have a wobbly rotation. This is how later scholars understood equipoise, and, indeed, this makes intuitive, if not perfect scientific, sense. The only problem with this conception of balance is that it has no applicability whatsoever to Mercator. Neither Mercator nor the vast majority of his contemporaries believed that the earth rotated about its axis; their earth was stationary at the centre of the universe. Cosmologists and astronomers had seemingly confirmed this with their observations and theories, but more importantly it was writ large in the bible. Recall Psalm 104:5: “Who laid the foundations of the earth, that it should not be moved for ever.” Job 26:7: “He stretcheth out the north over the empty place, and hangeth the earth upon nothing.” Conversely, the bible seems to tell of the sun’s mobility. Ecclesiastes 1:5: “The sun also ariseth, and the sun goeth down, and hasteth to his place where he ariseth.”502

It was not until the late 17th and early 18th centuries that geocentrism and Aristotelianism were comprehensively replaced by ideas about physics and planetary mechanics familiar to us today. But for Mercator in the 16th century, the earth was yet to move or spin. It should be pointed out that Mercator did own a copy of Copernicus’s De Revolutionibus and so was certainly aware of the theory of heliocentrism.503 In light of the fact that he was imprisoned in 1544 on the charge of Lutheran heresy, a charge of which he was eventually acquitted, it is not unreasonable to wonder whether Mercator subscribed to the theory of heliocentrism, but was unwilling to risk the opprobrium of the Church by openly supporting such dangerous ideas.504 Yet if Mercator subscribed to heliocentrism, he left no hints

504 Lloyd Arnold Brown, The Story of Maps (Courier Dover Publications, 1979), p. 159. Mercator was no threat to the Church, but this was no defence to a charge of heresy in the Low Countries where the Protestant Reformation was gaining momentum in spite of the violent resistance by the ruling Habsburg Monarchy.
of this in his oeuvre. Indeed, he goes to great lengths to state his support for geocentrism, citing the scriptural authority of Psalms 104:5 and 136:6. His cosmology is clear:

…[God] assigned then a place for the Earth, and the Chaos, to wit, a point in the midst of the void, upon which it rested, and beyond which it is not permitted to moove. This is the greatest Miracle of all nature…

…the Earth, desireth uncessantly the point, which is assigned to it in this vacuity, by an impression from the will of God, and is mooved towards him, by a certaine desire in its ponderosity, till that it hath obtained a like resting place on all parts, supporting and sustaining upon it, the other parts of the world, as upon its shoulders.505

Mercator is avowedly a God-fearing geocentrist, his cosmology a combination of sacred writ and Aristotelian physics. The notion of hemispheric balance as normally understood is, in this system, uninstructive. Balance implies poise, whereas Mercator’s earth is not poised in the sense that it might somehow wobble if it loses equivalence between the hemispheres. Nor could it topple off into space. Mercator’s earth was essentially immobile at the centre of the universe, no matter how we conceive its geometric shape or distribution of mass.

MERCATORIAN EQUIPOISURE

Yet Mercator does elaborate a theory of hemispheric balance, doing so on the basis of a rather abstruse set of premises. Having formed into a sphere over the first three days of creation, the earth is now subject to the force of winds and buffeting seas which whip the earth – still not yet “dry, sollide and firme” – into the geographical forms of mountains and valleys, highlands and plateaus, seas and oceans. But having explained how the earth and its geographies were created, Mercator was left with the thought that the random and unpredictable force of the winds and waters could have raised more land into mainlands and mountains in one region than another. This introduced the prospect of the earth’s hemispheres containing unequal masses – meaning even though the earth’s form remained roughly geometrically spherical, it could end up with a skewed centre of mass/gravity. Thinking through the consequences of such a possibility, Mercator concluded that while under his cosmological model it is possible for the hemispheres to have been created with an unequal distribution of mountains versus

505 Mercator et al., *Mercator-Hondius Atlas*, pp. 6-7. I am using the 1636 English version of Mercator’s *Atlas*. 
oceans, this did not happen. He reasons by deduction, though whether his argument—history’s first iteration of the theory of equipoise—makes sense is more difficult to say. I reproduce the relevant passage, as paraphrasing does not do justice:

