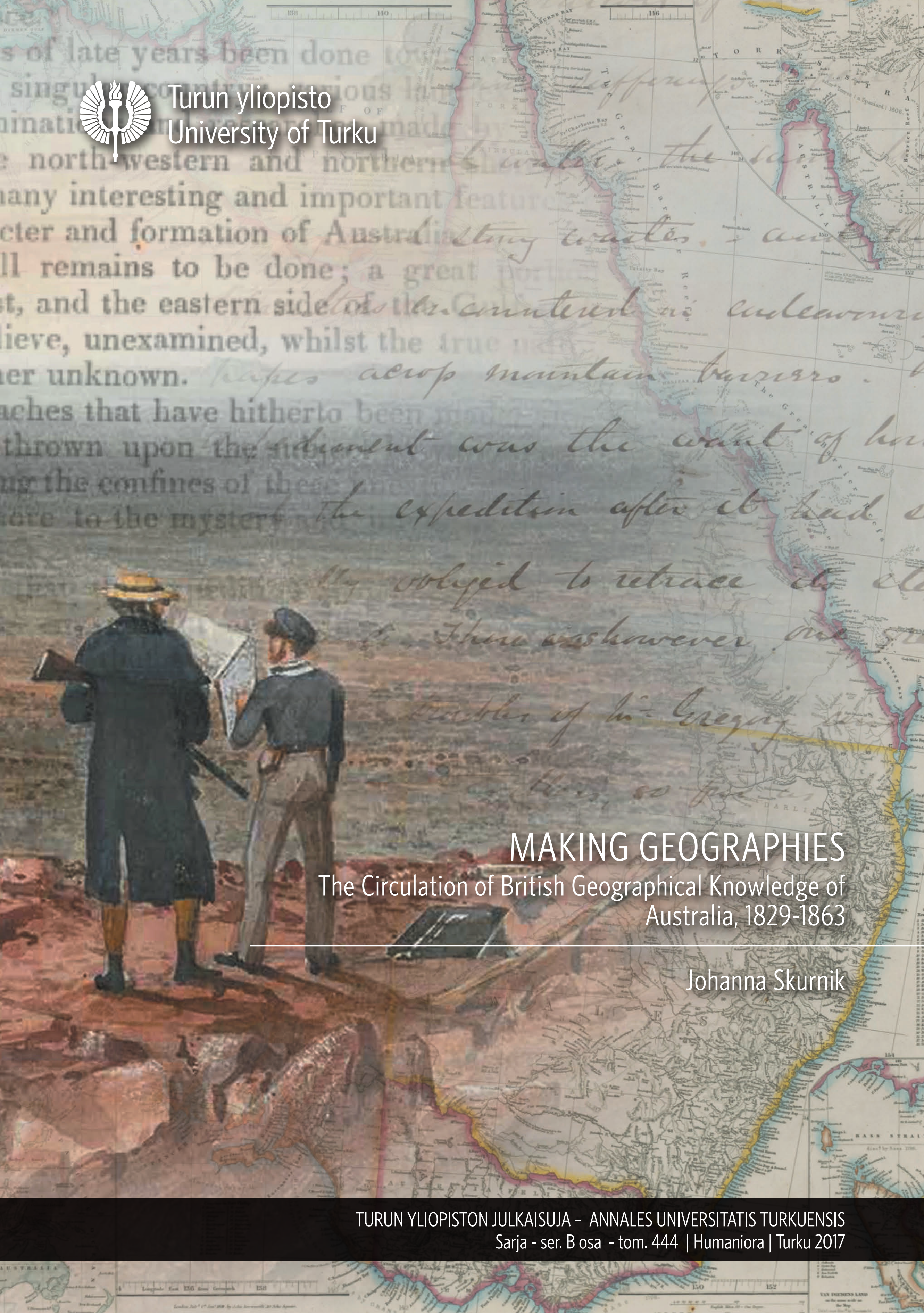

Turun yliopisto
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MAKING GEOGRAPHIES

The Circulation of British Geographical Knowledge of Australia, 1829-1863

Johanna Skurnik

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Faculty of Humanities
School of History, Culture and Arts Studies
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Doctoral programme Juno

