Mapping Terra Incognita

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ABSTRACT. The theorizing of a southern continent for more than two millennia before the discovery of Antarctica and its long representation in maps are phenomena unparalleled in the history of geography and are well known. However, the epistemological implications of the mapping of this non-existent place have received little consideration. After preliminary remarks about present-day remote imaging of Antarctica and limits to the completeness of all mapping and knowledge, the article discusses the representation of the southern Terra Incognita in examples of mediaeval and Renaissance maps. It is argued that filling in blank spaces both reflected a yearning for complete knowledge and provided an opportunity for non-geographical discourse that is missing in maps today.

Contents

Introduction

It is well known that various types of large southern land masses were theorized for more than two millennia before the discovery of Antarctica and that some of these came to be represented in maps. In the second century the geographer Ptolemy called his version of the theoretical land 'Terra Incognita' — the Latin term still used (in lower case) for unknown land today — and after his immensely influential *Geography* arrived in Europe in the fifteenth century, both the name and Ptolemy's placement of the land were adopted by map-makers. (Later names for the imaginary place included Terra Australis Incognita and Magallanica, but Ptolemy's term will be used throughout this article.) Whereas reference is often made both to the theories of this continent and to its appearance in maps, and there have been fuller treatments of aspects of these (Ramsay 1972; Gilmartin 1984; Richardson 1993; Clancy 1995), the epistemological implications of the mapping of this non-existent place have received little consideration.

This article does not offer a survey of cartographical representations of the phantom continent but, via a selection of examples, examines specifically the urge exhibited by many European map-makers to fill this blank space in their maps and what they filled it with. It is argued that this both reflected a desire for the security of complete knowledge and also provided an important space for non-geographical discourse in maps that is no longer available. After initial comments about mediaeval maps, those referred to are from the period between the start of the great European voyages of discovery, when the first printed maps also appeared, and James Cook's second voyage, which finally limited the possible extent of any polar land mass to within the Antarctic Circle. The historical surveying and mapping of Antarctica after its discovery are mentioned only in passing, but to provide a context for the discussion, brief reference is first made to three matters: recent technological achievements and limitations in the remote imaging of the continent, the fundamental limitations of any system of knowledge, and contemporary thinking about maps and map-making.

Present-day imaging

From the late 1950s, when spy satellites were first used, various kinds of remote-sensing satellites have increasingly supplied the data by which the Earth is mapped and imaged. Earth-synchronous weather satellites were first launched in 1974, but because they were stationed around the equator, they provided no coverage of the poles. Since that time, beautiful mosaic images of the entire Antarctic continent as seen from space have been compiled from data collected by the United States' NOAA (National Oceanographic and Atmospheric Administration) weather satellites, which are synchronized to the Sun (see, for example, Calder 1991: 49; US Geological Survey 1996). Radar and laser altimetry now provide maps of the surface elevation of Antarctica; topographic maps of the continent's bedrock and maps of the velocities of its ice flow have been produced; the Landsat series of satellites has added increasing detail to images of Antarctic topography in visible light; and in 1997 the Canadian Space Agency's Radarsat, indifferent to darkness or cloud cover, imaged the entire continent in 18 days at a far finer resolution than any previous single satellite survey (Warren and Kellogg 2002). Today, the invisible is being mapped as well as the visible, the moving as well as the static: a range of images of reality is available for different purposes and views of the Earth and Antarctica are mediated by physics rather than geography.

While it is now possible to photograph from satellites in a matter of days a continent that it took explorers and map-makers hundreds of years to reveal, there are

still spatial, interpretative, and temporal limitations. Some remote-sensing devices, for example, have angles of view that leave large areas around the South Pole blank. The images provided by Radarsat require interpretation of complex processes, influenced by the meteorological history and underlying dynamics of the ice sheet, which affect the way the radar beam is scattered (Roland Warner, Australian Antarctic Division, personal communication, 8 December 2004). In addition, Antarctica is dynamic: glaciers advance and retreat, and ice shelves calve, and Radarsat's remapping of the coastline in 2002 revealed remarkable changes in the space of three years. 'Antarctica is a mapmaker's nightmare,' it has been written, because 'by the time its outline is drawn, it is likely to have changed significantly' (Warren and Kellogg 2002).

Technical limitations aside, physics and mathematics have placed ultimate limits on the completeness of knowledge. Quantum and chaos theories suggest an element of indeterminacy regarding all material systems, while fractal geometry poses fundamental questions about such things as the length of a coastline, since ever-closer inspection reveals new levels of detail (Mandelbrot 1982). In an examination of philosophical questions underlying scientific knowledge, physicist David Bohm offered the reminder that 'if reality were ever to cease to show new aspects that are not in our thought, then we could hardly say that it had an objective existence independent of us' (Bohm and Peat 1987: 8). Otherwise, by implication, '*every* kind of thought' and every 'map . . . is a limited abstraction and not entirely accurate' (Bohm and Peat 1987: 9). This is a view of maps and mapping unlikely to be disputed by contemporary cartographic scholars.