And (which is most of all) that the earth, with the waters collected together, making one Sphere, might remaine in one equall balance: for otherwise the earth should not be established upon the waters, but the more heavy weight being collected into one part, should presse downe all the masse of the earth, towards the center of gravitie, and of the world: and that depression of the earth, having elevated more high, & aloft, the waters lying on the other part, would have caused them to overflow, and possesse the next adjoyning lands. For after that the earth in the same quantitie is heavier than the waters, it is necessary that first the bodie of the earth, consist by it selfe in an equall ballance. And also that the Seas environning the orbe of the earth, and communicating together, should be so distributed, that on every side lying in an equa ll ballance, they should not bring more waight into one halfe of the Sphere, in what circle soever you compasse it, than in an other thereunto opposite.\footnote{Ibid., p. 19.}

So whereas under a heliocentric model we moderns would consider hemispheric equivalence necessary so as to maintain the balance of the earth in its revolutions about its axis, Mercator believed that if the earth’s hemispheres were unequal then, rather than it cause the earth to be in irregular motion in space, it would cause the earth’s parts to be in motion. Land would depress towards the centre, thus pushing its antipodes up higher—causing the displacement of waters which would overflow into surrounding lands. What is unclear is what then happens: does this process repeat \textit{ad infinitum}—the earth’s parts forever in motion, land depressing towards its antipodes, seas overflowing into surrounding land? If that was to be so, Mercator may have deduced that, given the earth’s lands and seas appear stable, the earth’s hemispheres must be equally poised with land. But there is nevertheless an inconsistency here: what of the fact that the earth was, according to Mercator, made “dry, sollide and firme” by the winds and sun on the third day of creation—how could a dry, solid earth still be malleable? Indeed, once dry and solid, if there was an inequality of mass between the hemispheres, all that should happen in Mercator’s model is that the earth moves rectilinearly until its centre of mass is at the centre of the universe.
Whatever the case may be, Mercator believed that the observed fact of the earth’s stability implied an equality of land and water between the hemispheres. Thus, we finally reach the moment where the theory of equipoisure is invoked as theoretical proof of the existence of a southern continent:

…the machine of the earth is selfe equally balanced, without budgeing one way or other, and consequently also the Sea, which is contained within the bosome of it…For seeing that the lands knowne to the ancients, are comprehended in 180. Degrees of Longitude, that is to say, doe onely possesse the one halfe of the sphere, it was necessary there should be also as much Land in the other halfe. And seeing that Asia, Europe and Africa, for the greater part, are situated beyond the Equinoctiall, towards the North; it was necessary as great a continent to remayne under the pole Antarctick, which should bee equivalent in the other Lands, with the Meridionall parts of Asia and new India, or America. 507

So, 1595 marks the birth into discourse of the theory of equipoisure. This does not mean, however, that from the year 1595 equipoisure underwrote belief in Terra Australis. Indeed, by the time Mercator’s thoughts on equipoisure were published, belief in the southern continent was firmly entrenched. People were willing to believe in this marvellous southern land regardless of cosmographical theory. And that state of affairs did not change until the mid 18th century. The concept of hemispheric balance was an interesting idea – and certainly it played a marginal role in a handful of treatises that drew upon the theory as additional evidence of the existence of Terra Australis. 508 However, for most advocates of a southern continent, equipoise was an unfamiliar idea to them, or it was an unnecessary embellishment to the art of cartography and the clear thinking of geographers.