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Contents

Abstract

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SKURNIK, JOHANNA: Making Geographies. The Circulation of British Geographies of Australia, 1829–1863
Doctoral Dissertation, 270 pages
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This study is concerned with the challenging question of how British geographies of Australia were made in the mid-nineteenth century. It examines the processes and practices that constituted the analysis, movement and use of the enormous amount of information produced by British explorations and surveys of the Australian continent. The study focuses on the period between 1829-1863, when the interior of the continent was explored and settlements expanded at a rapid rate. The study focuses on the roles of the following actors in Great Britain and the Australian colonies: The Colonial Office, official establishments overseen by governors in the colonies, the Royal Geographical Society (RGS) and the cartographer John Arrowsmith (1790–1873). The material examined consists of the official correspondence between the Colonial Office and the governors of the colonies, and other correspondence, printed material, and manuscript and printed maps that were prepared in the Australian colonies and in Great Britain by different actors.

The research is conducted by investigating the processes of knowledge-making with methodological tools used in the history of knowledge and processual map history. These include the analytical tool of 'circulation' and examining the processes that constituted the production, movement and use of maps. In practice, the study is conducted by (1) examining the manuscript material (maps, texts) alongside the printed and published material and (2) by examining the material relating to their circulation and use, such as minutes, annotations and marginalia.

In sum, the research findings demonstrate how the snippets of information produced by different individuals gained the power to define the continent by being circulated. These developments, which took place in the mid-nineteenth century, were rooted in the social processes that occurred in different, interconnected locations. The main findings and implications of this study include: (1) The production of British geographies of Australia was a spatio-temporal process, as the location of knowledge-work and the pace at which material became available in different locations influenced the type of knowledge formed by the actors; (2) Geographical knowledge of Australia was achieved through chains of knowledge brokers in different locations. Pieces of information were mediated and transformed in the hands of numerous different actors into geographical knowledge; (3) Intertextuality and multi-modality contributed to the production of geographical knowledge, whereby maps and text had co-constitutive roles in the process; (4) John Arrowsmith was a key individual in the process of mapping Australia. This was due to his strong relationship with the Colonial Office, the RGS and Australian explorers; (5) The processual approach is productive when studying the history of knowledge and this work encourages the use of archival material in order to examine the processes of knowledge-making. This study encourages the further application of this method, especially in relation to studies aiming to understand how knowledge was formed and how structures of knowledge were established in different locations.

Keywords
Administration, Australia, British Empire, Bureaucracy, Cartography, Circulation, Civil servants, Colonial surveying, Colonialism, Exploration, Explorers, Geographical knowledge, Geography, Great Britain, History of cartography, History of knowledge, History, Imperialism, John Arrowsmith, Maps, New South Wales, Queensland, South Australia, The Colonial Office, The nineteenth century, The Royal Geographical Society, Victoria, Western Australia.

Abstrakti

TURUN YLIOPISTO
Humanistinen tiedekunta
Historian, kulttuurin ja taiteiden tutkimuksen laitos
Yleinen historia

SKURNIK, JOHANNA: Making Geographies. The Circulation of British Geographical Knowledge of Australia, 1829–1863
Väitöskirja, 270 sivua
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Väitöskirjassani tutkin Australiaa koskevan maantieteellisen tiedon muodostamista 1800-luvun keskimmäisinä vuosikymmeninä eli ajankohtana, jolloin britit enenevässä määrin asuttivat mannerta. Tutkin käytäntöjä ja prosesseja, joiden tuloksena tutkimusmatkojan ja kartoittamisen tuloksena tuotettua Australian mannerta koskevaa informaatiota analysoitiin, välitettiin eri paikkoihin ja käytettiin. Tutkimukseni keskittyy vuosien 1829–1863 väliseen ajanjaksoon, jolloin mantereen sisäosia tutkittiin intensiivisesti ja eri puolille mannerta perustetut siirtokunnat laajenivat kiihtyvällä vauhdilla. Tarkastelen erityisesti seuraavia toimijoita Australian siirtokunnissa ja Britanniassa: Britannian siirtomaaministeriö, siirtokuntien kuvernöörit, Lontoossa toiminut Royal Geographical Society ja kartografi John Arrowsmith (1790–1873). Tutkimuksessa käytetyt aineistot koostuvat kirjeenvaihdosta, painetuista materiaaleista, käsikirjoituskartoista ja painetuista kartoista, joita eri toimijat tuottivat Britanniassa ja Australian siirtokunnissa.