In recent decades there has been what Denis Cosgrove described as a 'startling explosion of academic, artistic and cultural interest in "cartography" as an object of critical attention' (1999: 3). The word 'map' has been redefined (Harley and Woodward 1987), and cartography has been 'postmodernized.' Rather than as neutral receptacles of information about the external world, maps are now seen as inevitably determined by the particular author and culture that created them and, equally inevitably, as connoting power (Harley 1988, 1992). While less absolute statements might be preferred in some cases, these are important insights. It is not clear, however, that the broad scientific community or the public yet share a belief that conventional mapping practices are rendered obsolete by a postmodern awareness of 'the spatialities of connectivity, networked linkage, marginality and liminality, and the transgression of linear boundaries and hermetic categories' (Cosgrove 1999: 4). The 'complexities and uncertainties of mapping' may be a truism for professional cartographers and scholars but, as Cosgrove acknowledged, 'the instrumental use of maps in daily life can obscure the epistemological and interpretative challenges that mapping presents' (1999: 2). The following examination accepts that maps have 'authored' and contextual qualities. On the other hand, the concept and renditions of an unknown, largely non-existent southern continent spanned two millennia and different societies. Consideration is now given to what this may suggest and whether it might also have relevance today.

Mediaeval world maps

The Greek text of Ptolemy's *Geography* did not become available in Europe in Latin until 1406, some 13 centuries after the work was compiled. It has been argued that this reappearance may have coincided with, rather than precipitated, a revolution in geographical consciousness 'from subjective and vitalistic to objective and mathematical,' the consequences of which are still evident today (Cormack 1994: 377). To provide some context for the maps that started to appear in the fifteenth century, brief mention must be made of their antecedents.

Debate over the complex questions of mediaeval geographical understanding and the meaning of mediaeval maps has been long and heated, but it now appears clear that most people in the Middle Ages did not believe that the Earth was flat and also that maps from the period should not be assessed against modern criteria (Cormack 1994; Scarfi 1999). In the millennium that followed the fall of Rome various kinds of world maps or mappemondes appeared, with a mixture of symbolic, religious, historical, and geographical purposes. While the famous Hereford map from around 1300 exemplifies that amalgam, of particular interest here is the use made of terra incognita. The world of the map is centred on Jerusalem, and most of Asia and Africa and anything beyond is unknown. Into that hinterland, as into the dark night surrounding a lighted, familiar place, are projected the society's myths, fantasies, and fears. The works of Pliny and romance writers supplied mediaeval mapmakers with a rich fund of the wonderful and monstrous to draw on for this purpose (Harvey 1991), and a sphinx, mandrake, pelican, and legendary monstrous races inhabit the margins of the Hereford map. As the repository of such a range of meanings, the map constitutes 'no less than an intellectual world-picture' (Whitfield 1994: 20).

As they incorporated geographical information from the reports of travellers and the sea-charts produced as guides to navigation from the late thirteenth century, some mediaeval maps began to anticipate those of the Renaissance (Thrower 1996). In 1459 the Venetian monk Fra Mauro created a celebrated example. Although this intricate blue and gold map has the appearance of a traditional mappemonde, Jerusalem is no longer at the centre, and it is devoid of the religious and pagan imagery of the Hereford map, including the 'grotesque creatures inhabiting the edge of the world' (Whitfield 1994: 32–33). The influence of Ptolemy is strong, and the map also contains geographical detail gleaned from the latest Portuguese sea-charts, Arab sources, and the narratives of Marco Polo. Mauro left no empty spaces on his map, but he did challenge his contemporaries, in words remarkably similar to those of Bohm quoted above, to have the

humility in the face of the unknown to leave some 'space' in their minds:

> If anyone considers incredible the unheard-of things I have set down here, let him do homage to the secrets of nature, rather than consult his own intellect. For nature conceives of innumerable things, of which those known to us are fewer than those not known, and this is so because nature exceeds understanding. (Quoted in Whitfield 1994: 2)

Ptolemy, printing, and exploration

The Latin translation of *Geography* spread quickly through Western Europe and, although it was modified and added to, it enjoyed unrivalled authority well into the sixteenth century (Clancy 1995). Ptolemy is a towering figure in the history of cartography and is often praised for his scientific approach, yet his work also contained serious errors, resulting partly from the limited data available and partly from theorizing. One of the most influential of these was the southern Terra Incognita. For reasons unknown, the great geographer bordered the entire world map in the south with land, joining Africa in the west to Southeast Asia in the east and making the Indian Ocean an inland sea. The repercussions were long-lasting and 16 centuries later James Cook set out in search of the supposed super-continent, although the 'farthest south' actually plotted in *Geography* was 16 5/12°S (Berggren and Jones 2000: 181). From the beginning, however, there were a few who did not take *Geography* as gospel. Fra Mauro was one who was bold enough to disagree with Ptolemy on occasion, and he showed an Indian Ocean that was not landlocked, declaring:

> Some authors state of the Sea of India that it is enclosed like a lake, and that the ocean sea does not enter it. But Solinus holds that it is the ocean, and that its southern and south-western parts are navigable. And I affirm that some ships have sailed and returned by this route. (Quoted in Crone 1978: 32)

Thus the first factual cracks began to appear, separating Terra Incognita from Africa.