BREREWOOD

Of course, unnecessary embellishment is the stuff of academia, so it was only a matter of time before Mercator’s theory was elaborated upon and disseminated by a fellow scholar. The first to do so was the respected English astronomer and natural philosopher, Edward Brerewood. The significance of

507 Ibid., p. 20.
508 For example, Juan Luis Arias invokes equipoise in his 1623 memorial imploring the Spanish state to continue the good work of de Quiros in discovering and settling the southern continent. This memorial is available in a number of texts, one of which is Dr Juan Luis Arias, "A Memorial Addressed to His Catholic Majesty Philip the Third, King of Spain, by Dr Juan Luis Arias, Respecting the Exploration, Colonization, and Conversion of the Southern Land,” in Early Voyages to Terra Australis, Now Called Australia: A Collection of Documents, and Extracts from Early Manuscript Maps, Illustrative of the History of Discovery on the Coasts of That Vast Island, from the Beginning of the Sixteenth Century to the Time of Captain Cook, ed. R.H. Major (London: Hakluyt Society, 1859), pp. 11-13.
Brerewood’s articulation of Mercator’s theory of equipoise is that subsequent references to equipoise in the 17th century better reflect Brerewood’s discussion than Mercator’s, and, in fact, some authors explicitly reference Brerewood (whereas I have not yet encountered any who reference Mercator). In Brerewood’s *Enquiries Touching the Diversity of Languages, and Religions, through the Chiefe Parts of the World* (1614), Brerewood sets out the physics at the centre of his reasoning:

…if the earth were unequallie poyesd on opposite sides of the center, then must it follow, that the least and lighter masse of the earth should presse downe as forciblie, as the greater and weightier, because it attaineth the center as well as it. But if it be granted, which reason doth inforce, that the weightier part of the earth, should presse downward, with greater force, and with more right challenge the center, then the lighter part: it must follow, that the lighter masse or side of the earth, must yeelde and give place to the weightier, so farre, till the center of that whole masse of the earth take possession of the center of the world (for till then, one side will be still heavier then the other) and so the opposite halves of the earth, in respect of heavinesse, be brought on all sides, about the center, unto a perfect equilibration.509

It is simple physics, then, that shows the earth must be equal on all sides. From this premise, added to the observation that at least four times more land has been found in the northern hemisphere as the southern, Brerewood is led to conclude not just that there is a vast southern continent to be found, but that “it will certainly be fou´d (in the after times, when it shall be better discovered) much larger then any globe or map hitherto extant, hath represented it.”510

It is worth pointing out that Brerewood still believes that the earth is fixed at the centre of the universe, which is why he discusses the problem of balance in similar terms to Mercator. This is also why those authors who repeat this theory in the 17th century do not elaborate on the physics that underwrite the theory: they simply do not understand the complicated (if not incomprehensible) physics at play, even though the theory seems to make intuitive sense. For equipoise to form into a truly compelling theory, it required the acceptance of the cosmological model elaborated by Copernicus and Kepler, based on the centrality of the Sun and the rotation and revolution of the Earth. This only happened towards the end of

---

509 Edward Brerewood, *Enquiries Touching the Diversity of Languages, and Religions, through the Chiefe Parts of the World* (London: Printed for John Bill, 1614), pp. 120-123.
510 Ibid., pp. 120-123.
the 17th and start of the 18th centuries. But once Aristotelian physics and geocentrism were finally sidelined, the theory of equipoisur was able to morph into its full-blown Enlightenment form – the form by which we know it today, wherein the earth’s rotation is comprehended, as is the terraqueous composition of the globe, and the difference in weight and volume of earth and water.

BUACHE
Across the late 17th and early 18th centuries, there are brief mentions of the notion of equipoisur. In 1692 the naturalist John Ray wrote:

…I am of Mr Brierwood’s Opinion, that there may be, and is a vast Continent toward the Southern Pole opposite to Europe and Asia, to counterpoise them on that side; nay, I do verily believe, that the Continents and Islands are so proportionably scattered and disposed all the World over, as if not perfectly and exactly, yet very nearly to counterballance one another; so that the Globe cannot falter or reel towards any side…511

A few decades later the English privateer and now proud circumnavigator of the globe, Woodes Rogers, penned a travelogue where he paused a moment to consider the prospect of a southern continent:

I have often admir’d that no considerable Discoveries have yet been made in South Latitude from America to the East Indies… I give this Hint to encourage our South Sea Company, or others, to go upon some Discovery that way, where for ought we know they may find a better Country than any yet discover’d, there being a vast surface of the Sea from the Equinox to the South Pole of at least 2000 Leagues in Longitude that has hitherto been little regarded, tho’ it be agreeable to Reason, that there must be a Body of Land about the South Pole, to counterpoise those vast Countries about the North Pole. This I suppose to be the Reason why our antient Geographers mention’d a Terra Australis Incognita, tho’ very little of it has been seen by anybody.512

When Rogers published his thoughts in 1726 the theory of equipoisure had only been around for little over a century, and yet already the theory is being projected backwards in time onto Ancient Greek philosophers whose only defence to unjustifiable attributions like this, is silence.