Toteutan tutkimukseni rekonstruoimalla tiedon liikkumisen ja tuottamiseen prosesseja. Tutkimukseni menetelmät yhdistävät työkaluja tiedon historiasta ja kartografian historiasta. Käytän analyysin välineenä tiedon liikkuvuttaa kuvaavaa käsitettä sirkulaatiota ja tutkin karttoja niiden tuottamisen, liikkumisen ja käyttämisen prosessien osana. Käytännössä toteutan tutkimukseni 1) lukemalla ristiin käsikirjoitusaineistoja (kartat, tekstit) painettujen ja julkaistujen materiaalien kanssa ja 2) tutkimalla aineistoja, jotka kertovat eri tekstien ja karttojen liikkumisesta ja käytöstä, kuten muistiinpanoja ja marginaalimerkintöjä.

Tutkimukseni tulokset osoittavat kuinka tiedon osat saivat merkityksensä osana laajempia tietorakenteita liikkumalla paikasta ja toimijalta toiselle. Tiedon liike perustui sosiaalisille käytännöille, jotka sitoivat yhteen eri puolilla maailmaa sijaitsevat paikat. Tutkimuksen päätuloksia ovat: 1) Maantieteellisen tiedon tuottaminen oli spatio-temporaalinen prosessi ja nopeus, jolla eri toimijat saivat eri materiaalit käyttöönsä, vaikutti muodostetun tiedon sisältöön; 2) Maantieteellistä tietoa tuotettiin toisiinsa yhteydessä olevien tiedon välittäjien ja työstäjien työn tuloksena. Eri toimijat välittivät tietoa eteenpäin ja muokkasivat tietoa näin tehdessään; 3) Intertekstuaalisuudella ja monimodaalisuudella oli keskeinen merkitys tiedon muodostamisen prosesseissa. Kartoilla ja teksteillä oli toisiaan täydentävä rooli; 4) John Arrowsmith oli avainhenkilö Australian kartoittamisessa. Tämä johtui hänen verkostoistaan siirtomaaministeriön ja RGS:n kanssa; 5) Prosessuaalinen näkökulma on hedelmällinen lähtökohta tiedon muodostumisen prosessien tutkimiseen ja tutkimus alleviivaa arkistomateriaalin käytön merkitystä tiedon muodostumisen tutkimuksessa. Tutkimuksen tulokset rohkaisevat sirkulaation ja prosessuaalisten näkökulmien käyttöön tutkimuksissa, joissa pyritään tutkimaan, kuinka eri toimijat ovat historiallisesti tuottaneet tietoa ja näin osallistuneet erilaisten tietorakenteiden vakiinnuttamiseen.

Avainsanat
1800-luku, Australia, Britti-imperiumi, byrokratia, Etelä-Australia, hallinnon historia, historia, imperialismi, Iso-Britannia, John Arrowsmith, kartat, kartografia, kartografian historia, kartoittaminen, kolonialismi, Länsi-Australia, maantiede, maantieteellinen tieto, Queensland, Royal Georaphical Society, siirtomaaministeriö, tiedon historia, tiedon liikkuvuus, tutkimusmatkailijat, tutkimusmatkailu, Uusi Etelä-Wales, Victoria, virkamiehet

List of Illustrations

List of Abbrevations

BL	The British Library
CUL	Cambridge University Library
DRHMC	David Rumsey Historical Map Collection
JRGS	*Journal of the Royal Geographical Society*
NLA	National Library of Australia
PRGS	*Proceedings of the Royal Geographical Society*
PROV	Public Record Office of Victoria
RGS	Royal Geographical Society
SLNSW	State Library of New South Wales
SLSA	State Library of South Australia
SLV	State Library Victoria
SRANSW	State Records Authority of New South Wales
SROSA	State Records Office of South Australia
SROWA	State Records Office of Western Australia
TNA	The National Archives