The rediscovery of Ptolemy and a scientific approach to cartography coincided with two crucial developments in Europe. The invention of printing, from woodcuts some time before 1460 and later from engraved metal plates, meant that maps became generally available and the same map could be viewed in different places and corrected. A publishing enterprise and public geographical discourse developed that had not been possible with manuscript maps (Whitfield 1994). Although manuscript world maps continued to be produced for more than a century, an Iberian example from 1623 by Antonio Sanches, including a crudely sketched Terra Incognita, appears anachronistic and naïve in comparison with contemporary printed Dutch maps and demonstrates just how much printing revolutionized cartography (Whitfield 1994: 86–87). The earliest printed Ptolemaic map appeared in Bologna in 1477, and many followed (Bagrow 1985). In a view virtually unchanged in 13 centuries, these typically showed slightly more than a quarter of the actual globe, a landlocked Indian Ocean, and Terra Incognita along the entire south (Fig. 1). The first great European voyages of discovery also began in this period, bringing back information that, by slow degrees, modified Ptolemy's Terra Incognita until it finally disappeared altogether. First a sea route around southern Africa was confirmed, and then Terra Incognita was detached from the South American mainland on the evidence of explorers. And just as, in geological history, Australia and Antarctica had proved 'nearly inseparable' (Kleinschmidt and others 2001/3: 97), it was only by complicated exploratory and cartographic stages that these two parts of the old Terra Incognita (by then usually called Terra Australis Incognita) were finally separated. Despite the dual influences of exploration and printing, the representations of Ptolemy's super-continent followed anything but a linear progression. Map-makers often ignored or were slow to include the new data: the high cost of engraving metal plates, for example, meant that atlas publishers were reluctant to discard them even when they were out of date (Boorstin 1983), and this, combined with the prestige of those bearing Ptolemy's name, helped certain errors to persist.

At first the impact of voyages of discovery on the mapping of Terra Incognita was in some cases extreme. The oldest surviving globe of the world, from 1492, showed no land south of Africa (Stevenson 1921); neither did some maps in the following century by Waldseemüller, Münster, and Cabot. In a remarkable world map of around 1508, Francesco Rosselli retained a southern land mass, but of an apparently unprecedented and modern-looking kind: far smaller than Ptolemy's, isolated by ocean in the far south, and inscribed with the word 'Antarcticus' (Shirley 1993). (This term could also refer to the nearby Antarctic Circle, although there is no corresponding 'Arcticus' in the north.) This was the first use of that name, and no source has been identified for the unusual representation of the land mass (Whitfield 1994).

Mapping Terra Incognita

If map-makers such as those just mentioned rejected or, like Fra Mauro, questioned tradition in the light of new evidence, they were exceptions, and after Mercator's world map of 1569 established a new authoritative template for it, Terra Incognita was rarely absent from world maps in the sixteenth and much of the seventeenth centuries. Examples of the ways in which it was represented will now be discussed. In a study of the cultural significance of world maps, Whitfield argued that since 'the maps of the past often contained deeply subjective elements . . . a subjective approach to them is therefore a valid way of interpreting what is happening in these maps, and what lies behind them' (1994: preface). A similar approach is, at times, adopted here.

In about 1527, Franciscus Monachus of Antwerp produced a map that divided the world into the two hemispheres of Spanish and Portuguese possession