But these are flashes in the pan. The first truly compelling articulation of a theory of equipoisure, and the first time a theory of equipoisure takes centre-stage in a cosmography, is with the publication of Philippe Buache’s 1746 map, Carte du Globe Terrestre. On this map Buache explains:

One can still observe in the Planisphere that the Great Continents are all found on the same side of the globe, they occupy about $2/3$ of the space... Scientists must explain why this apparent inequality of the solid parts of our globe does not produce any movement... in the rotation of the Earth on our axis.\textsuperscript{513}

With this, we finally have a theory of equipoisure explicitly articulated in the context of a rotating earth. This alone is noteworthy, but what makes Buache’s articulation of the theory of equipoisure doubly interesting is the map for which these words are but an annotation. That map is a veritable pictorial essay wherein a map of the southern hemisphere has been overlain on a map of the northern hemisphere, centred on the pole. No cosmographer ever produced a more telling demonstration of the inequality of lands in the hemispheres: in just a glance it is plain to see that there is a region as large as all of Asia and Europe which has no known equivalent in the southern hemisphere.

There is something else interesting about Buache’s writings on the southern continent, and that is his focus on the theory of ice formation to provide yet another justification for believing a large Antarctic continent existed. Explorers of different nationalities had reported encountering ice flows and icebergs in the oceans of the high southern latitudes in both east and west hemispheres; for Buache, this evidence fitted into a simple equation: the more land the more ice, hence the more ice the more land. The scientific principle anchoring this equation was simple: icebergs did not form from sea-water, but from fresh-water. Thus any icebergs encountered must have first formed from land-based fresh-water rivers and estuaries. Ice was a sure sign of land – and lots of it.\textsuperscript{514}

\textsuperscript{513} This is my own translation from the original French.

\textsuperscript{514} 18\textsuperscript{th} century science was wrong about ice being unable to form from sea-water, as many seas are filled with sea-ice, that is, ice which has formed from sea-water freezing. However, they were right about icebergs, which do not form merely from sea-ice. Icebergs calve either from glaciers – frozen rivers or rivers of ice – or from an ice shelf. Ice shelves may protrude many
I recount this new branch of argument because in the works of Charles de Brosses and Alexander Dalrymple, theories of ice formation appear beside and actually overshadow theories of equipoise as the centerpieces of their cases for the existence of southern lands. This is significant, as until the mid 18th century the existence of Terra Australis had been asserted either without recourse to justifications, or where argument was employed it was predominantly based on empirical lore – that is, referencing fragments of data from expeditions, rumours of lands, glimpses of geographies on charts and maps, and so on. Theory played little and often no role. But by the mid-18th century there was a diminishing pool of empirical traces upon which an argument for the existence of a southern continent could be sustained, and anyhow, such arguments seemed increasingly dubious given the fact that over the course of two centuries nearly every empirical trace appropriated into the geography of Terra Australis had been shown to be part of some other geography. New Zealand still stood out as a potential promontory of the austral continent, but with skepticism rising, these arguments only carried so far. That is why scholars like de Brosses and Dalrymple increasingly relied upon theoretical arguments to justify their fixations with southern lands. If you wanted to seriously advocate for the existence of undiscovered southern lands, simple assertions and hopeful attributions of discoveries and rumours would no longer meet the requisite burden of proof. In the Age of Enlightenment, the last and most potent recourse for advocates of southern lands was theory.