Acknowledgements

Whilst visiting Australia in the Spring of 2015 to conduct research in the country's state archives and libraries I stumbled across an artwork by the artist Bea Maddock (1958–2016). The National Gallery of Australia in Canberra was given Maddock's painting, which consists of seven parts, as a gift to mark the bicentenary of Australia. Looking at the artwork across the room I was struck by its tones and composition. On closer examination, I was captivated by its title, a phrase that, I later realized, has much relevance for a student of history. Maddock's "We live in the meanings we are able to discern" (1987) addresses questions of colonialism in Antarctica at the beginning of the twentieth century and as such is an examination of questions of place, the environment and Australia's history. When I returned to Finland and continued to plunge into the world of the nineteenth-century civil servants, explorers, geographers and surveyors, I began to increasingly relate to the message captured in Maddock's work.

Studying the past is both exhilarating and daunting: it is an investigation into something already lost, and into something that can be discovered from the different fragments that remain. It is about perspective, choices and contexts. It is an effort to discern the meanings of historical actors: to research with incomplete data the processes and practices that shaped the world that once was and which has implications for the present day. Writing history is about using our creativity to uncover the contexts in which different processes took place: it is about discerning meanings in the past and as such about starting an adventure into the seemingly familiar but ultimately unknown.

Luckily, setting out on such an adventure as a PhD student by diving into the archives in order to read about the thinking of the various historical actors who worked in different parts of the world, and contemplating how to examine their lives on paper, has not been a solitary endeavor. My work has been supported and guided by the advice and encouragement of several individuals that I wish to thank.

My most sincere thanks are due to my supervisors Professor Taina Syrjämaa and Professor Leila Koivunen at the University of Turku. They have seen me grow and develop as a graduate student and as a doctoral candidate. It has been a privilege to learn how to undertake research and how to write history under their supervision and I am thankful for all their support and advice. There were many occasions when I knocked on their doors in a state of confusion as I was working with my primary sources. Every single time I left their offices with fresh perspectives, tools or questions that helped me to continue my research. They have been there to support me with the difficult challenges, as well as easier tasks, involved with writing a PhD thesis. This support has been instrumental in enabling me to successfully execute my project and to develop as a historian.

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My work in the archives would have been much more complex without the expertise of the staff at the many institutions I visited. I would especially like to thank Rose Mitchell, the map curator at the National Archives in the United Kingdom, for her guidance with the map collections at this institution. I would also like to thank Julie Carrington, of the Royal Geographical Society, for her help to locate relevant material for my work and also for mailing copies of the material to Finland.

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My years of research have been filled with many great friendships that have supported my work and made my life meaningful. I would like to sincerely thank Aleksi Huhta for every lunch and beer we consumed together and for sponsoring my archival trip to Australia with a rucksack; Anniina Lehtokari for joy, "taukojumppa" and discussions on life; Antti-Jussi Nygård for laughter, technical support and discussions on territoriality; Essi Huuhka for valuable friendship; Henrikki Tenkanen for support and understanding on what aiming for a finished thesis entails; Jenni and Tapio Enberg for their heart-warming friendship; Kia Syrjätie for the many moments of laughter; Laura Luukkonen for tea and sympathy; Lauri Keskinen for supportive discussions on the research process and writing; Maija Soini for our expeditions together; Salli Raumonen for her decades of unquestioned friendship and for being the sister I never had; Salla Wahlman for sharing her impressive wisdom with me; Suvi and Sören Hoyer for my home away from home in Germany; and finally Viivi Naatula for her constant inspiration.