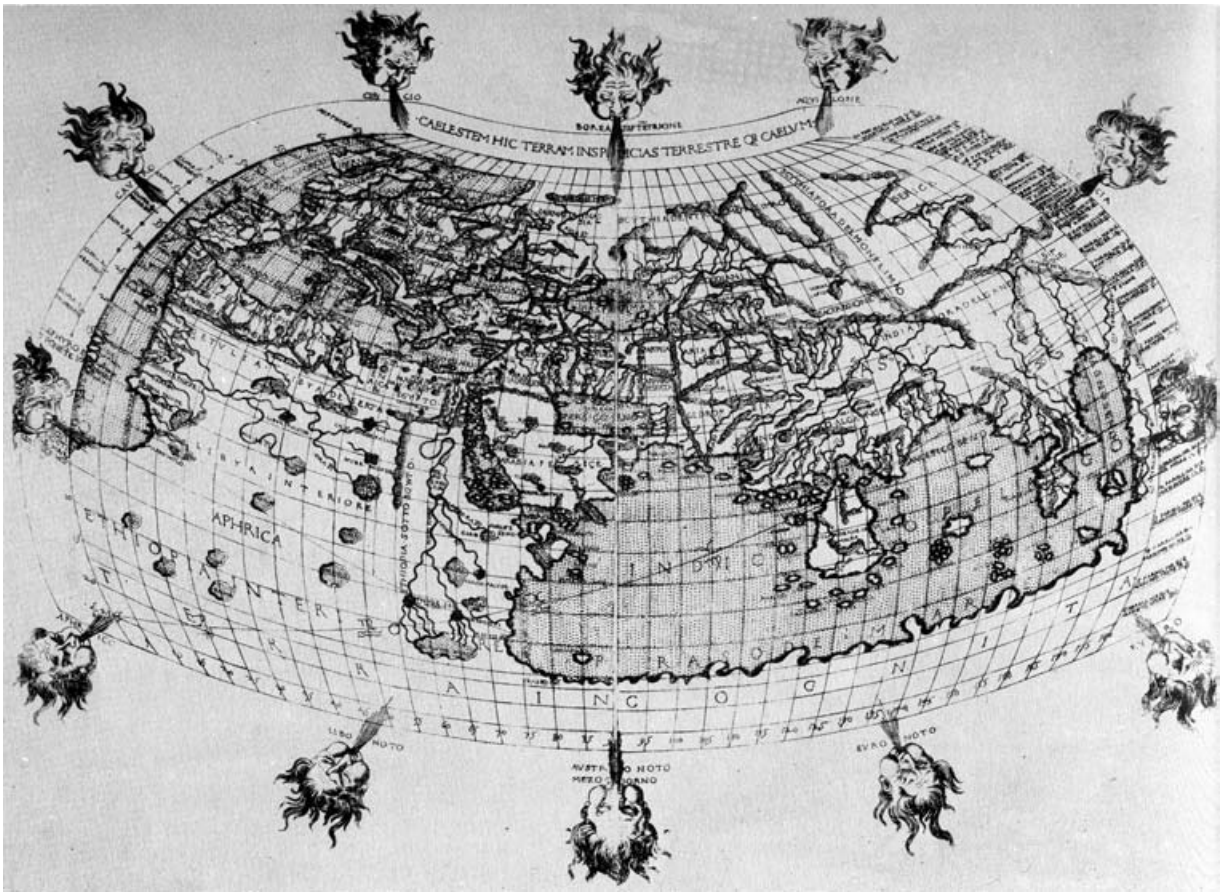

Fig. 1. One of the earliest Ptolemaic maps (Francesco Berlinghieri, Florence, 1482), showing the Indian Ocean enclosed by the southern Terra Incognita.

according to the 1494 Treaty of Tordesillas. A very large Terra Incognita is shown, with the incongruous inscription: 'this part of the world not yet discovered by our navigators' (Shirley 1993: 61). Here is an explicit statement that a place not having been discovered — although Monachus does mention a sighting of land at 52°S two years previously — was no obstacle to its being mapped, in this case obviously schematically. In addition to cartographical completeness, this claiming of the unknown along with the rest of the world is evidence of the involvement of maps with power referred to previously. Monachus could not yet make it clear who 'owned' the southern continent, but the hint of pride in the 'our navigators' and the sanguine 'not yet discovered' suggests that it was only a matter of time before it would be added to the other discoveries, properly charted and claimed. The confident 'not yet' was repeated by others, and in 1531 the French cartographer Oronce Finé went even further, boasting that his own magnificent version of the continent had been 'recently discovered but not yet *fully* explored' (Shirley 1993: 73; emphasis added). (As with Monachus, the mention of 'discovery' may be a reference to Magellan's observation of Tierra del Fuego to the south as he sailed the waterway that bears his name (Schilder 1976).)

The political power of maps is also well illustrated in recent Antarctic history, and two examples are given here. As Dodds (2002) has shown, Britain's struggle with Argentina and Chile over Antarctic territory in the period before the signing of the Antarctic Treaty was, in an important sense, a battle of maps, which were regarded as essential symbols of possession. The Colonial Office's instructions to surveyors of the Falkland Islands Dependencies Survey made it clear that the Survey's 'primary objective . . . [was] to strengthen His Majesty's title to the sector of Antarctica' (quoted in Dodds 2002: 19), and to that end a great deal of money and effort was expended in land-based surveying and aerial photography of extremely difficult terrain. Dodds indicated that the inaccessibility of the Antarctic regions gave those maps even greater importance as a basis for claims than in other parts of the British Empire, and that 'the more detailed the map, the greater the sense of ownership and control' (2002: 28). In 1959 the Antarctic Treaty cast a sleeping spell over territorial claims, but they are still taken very seriously by claimant states and shown on their maps. For example, Australia has recently charted the extent of its continental shelves, including those in the Australian Antarctic Territory, and submitted this information to the United Nations Convention on the Law

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of the Sea (Australia 2004a). Significantly, an attached 'Note' cites the Antarctic Treaty and states that 'Australia requests the Commission . . . not to take any action for the time being with regard to the information in this Submission that relates to continental shelf appurtenant to Antarctica' (Australia 2004b). Whereas in Monachus' map possession was unequivocal but charting incomplete, today the reverse appears true.