CHARLES DE BROSSES

Without doubt the most influential advocate of the theory of equipoise was French intellectual, Charles de Brosses. In 1756 de Brosses published his *Histoire des Navigationes aux Terres Australes* – the *Principia Mathematica* of southern hemispheric exploration history. It was an authoritative, scholarly treatise that began with a compelling plea to his countrymen to rally behind the pursuit of the undiscovered southern lands, whether one continent or a multitude of mainlands and islands, both for the benefit of France, and science in general. That such lands exist, he could prove by reason and logic: “it...
is impossible but there must be, to the South of Asia, some immense continent to keep our globe in equilibrio during its rotation, by serving as a counterpoise to the map of Northern Asia.” He then elaborated:

Whoever examines the two hemispheres of the globe divided horizontally, that is, by the Equator (as they should always be) and not by the Meridian, must be struck in observing so much land in the one hemisphere, and so little in the other; especially, as he knows that the weight of earth is, to that of sea-water, nearly as five to three; the weight of the cubic-foot of sea-water being 73 pounds and an half, while the medium of different earths is about 120… In fact, of twenty-five millions of square leagues on the surface of the whole globe, the ancient continent occupies but five, or one fifth of the whole. It is unequally balanced from E. to W. by the map of the two Americas, making but one twelfth of the whole. But these two masses of earth lie so far to the Artick side, that perhaps not one tenth of the heaviest, and about one third of the least lies to the South of the Line. Thus the inequality of weight from S. to N. must be very great… Hence the careful observation of the known parts of the earth tends much to confirm the hypothesis of some great counterpoise placed towards the South, especially under the first meridian; that is, betwixt 180 and 230 degrees of longitude…

If de Brosses was right, then lands of unappreciated strategic and commercial opportunity awaited discovery by whichever “potent sovereign” possessed the necessary vision to grasp this opportunity. In terms of “potent sovereigns”, the two viable candidates were France and Britain. After the publication of de Brosses’ Histoire de Navigationes aux Terres Australes both nations once again started seriously contemplating the further exploration of the southern climes to finally determine whether or not there was a great southern continent.

ALEXANDER DALRYMPLE

516 Charles de Brosses and John Callander, Terra Australis Cognita: Or, Voyages to the Terra Australis, or Southern Hemisphere, During the Sixteenth, Seventeenth, and Eighteenth Centuries... 3 vols., vol. 1 (Edinburgh: printed for John Callander, 1768), p. 8.
517 Ibid., pp. 8-10. As de Brosses continues, it is interesting to find that he actually acknowledges some of the potential flaws in his argument: “…even though the difference of the specific weight of earth and water above-mentioned should not be great, according to the opinion of those who, with probability enough, consider the vertical height of the depth of the sea, as forming but a very considerable part of the cubical contents of the whole mass, not to mention, that as our knowledge of the structure of this globe goes not far from the surface, we can never be certain whether its interior parts be full of cavities, or solid towards the centre.”
Further fanning the flames of ambition on the British side of the English Channel was Alexander Dalrymple, the British geographer-cum-mariner with whom de Brosses enjoyed a relationship of mutual respect. Where Dalrymple departed from de Brosses was not in the sweep of his theory of equipoisue, but in his careful calculations of regional land to water ratios intended to show not just that southern lands must exist, but that they must exist precisely where he wanted them to. In his *Account of the Discoveries made in the South Pacifick Ocean*, Dalrymple goes into unprecedented detail:

The annexed Table will elucidate the comparative proportion, in square degrees, of land to water in the two hemispheres, as well within the Tropicks as without, tho’ it is not extended to the Poles, even of the northern regions, very little being known.

<table>
<thead>
<tr>
<th>North Lat.</th>
<th>South Lat.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Land.</td>
<td>Water.</td>
</tr>
<tr>
<td>Land.</td>
<td>Water.</td>
</tr>
<tr>
<td>0 to 10º</td>
<td>1100 2500</td>
</tr>
<tr>
<td>10 to 20º</td>
<td>950 2650</td>
</tr>
<tr>
<td>20 to 23º</td>
<td>420 660 270 810</td>
</tr>
<tr>
<td>2470 5810</td>
<td>2420 5860</td>
</tr>
</tbody>
</table>

The excess of land in North latitude is very inconsiderable, being only 50 square degrees. This will probably be made up in the Southern Lands and Islands not yet discovered.