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INTRODUCTION

> When I consider my promise to give a lecture on "What Australia is, and what it may be," I am compelled to admit that the materials are so vast, and so difficult of arrangement for illustrating the first branch of the inquiry, that there is no chance of our commencing the second this evening.[1]

In his recent monograph Dane Kennedy examines the British exploration of Australia and Africa during the nineteenth century and characterizes exploration as a "knowledge producing enterprise". He examines how explorers of these continents produced knowledge. He especially investigates the problems inherent in these processes, as exploration in practice clashed with its ideals.[2] If the way explorers produced knowledge in the field was problematic, so too were the processes of analysis, selection and generalization that took place after this knowledge was gathered in different locations. This was a problem pondered in 1863 by Richard MacDonnell, a former governor of the colony of South Australia who is quoted above, when beginning a lecture on Australia in Dublin, Ireland. He questioned how best to select and put into perspective relevant information from material that is "so vast, and so difficult of arrangement" in order to describe what is actually known about a particular area of the world. MacDonnell's statement aptly brings to the fore the complexities encountered by individuals when aiming to produce synthetic descriptions of the world.

This study is concerned with British exploration and surveying of Australia in the mid-nineteenth century; a period when its interior was explored and settlements in different parts of the continent were expanding. It aims to understand the processes and practices that constituted the management of the enormous amount of information in different material forms that derived from the exploration and surveying of the Australian continent. In sum, it is concerned with the simple, but challenging question of how the British geographies of Australia were made in the mid-nineteenth century.

At the time when MacDonnell was delivering his lecture, the ability to locate the major settlements in Australia, such as Sydney and Melbourne and colonies such as New South Wales and Victoria, was not self-evident. MacDonnell himself summarized some of the views in circulation during his lecture by referring to a hearsay story about a letter "addressed to a gentleman 'in Sydney, at Melbourne, South Australia'".[3]

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[1] MacDonnell 1863, 3.
[2] Kennedy 2013, 1–2.
[3] MacDonnell 1863, 4.

Many reasons were to blame for the ignorance and confusion regarding the geography of Australia. Maps and reports of explorations were one of the primary ways to learn and understand about the Australian continent. In general, the century marked an unprecedented growth in print and cartographic materials, especially since the 1850s when maps became leisurely commodities. Individuals encountered geographies of Australia for example through explorers' accounts and general maps of the continent. However, they were not accessible to all and reading maps and understanding spatial relations required a level of education that was not available for everyone. Furthermore, the character of knowledge they communicated was manifold and not fixed: it was subject to the choices made and the information gained by the different actors participating in the production of maps and texts.[4]

The steady growth of emigration to the Australian colonies as the decades passed brought greater attention to the continent in Britain, but this did not equate to a great deal of well-informed geographical knowledge about Australia.[5] Understanding and writing about the Australian environment in a synthetic manner was challenging. The administrators of the colonies struggled with the fact that the public in Britain was largely ignorant of the actual state of the settlements. Many people thought that they were either disastrous misadventures, as was falsely believed in the early days of New South Wales, or the public was overly optimistic about the existing possibilities offered by the continent. This was the case regarding the settlement at Swan River on the western coast and surfaced in discussions focusing on forming settlements in the north of the continent.[6] Furthermore, compared to Africa, another "unknown" continent, Australian exploration was less interesting to the British public.[7] Thus, Australia was known as New Holland for many of MacDonnell's contemporaries; it was often referred to as an 'island-continent', located somewhere very far away.

Conceptualizations of the Australian continent in the mid-nineteenth century were in a constant state of flux and its geographies could and were understood in different ways, depending on the individual in question. The geographical designation of Australia as an 'island-continent', as much as the multiplicity of names used to refer to it—in addition to New Holland, the continent was referred to as Notasia or Ulimaroa in the early nineteenth century—reflected its ambiguous position in world geography. Throughout the century the question of whether Australia should be counted as a continent remained open for debate, as no fixed understanding of the term existed. Simultaneously, Australia could be represented as a distinct part of the world and grouped together with the other South Pacific islands, using the umbrella term Australasia. Only in the beginning of the twentieth century

[4] Atkinson 2004, 86–88; Foliard 2017, 74–75, 78.
[5] Atkinson 2004, 86–88. For quantitative data for the numbers of free migrants see Haines and Shlomowitz 1991.
[6] Karskens 2013, 96; Cameron 1981, 51–106.
[7] Kennedy 2013, 46.

the discussion settled and Australia started to be categorized as part of Oceania, which constituted the fifth part of the world alongside Africa, the Americas, Asia, and Europe.[8]