Monachus' Terra Incognita had been merely schematic, most of the area being annexed by three straight lines, but that soon changed. In 1538 Gerard Mercator breathed life into the imaginary continent in a world map that would be mimicked by almost all cartographers for more than a century. Mercator's Terra Incognita bore a more modest inscription than its model (Finé's of 1531): 'That land lies here is certain, but its size and extent are unknown' (quoted in Skelton 1958: 203). Nevertheless it was similarly gigantic and reached as far north as 35°S in the Pacific. His famous world map of 1569, which first used the projection by which he is known today, added some new features, including a huge promontory in the location of present-day Australia bearing names based on a mistaken reading of Marco Polo's tales. These errors would be copied by most world maps, in some cases long after explorers had proved them wrong (Shirley 1993). Richardson (1993) attempted a spirited defence of Mercator's doomed attempt to produce an accurate Terra Incognita, but we also have a contemporary window into the mind of a sixteenth-century map-maker in intriguing remarks by the French cartographer Guillaume Le Testu. In his atlas of 1556 Le Testu had made what Campbell has called 'a giant cartographic leap,' outlining and adding names to a southern continent that he admitted had 'not yet been discovered' (1996: 97), but in the accompanying commentary he was surprisingly candid about his methods:

> This area is called the austral region, because some say that there is a land to the south, or what is called Auster. However, *what I have marked and depicted is only by imagination*, and I have not noted or remarked on any of the commodities or incommodities of the place, nor its mountains, rivers, or other things; for there has never yet been any man who has made a certain discovery of it. Therefore I defer speaking of it until we have a more ample report. In the meantime, however, until our knowledge is greater, I have marked and named some promontories or capes in order to align the pieces in which I depict the area. (Quoted in Lestringant 1994: 133; emphasis added)

But did such licence matter? Sir Walter Raleigh, a map *user* of the next generation, thought not: 'the fictions (or let them be called coniectures) painted in Maps, doe serue only to mis-lead such discouerers as rashly beleiue in them' (quoted in Skelton 1958: 325). On the other hand, Raleigh was inclined to believe Mandeville's reports of 'ugly folk without heads, who have eyes in each shoulder; their mouths are . . . in the middle of their chest' (quoted in Lestringant 1994: ix–xx).

Once it was accepted that Terra Incognita could be mapped, and once Mercator had again established a grand template for doing so in the south, a great deal of otherwise empty cartographical space became available for filling, according to the purposes of the cartographer. And since the less an area was known the more room there was for the free play of imagination and tradition, Terra Incognita to some extent provided a space analogous to the borders of mediaeval maps as a screen for mental projection. In a manuscript world-map by Pierre Desceliers in 1550, for example, the southern continent and its great promontory derived from Mercator (as indeed much of the map) are filled with cartouches and painted scenes that mix contemporary history with legend (Whitfield 1994). And Paolo Forlani covered his huge 1565 version (Fig. 2), which extended north of the Tropic of Capricorn in two places, with an elaborate network of mountain chains and with fabulous animals that included 'a lion, a camel, an elephant, a rhinoceros, a griffin and a unicorn!' (Shirley 1993: 133). While at first sight these may appear reminiscent of the creatures on the borders of the Hereford mappemonde, Lestringant (1994) pointed out that as world views changed in the Renaissance, cartographers started to relinquish the role of cosmographer, and the significance of such scenes became less allegorical and more picturesque. Empty cartographic space was still filled, nonetheless, and an extreme example, nominated by Campbell as 'perhaps the most wide-ranging invention known to the history of cartography,' took Le Testu's atlas as its starting point (1996: 97). Egerton Manuscript 1513, a collection of charts dating from about 1587 held by the British Library, reveals a carefully drawn southern continent of which every part was supplied with names appearing to describe physical features that had actually been witnessed: 'cap a l'isle verte' (green island cape), 'riviere des huistres' (oyster river), and so on (Campbell 1996: 98). There are also pictures of flora, fauna, inhabitants and their houses, and even of ships 'discovering' the lands. This is of a different order from Le Testu's licence and appears to be a deliberate attempt to make the place appear as real as any other on the map that its viewers knew (Campbell 1996).