<table>
<thead>
<tr>
<th>North Lat.</th>
<th>South Lat.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Land.</td>
<td>Water.</td>
</tr>
<tr>
<td>Land.</td>
<td>Water.</td>
</tr>
<tr>
<td>23 to 30º</td>
<td>980 1540</td>
</tr>
<tr>
<td>30 to 40º</td>
<td>1700 1900</td>
</tr>
<tr>
<td>40 to 50º</td>
<td>2200 1400</td>
</tr>
<tr>
<td>4880 4840</td>
<td>1060 8660</td>
</tr>
</tbody>
</table>

From the Tropick to 50º North latitude, the proportion of land and water is nearly equal; but in South latitude, the land, hitherto known, is not 1/8 of the space supposed to be water. This is a strong presumption, that there are in the southern hemisphere, hitherto totally undiscovered,
valuable and extensive countries, in that climate best adapted for the conveniency of man, and where, in the northern hemisphere, we find the best peopled countries.\textsuperscript{518}

No scholar had ever provided such a detailed breakdown of the theory of equipoisure, but then, it is arguable that no scholar had ever wanted the southern continent to exist as much as Dalrymple. He planned to captain a voyage of discovery that would finally discover the valuable continent that he had shown must exist in the south Pacific, after which glory would forever redound to his good name. Perhaps Dalrymple’s most illustrative quote is his brief explanation as to why he does not extend his comparison of north and south latitudes all the way to the South Pole:

So little is known here in the Southern Hemisphere, that there is scarce room for a comparison, and as the climate to the South in those latitudes, is probably too severe for such countries to be of much value, they do not come within the object of the present disquisition.\textsuperscript{519}

Dalrymple used theoretical justifications to reason for a southern continent that would be found not loosely in the southern hemisphere, but in the precise region where its existence made the southern continent still worth believing in. Where that geography was no longer valuable to him – that is, amongst the frigid climes of the Antarctic, climes “too severe for such countries to be of much value” – his theoretical rationalisations evaporated. Dalrymple reverse-engineered his southern continent: he knew what he wanted to exist, then used theoretical justifications to make it so. This observation need not be considered a criticism of Dalrymple who was, in this regard, unexceptional for his times.

THE LAST WORD
Ultimately, these encouragements from de Brosses and Dalrymple contributed to France and Britain once again taking up the pursuit of the southern latitudes upon the cessation of the Seven Years War in 1763. Not everyone was convinced that such lands did exist, but there was enough uncertainty either way that it was an opportunity that had to be explored. And that is how Cook approached his 1772 commission to determine whether a southern continent was real or imagined, executed in a bold traverse of the high latitudes of the frigid Antarctic waters that proved beyond all doubt that no such continent could exist.

\textsuperscript{518} Alexander Dalrymple, \textit{An Account of the Discoveries Made in the South Pacifick Ocean, Previous to 1764} (London: 1767), pp. 90-91.
\textsuperscript{519} Ibid., p. 92.
The last word on the subject of equipoise, however, deserves to go to the naturalist who accompanied Cook on that voyage, Johann Reinhold Forster. As was characteristic of everything he turned his mind to, Forster soberly and intelligently (if a little caustically) addressed the theory of equipoise, having just withstood an arduous voyage that tested the predictions of both the theory of hemispheric balance, and the theory of ice formation:

Our present circumnavigation has, I believe, put it beyond doubt, that there is no land on this side of 60° in the Southern hemisphere, if we except the few inconsiderable fragments we found in the Southern Atlantic ocean. If therefore we should even suppose, that the whole space from 60° and upwards, where we have not been, be entirely occupied by land, this would be still too inconsiderable to counterpoise the lands of the Northern hemisphere. I am therefore apt to suspect, that nature has provided against this defect, by placing perhaps at the bottom of the Southern ocean such bodies as by their specific weight will compensate the deficiency of lands; if this system of the wanted counterpoise be at all necessary. But there may perhaps be other methods to obviate this defect, of which our narrow knowledge and experience have not yet informed us.\footnote{Johann Reinhold Forster, Observations Made During a Voyage Round the World, ed. Nicholas Thomas, Harriet Guest, and Michael Dettelbach (University of Hawaii Press, 1996), p. 60. A few chapters later, Forster comprehensively dissects the erroneous ideas held about ice formation (pp. 61-78).}

\footnote{Interestingly, the notion of equipoise does not immediately die out, even while the southern continent did. For instance, in 1775 Daines Barrington uses the argument of equipoise in the opposite manner to normal: that is, to argue for an open Polar Sea: “Speculative geographers have supposed, that there should be nearly the same quantity of land and sea in both hemispheres, in order to preserve the equilibrium of the globe.