The study of mid-nineteenth-century British geographies of Australia is inherently an endeavor that involves examining the multifaceted and intertwined processes of the expansion of territorial influence and the exploration and surveying of the continent. Measuring and mapping techniques were widely applied throughout the century in different parts of the world, thereby enabling a comprehensive understanding of the planet in its entirety. Thus, the British attempt to produce geographies of Australia occurred in a context in which explorers, geographers and cartographers gazed upon maps with the aim of advancing science and civilization. Expeditions in different parts of the world made it possible to update knowledge derived from books devoted to geography, maps and globes. The increased mobility of people, ideas and items, as well as technological advancements in print culture created a new tempo for the formation of knowledge of faraway lands. This simultaneously facilitated and challenged the work of geographers and cartographers in their studies, as new information became available at a much greater rate.

Australia was one of four regions in which the British undertook major explorations during the nineteenth century (the other three areas were Africa, Central Asia and the Arctic). After the crossing of the Blue Mountains, located in the southeastern corner of the continent, exploration steadily increased, reaching a peak between the 1840s and the early 1860s. During this period, the inland was extensively examined and by the 1860s a rough comprehension of the interior had evolved.[9]

The imperial government and the Royal Geographical Society (RGS) in London were involved in planning and executing some of the exploring efforts in Australia. However, the interests of the colonial officers and settlers in the colonies were far more influential in shaping the goals and the execution of the majority of explorations that were undertaken. In fact, most of the expeditions were organized at the initiative of individual colonies, in search of new pastoral and mineralogical opportunities. Compared to Africa, British exploration in Australia was less like an imperial enterprise, and more like a series of feats, as Dane Kennedy notes, "enmeshed in the political machinations" of the actors present in the colonies.[10]

Surveys in the different parts of the continent progressed slowly but steadily, as new settlements were established. The continent as a whole became a British territory once the settlement on the mouth of Swan River on the western coast was established in 1829. The British based their territorial claims on the titles of discovery and occupation, thereby denying indigenous rights to the land. The British later explained their unwillingness to sign

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[8] Lewis & Wigen 1997, 28–31, 40; Kennedy 2013, 17. The name Ulimaroa was coined by Swedish Daniel Djurberg and subsequently used by European cartographers especially during the first decades of the nineteenth-century. See Tent and Geraghty 2011.

[9] Stafford 1999, 300.

[10] Kennedy 2013, 99-100, 128.

treaties by referring to the Australian indigenous peoples' lack of organized polities and engagement with agriculture.[11] The surveying of the land was a means to transform it into property and improve it. Thus, the process that took place in Australia constituted part of the "Great Land Rush", which contributed to the shaping of our present world.[12]

Exploration and surveying were tightly intertwined and formed part of the geographically contingent process of expanding the British Empire. British control over the Australian continent in the nineteenth-century occurred within the context of the expansion of the empire and the expansion of European influence in different parts of the world more generally. The British consolidated their position in Asia and expanded their white settlements in Africa, Canada, Australia and New Zealand, as well as annexing new territories in the Pacific. This was especially the case as the century drew to a close. Expansion was neither simultaneous nor coherent and its consequences differed.[13] By the 1860s, most of the Australia colonies had been granted self-government, which transferred authority over domestic affairs to the settlers.[14]

The increased availability of measured geographical data was matched by a growing enthusiasm amongst officials in the British government to collect statistical data pertaining to their territories. It related to interests to expand bureaucratic practices to ensure a cohesive administration, an ideal increasingly shaping the state practices in Europe.[15] Distances and geography mattered: the Australian colonies were ruled and explored in relative isolation, posing challenges for the exercise of metropolitan control. Thus, the "rationalized" and documentary bureaucratic system of correspondence, reporting and minuting aimed to solve these evolving issues. These practices impacted the circuits of geographical and cartographical knowledge that increasingly flowed between the colonies and Britain within the reports of governors and other colonial officials.