By contrast, Abraham Ortelius' famous world map from his *Theatrum Orbis Terrarum* of 1570, the first collection of maps designed as an atlas, shows a 'not-yet-known-southern-land' based on Mercator's but appearing all the more vast for being completely unadorned. Ortelius, the head of a very successful publishing company at the cutting edge of contemporary cartography, was also a deeply moral man, and this 'double-consciousness' as Helgerson has termed it (2001: 249), is expressed in the map as a whole. The prominent quotation from Cicero at the bottom of the map has often been noted, and Helgerson saw it as evidence of a condemnation of the folly of 'all excessive attachment to the world' (2001: 248). It was, in fact, a slight misquotation of Cicero's words, which were: 'Quid enim videatur ei magnum

Fig. 2. A map by Paolo Forlani (Venice, 1565). It shows a gigantic, mountainous Terra Incognita populated by extraordinary animals.

in rebus humanis, cui aeternitas omnis totiusque mundi nota sit magnitudo?' (Cicero 1971: 366). Ortelius had: 'Quid ei potest videri magnum . . . ', but there is little change in the sense, which can be translated: 'For what can seem important in human affairs to someone who is aware of all eternity and the size of the whole world?' These words might also be interpreted as a statement of humility, given that Ortelius inscribed them prominently on his landmark achievement. Their detached, off-world perspective was enhanced, in one version (Shirley 1993: xxix), by a framing of purple clouds through which there were glimpses of a blue beyond. Perhaps it was another reflection of Ortelius' worldly–unworldly consciousness that he showed the outline of Terra Incognita according to the best information available but, as it was 'not yet known,' at least left most of the interior starkly blank.

The tendency to moralize via geography was considerably more conspicuous in the work of a famous contemporary, Jodocus Hondius, whose first world map had shown the whole world held in a net of latitude and longitude by a divine hand reaching out of a blazing Sun (Shirley 1993: 184). In contrast to Ortelius' understated Terra Incognita, Hondius' Christian Knight map of 1597 (Fig. 3) employed the large white space of the continent as the stage for a moral drama that eclipsed the geographical meaning of the world map above. (The word 'theatrum,' used by Ortelius, was commonly used in the titles of contemporary atlases (Albano 2001: 92), quite literally making 'all the world a stage.') Just as the edges of the Hereford mappemonde were available for the representation of a variety of non-geographical meanings, the single large empty space of Terra Incognita was for Hondius the ideal setting for his single, Christian allegory, and from there he could apply it to the entire world. The fundamental importance of the moral in this map was reinforced by its title: 'The image of the whole world in which is also set forth to please the student devoted to piety the earthly struggle of the Christian knight' (Helgerson 2001: 246). The words up to and including 'in which' ('in quo') formed one large, upper-case line and thereby syntactically fused the moral purpose explained in the line below to the statement of the whole map. On the grand stage of Terra Incognita, the large symbolic figures of Sin, Death, the World, the Flesh and the Devil assailed the knight, who was fully armed and had a halo of 'spirit' around his head. The whole work was marvellously engraved, but because these figures inhabit and dominate a world map so much more geographically sophisticated than that of the mappemondes, it seems, to modern eyes at least, paradoxical.

The discoveries of navigators such as Drake, Schouten, Le Maire, and Tasman did little more than modify the shape of Terra Incognita in the minds of some, and it long continued to be represented in maps. As late as 1754, just 30 years before Cook's second voyage, 'the French geographer Phillipe Buache provided a detailed physiography, showing two major land masses and a glacial sea' (Shirley 1993: xiv; for the map, see Tooley 1970). (In an issue of *The Gentleman's Magazine*, 'the celebrated M. Buache' gave a detailed explanation of his map, presenting wild conjecture in the guise of sound reasoning based on evidence (1763: 32).) The