It is possible indeed, that this may be accounted for by the Antarctic seas being more shallow than those near the North Pole... [I]t seems necessary, as the quantity of land so greatly preponderates in the Northern hemisphere, that from N. lat. 80½ to the Pole itself, must be chiefly, if not entirely sea.” (Daines Barrington, The Probability of Reaching the North Pole Discussed, London (printed for C. Heydinger, 1775), pp. 33-34.)}
Mercator’s great innovation on his 1569 world map was to make his meridians (lines of longitude) parallel – i.e., they do not converge towards the Poles – while at the same time, he has distorted his lines of latitude (known as parallels) by progressively separating them so that they are much more spaced apart towards the Poles than they are near the equator.\footnote{The progressive separation of parallels would eventually lead to gross distortions the closer we get to the Poles, which is why you will find that on Mercator’s map only 80° of latitude are shown in the northern hemisphere, and just under 70° in the southern hemisphere.} The effect of this squaring of the grid was that if a navigator wanted to chart on this map a course of constant bearing – say, north-east – that would appear on this map as a straight line. Another way of saying this is that a straight line drawn between two points on a Mercator chart will intersect each meridian it crosses at the same angle – which makes that line a loxodrome (the technical term for a course of constant bearing, alternatively known as a rhumb line). For navigators, this meant that once they had determined any two points between which they wished to sail, they could plot this course on their Mercator chart and, sticking to the same compass bearing, arrive at the intended destination. To better appreciate the significance of this achievement, it is necessary to consider the basic mechanics involved in navigating long distances in the sixteenth century.

Navigation was a difficult task at the best of times, and so one technique employed to make navigation simpler was for a navigator to set a bearing, and stick to it. At every point the navigator would be able to check their compass, and adjust their ship’s steering to keep the ship on that course. For example, a navigator might set a course east-south-east (this bearing represents a particular angle at which meridians are intersected – in this case 113° from true north), and then maintain that bearing. In following this course (a loxodrome) a ship would not travel in a straight line, despite what some of our spatial instincts may tell us. Rather, the ship would travel on a spiral route which gradually converges on the poles, as is evident in Figure I and Figure ii. As should be immediately evident from these figures, travelling according to a loxodrome was easy to navigate, but it was also indirect – and as interested as navigators were in simplifying the task of navigation, they were even more interested in swiftness of passage. In this regard, the most direct route between two points on the globe will always be a ‘great circle’.
Figure 1. Loxodrome with constant bearing of 275° passing through Campinas, Brazil. This image was produced by Carlos A. Furuti, and can be found in his online article, “Useful Map Properties: Directions”, at http://www.progonos.com/furuti/MapProj/Normal/CartProp/Rhumb/rhumb.html. My thanks for permission to reproduce.
Figure ii. Loxodrome with constant bearing west-northwest passing through Campinas, Brazil. This image was produced by Carlos A. Furuti, and can be found in his online article, “Useful Map Properties: Directions”, at http://www.progonos.com/furuti/MapProj/Normal/CartProp/Rhumb/rhumb.html. My thanks for permission to reproduce.
Imagine you are travelling from Cape Town (South Africa) to Augusta (Western Australia). Augusta is roughly due east from Cape Town, which is to say, if you bear east constantly from Cape Town you will end up in Augusta. Such a route is known as a ‘small circle’ because if you kept going due east from Cape Town you would circle the globe and end up back in Cape Town exactly where you started – and if you can imagine the circle that that would create around the globe, it is a small one compared to some of the other possible circle routes around the globe. However, this small circle route is not the shortest route between Cape Town and Augusta – a fact difficult to appreciate without the aid of a globe. A shorter route is in fact available – a route which arcs down into the Southern Ocean. If you took this more direct route and then kept on going, you would end up tracking a bigger circle around the globe – the biggest circle possible, in fact. It would be much quicker in getting to Augusta than if you had taken the small circle route, though if you continue on the latter path it will take much longer to eventually end up back in Cape Town as you are now taking the longest possible circle around the globe – hence, it is known as a ‘great circle’. If you traced the route of a great circle on a globe of the earth it would perfectly bisect the globe (whereas the smaller circle path would just neatly cut the bottom off).