The Australian colonies and its geography at large became part of the daily business of many colonial officials (in the new colonies and in London) through the flow of different type of material. In this study, to tackle the question of "making geographies", I focus on the knowledge work and "brokering" undertaken by particular individuals and institutions that were tightly connected to the management of information that emerged from the surveys and exploration of the continent. These include the governors' establishments in the colonies, the Royal Geographical Society in London, administrators at the Colonial Office and John Arrowsmith (1790-1873), one of the foremost cartographers of the time. In this study, we will examine the records of meetings at the RGS, as well as scrutinizing the view from the desk of busy clerks, who were toiling away at administrative tasks related to the Eastern colonies. Moreover, we will analyze the viewpoint of a cartographer constructing his maps, as well as governors who toured their colonial territories. Through their daily

[11] Belmessous 2014a, 9-10; Belmessous 2014b, 186-213.
[12] For a meticulous examination of the role of land in shaping modernity, see Weawer 2003.
[13] Porter 1999.
[14] Denoon and Wyndham 1999; Curthoys and Mitchell 2013; Kennedy 2013, 99.
[15] Osterhammel 2014, 23, 78-80, 605-7.

work these actors participated in the construction of the various geographical conceptualizations that emerged in the mid-nineteenth century.

Consequently, even though this is a thesis set in the context of British colonization of the Australian continent, it is ultimately a study of the practices required for the management and formation of geographical and cartographical knowledge that cannot simply be reduced to the ethos of imperialism. It is concerned with the "inner workings of a particular knowledge-circulating system".[16] The practices examined include an analysis of the geographical and cartographical material, as well as how they circulated between the colonies and different actors. This study will also examine how individuals and institutions collected, preserved and published data emanating from Australia, as well as how they managed situations when material was unavailable.

These practices are important to identify and warrant investigation, as they conditioned the shape of knowledge that was expressed via material in different locations. Furthermore, they constituted the processes of generalization and establishment of knowledge structures that shaped understandings of the world. An examination of routine practices demonstrates new levels of how different individuals worked with an abundance of information, which they compiled. Therefore, in addition to producing new information about the processes specific to the Australian case, this study develops the frameworks that enable a thorough examination of the complexities inherent in the process of forming knowledge about the world.

Previous Research and Theoretical Starting Points for a Study on the Formation of Geographical Knowledge

Approaching Australia: Previous Research on Knowledge-Producing Enterprizes

The research problem posed by the present study is linked to and contributes to many fields of study that offer starting points in the examination of the processes of making geographies. The most important aspects relevant to the framework of this thesis concern the research conducted in the history of knowledge and science, the history of cartography and the historical geography of the British Empire. These fields are interconnected. They offer shared theoretical interests in networks and mobility as tools to uncover how different people and material constituted the process of constructing knowledge about the world.

Taking note of the mobility of cartographic and geographic material is not a new approach. Gerald R. Crone, the former librarian and curator of maps of the Royal Geographical

[16] I thank Professor David Lambert for this characterization of my study.

Society, characterized the processes that occurred once the Australian explorers and surveyors returned from the field in the following manner:

> The explorers' rough maps found their way back, *via* the survey offices to the Colonial Office in London. There, engraved by London map publishers they appeared in official reports, publications of the Royal Geographical Society, and books of travel.[17]

Crone's fleeting notions in his book, which is an introduction to the history of cartography, in regard to how different material circulated from one place to another and who worked with it, provides a rough framework for this study. In spite of being identified over four decades ago, a comprehensive study of the processes that occurred has not been conducted. We are actually rather ignorant of how geographical and cartographical data—numerous texts and tables in addition to 'rough maps'—were transmitted from the explorers in Australia to colonial and imperial officers, commercial cartographers, scientific societies and book publishers. Similarly, little of note has been written regarding the conditions that often challenged the straightforward realization of these processes and how the practices of mediation affected this material.