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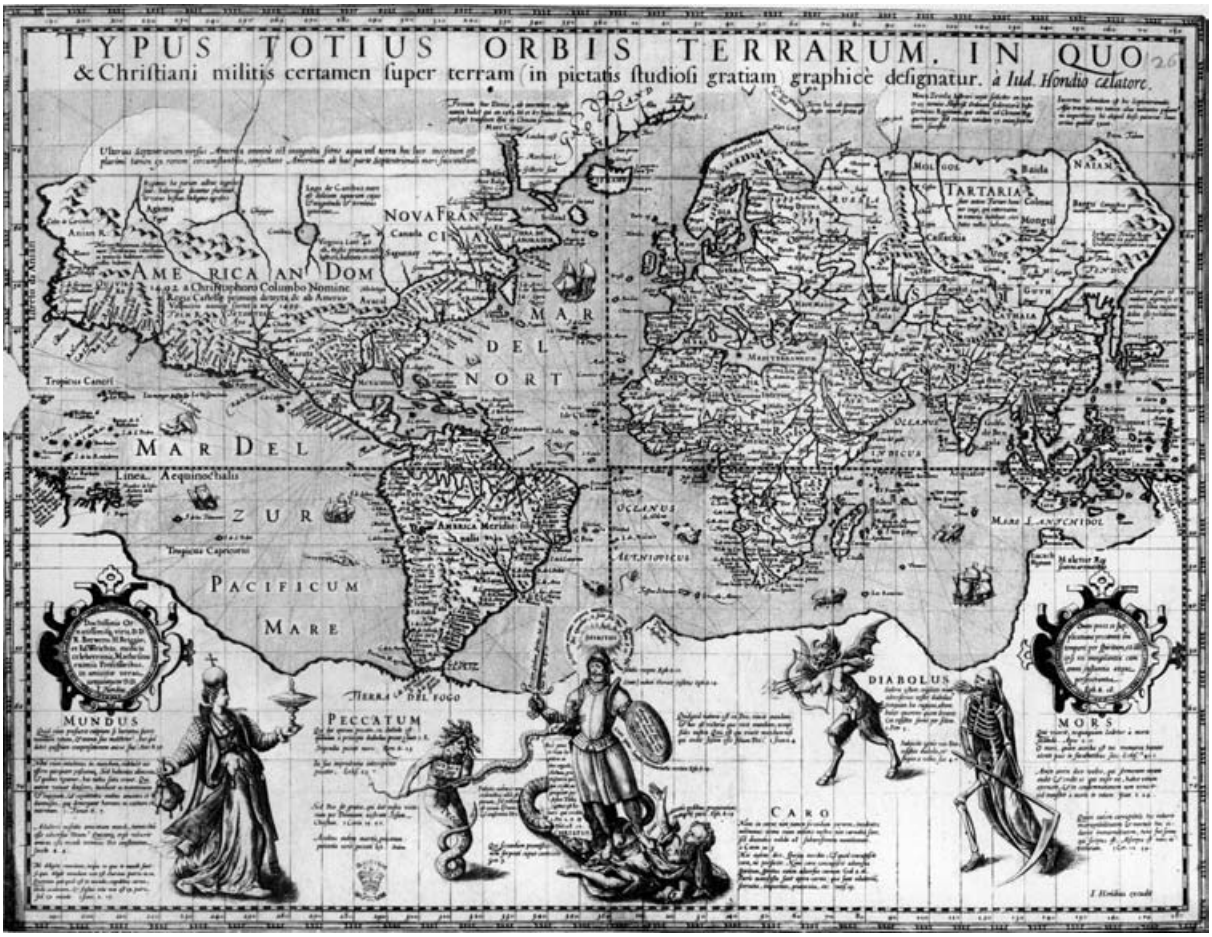

Fig. 3. A map by Jodocus Hondius (Amsterdam? c.1597). This so-called 'Christian Knight' map was one of the first based on Mercator's projection. The knight is being attacked by symbolic figures including the Devil, Sin, and Death in a vast Antarctic setting.

hydrographer Alexander Dalrymple, who had hoped to be chosen in Cook's place to lead the search for the southern continent, was the author of two books 'proving' its existence and giving it an 'extent greater than the whole civilised part of Asia, from Turkey, to the eastern extremity of China' (Berthon and Robinson 1991: 125).

Maps that did not show Terra Incognita at all were even rarer after Mercator than before, although Edward Wright omitted it in 1599, explaining in a cartouche that his world map was 'a true hydrographical description of so much of the world as has beene hetherto discovered and is comme to our knowledge' (Shirley 1993: 239). Wright himself then succumbed briefly, sketching Terra Incognita into his next version before erasing it again in a third. But there were contemporary critics of mapping terra incognita.

Contemporary critics

When Sir Francis Drake chanced upon the southern tip of South America in 1578, the sketch map and notes of his chaplain, Fletcher, made it obvious that no continent existed anywhere near, but hard evidence did nothing to banish the chimera and was instead manipulated to sustain it (Schilder 1976; Simpson-Housley 1992). Fletcher later wrote:

> It hath been a dream through many ages that these islands [near Cape Horn] have been a main[land], and that it hath been terra incognita, wherein many strange monsters lived. Indeed, it might truly before this time be called incognita, for howsoever the maps and general descriptions of cosmographers, either upon the deceivable reports of other men, or the deceitful imaginations of themselves (supposing never herein to be corrected), have set it down, yet it is true, that before this time, it was never discovered or certainly known by any traveller that we have heard of. (Quoted in Hampden 1972: 159)

The English bishop Joseph Hall made his thoughts on the matter equally clear when, in 1605, he published a burlesque traveller's tale and satire on human folly set in the imaginary land (1937). The book included a caricature world map (Fig. 4) with an inflated southern continent featuring islands, rivers, and mountains and divided into