The problem navigators had with great circles was that to follow such a course required constant changes in direction (unless the great circle is the equator or a meridian). For instance, travelling the great circle from Cape Town to Augusta requires an initial bearing (roughly-speaking) of south-east, but by the time you are mid-way through the journey the required bearing has become due east, and by the time you are a few hundred kilometres from Augusta it has become north-east. If you stayed true to the original bearing of south-east, you would end up in Antarctica, not Augusta. Trying to constantly correct a course like this was the stuff of nightmares for navigators. As I have indicated, they wanted to establish a bearing, and stick to it.

Against this background, we can now see how the subjects of loxodromes and great circles converge. A navigator wanted the efficiency of a great circle route, with the simplicity of a course of constant bearing. To achieve both of these things, navigators would determine the shortest possible route between two points (the great circle) and then they would turn that great circle into a series of

---

522 Anyone can demonstrate this to their own satisfaction simply by taking a string or, better, a piece of elastic, and stretching it between the two points on a globe.
loxodromes – in doing so necessarily travelling a little extra distance, but nevertheless achieving a much quicker route than the alternative. The concept is illustrated in figure 3.\footnote{323}

![Figure 3](image)

**Figure 3.** The black line indicates the great circle route between Cape Town and Augusta. This can be converted into a series of loxodromes, thus capturing the basic efficiency of the great circle, while being able to maintain constant bearings.

With this context in mind, the importance of Mercator’s innovation begins to come into relief. On a normal chart, a navigator could not easily plot the path of a loxodrome – a loxodrome is, after all, nearly always a spiral. It was no real issue on a local or chorographic scale, as navigators sailing short distances could set a course between two points on a pre-Mercatorian map based on a line of constant compass bearing and still expect to arrive at their destination, having only veered off course by an insignificant distance. But when dealing with larger distances these distortions become extreme. In the context of growing trade between East and West this issue took on special significance, as Jerry Brotton explains:

Sailing into the relative unknown and discovering previously uncharted land no longer motivated long-distance seaborne travel. The commercial ethos which surrounded both the Portuguese and Castilian ventures into the waters of the Indian and Pacific Oceans ensured that it was necessary to be able to navigate rapidly and accurately between a specified point of departure and a

specified point of arrival. It became increasingly imperative for empires and merchant-financiers investing in long-distance enterprises to ensure that expensively outfitted expeditions reached their appointed destinations quickly and returned as soon as possible to maximize the financial profits from their precious cargos.\textsuperscript{524}

This is where Mercator’s chart comes in. Using Mercator’s projection, loxodromes did not appear as spirals; Mercator’s was the first projection which allowed loxodromes to be represented on the map as straight lines. This meant that a navigator could simply and reliably plot a course between any two points and know what bearing needed to be maintained to reach that point. It made navigation simpler, and less prone to error. It was a breakthrough that sounds straight-forward – the capacity to draw straight lines on the map – but it was the single largest leap in cartographic science since the introduction of longitude and latitude (though it would be some decades before Mercator’s projection was systematised and explained by Edward Wright, encouraging its progressive adoption in navigational charts thereafter\textsuperscript{525}).

\textsuperscript{524} Brotton, Trading Territories, p. 162.
\textsuperscript{525} Kees Zandvliet, Mapping for Money: Maps, Plans and Topographic Paintings and Their Role in Dutch Overseas Expansion During the 16th and 17th Centuries (Amsterdam: Batavian Lion International, 1998), p.39.