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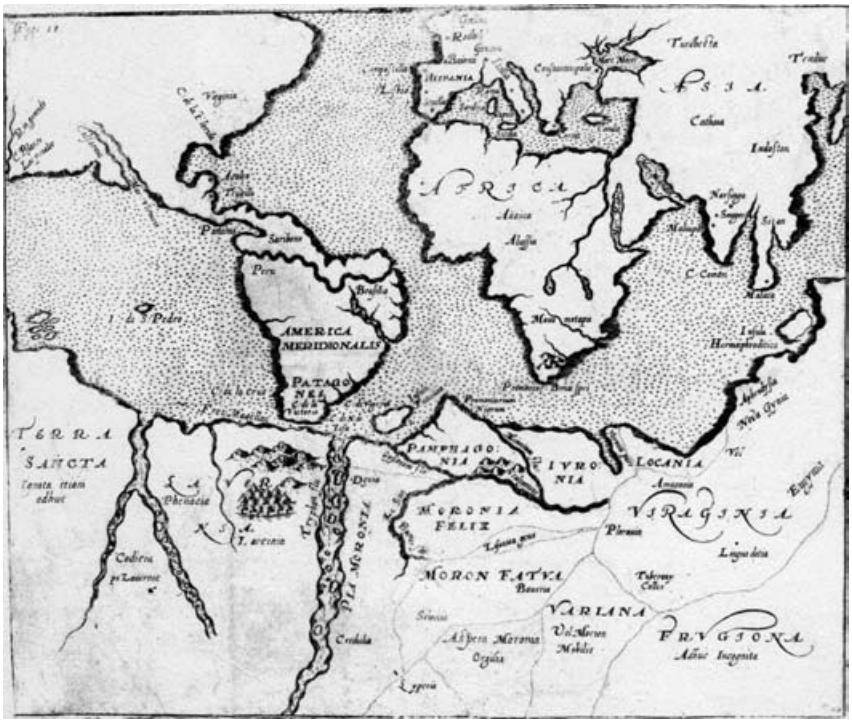

Fig. 4. A map by Joseph Hall (London, 1605). This world map, from his satirical book *Mundus alter et idem*, caricatures the standard representation of a colossal, unknown southern continent and divides it into ironically named countries.

countries with mocking names like 'Moronia Felix' (Land of the Happy Idiot) and a province called 'Credulia' (Shirley 1993). Hall added tetchily:

> It hath euer offended mee to looke vpon the Geographicall mapps and find this Terra Australis, nondum cognita. The vnknown Southerne Continent. What good spirit but would greeue at this? If they know it for a Continent, and for a Southerne Continent, why then doe they call it vnknowne? But if it bee vnknowne; why doe all the Geographers describe it after one forme and site? (Quoted in Richardson 1993: 67–68)

This virgin territory in the south supplied the perfect setting for other satires and utopias too, and in 1676 a Franciscan monk 'of scandalous life' published *La Terre Australe Connue* ('The Known Southern Land') describing an apparently hermaphrodite people who 'did not have to till the ground because a species of long-nosed swine that rooted in straight lines had been domesticated and trained to do the plowing' (Ramsay 1972: 44).

The final word should be given to a cartographer. In 1666 Pieter Goos issued a world map that showed all the discoveries of Tasman's two voyages and (speculations by French cartographers aside) was to form the basis of the geographical representation of Australia for the next 100 years. In an English edition of his atlas, the Dutchman was laconic:

> Some wont to cal for a fifth part of the world Terra Australis or Magellanica, the countreys in the South of the Straat Magellanas; but sith the shipping by the Hollanders to those parts, but some few jears hence it known, that Tierra del Fuego by Magellanes called, is nothing than a haep of Ilands; and no firm land there about, which may beare the name of the 5th part of the world, I thinke it sufficient that I have touched it with these few words. (Quoted in Schilder 1976: 418)

Conclusion

There is a fundamental need for humans to organize an understanding of the world around them (Downs and Stea 1977), and maps offer a sense of security, of knowing, not being lost, that is obvious in their everyday use. The apparent irony of mapping the unknown, exemplified by the long history of Terra Incognita, is partly resolved by Cosgrove's observation that blank spaces inside a map's frame 'generate and reflect aesthetic and epistemological anxiety' (1999: 10). Thus the filling-in of maps, and other gaps in knowledge, brings a sense of security. As described at the outset, much mapping and imaging of Antarctica is occurring today (in some cases also of what is not visible). Moreover, galaxies and objects at unthinkably greater distances than Terra Incognita are being charted. The mapping history of the unknown southern land offers a useful reminder of the possibility of illusion in these new maps too. There appear to be ultimate limits on the completeness of knowledge in any case, and no map, as Bohm remarked, can ever be entirely accurate: in that sense, Antarctica will never be completely mapped. But the limitations of knowledge and mapping aside, emptiness may have value in itself. In some early maps it reflected a tolerance of uncertainty, while in others

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it provided a place for expressing demonic, moral, or religious layers of world views. Certainly there are fewer blanks on maps today — even of so pre-eminent a symbol of emptiness as Antarctica — but there is also less room for the landscapes and the terra incognita of the mind.

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