The lack of knowledge relating to these issues is not peculiar to the Australian context, as it has been widely identified by historians of the British Empire interested in the histories of exploration, cartography and knowledge in the past two decades. Tony Ballantyne, for example, argued in 2002 that understanding the construction and movement of knowledge in the empire requires that we develop "a fuller appreciation of what we might call 'architecture of empire', its fundamental structures, the levels at which knowledge was created, consumed and transmitted".[18] Ballantyne's call resonates with the approaches taken, for example, by some historians of cartography, who have recently engaged with the construction, circulation and consumption of maps.[19] It also resonates with those engaged in studies that aim to uncover how different types of knowledge constituted feats of colonial governance and geopolitical thinking.[20] In general, they reflect a burgeoning interest in developing new ways to construct *knowledge* as the focus of historical research.[21]

Directing attention to the production and mobile nature of knowledge, on the one hand, and on the significance of place and material for the way knowledge was constructed and consumed, on the other hand, mark clear distinguishing elements when considered in comparison with the extant research on European mapping of the Australian continent. These studies take maps as starting points in order to examine how European conceptualizations and perceptions of the continent emerged and developed. In general, they have tended to focus on the evolving cartography of the continent, tracing how the maps tell the story

[17] Crone 1978, 115. Emphasis in original.
[18] Ballantyne 2002, 127. See also Ballantyne 2014, 190–91.
[19] Driver 2010; Edney 2011b; Prior 2012.
[20] Greer 2012; Greer 2013; Lester 2016.
[21] Sarasin 2011; Östling 2015; Burke 2016.

from "Terra Australis to Australia". These studies and carto-bibliographies often provide detailed accounts of the Dutch and French mapping of the continent up to Matthew Flinder's famous map, which depicts the continent with an unbroken coastline. This document celebrates the naming of Australia in 1814.[22]

Examinations of how the cartography of the continent developed during the nineteenth century are rare and more limited in scope.[23] One of the few more nuanced contributions is edited by Norman Etherington, entitled *Mapping Colonial Conquest*, in which Australian cartography is analyzed on its own and in comparison to South African cartographies. Herein scholars examine, for example, the speculative cartographies of the continent, the interconnections between hydrographic mapping, the needs of trade and commerce, as well as the absence of indigenous peoples from European maps of Australia.[24]

Another significant contribution to the study of British mapping of Australia is Dorothy Prescott's study of the maps of Australia by the London-based cartographer John Arrowsmith. Arrowsmith was a major 19th century British cartographer, whose work has been cited on numerous occasions, mainly by carto-bibliographers.[25] Prescott's ongoing research, which she shares freely in the form of electronic publications, focuses on Arrowsmith's major work, entitled *London Atlas of Universal Geography*. Prescott's enquiry has produced valuable information about how Arrowsmith worked with his map plates in order to produce various states of the maps of Australia in his atlas. This work provides substantial aid for those seeking to understand the development of nineteenth-century British mapping of Australia.[26] However, it does not enlighten us about where cartographers like Arrowsmith acquired information for his maps, as well as his position in relation to the British government, or about contemporary consumption of these maps. Similarly, the mapping of the continent by other major cartographers of the time has not been detailed comprehensively. The valuable contribution of the German cartographer Augustus C. Petermann, for example, who resided in London, to mapping Australian geography has been only fleetingly recorded.[27] In sum, we currently lack detailed information about the social processes that shaped nineteenth-century British and European mapping of the continent.

The nineteenth century marked the culmination in the use of knowledge that derived from direct observation in the field in European maps. This is epitomized by the geographical knowledge depicted on the maps of Australia by Arrowsmith and his contemporaries,

[22] See for example Williams and Frost 1988; Richards and O'Connor 1993; Eisler 1995; Pearson 2005; *Mapping Our World. Terra Incognita to Australia* 2013. Also see Ryan 1996, 101–27.
[23] Lines 1992; Perry and Prescott 1996; Pearson 1996; O'Connor and Birtles 2008.
[24] Etherington 2007, 2. For British utopian mapping of the continent see also Graves and Rechniewski 2012.
[25] Verner 1971a; Verner 1971b; McGechaen and Verner 1973a; McGechaen and Verner 1973b; Smits 2004.
[26] Prescott 2012d. See also Herbert 1989; Prescott 2013; Gerritsen 2012.
[27] Krug Genthe 1911. Petermann's work in Britain in mid-nineteenth-century is discussed in pieces in Krug Genthe 1911; Linke, Hoffman, and Hellen 1986; Friendly and Palsky 2007, 223–24. Krug Genthe 1911.

which drew on knowledge derived from exploration and surveying. Colonial surveying in Australia has been examined, for the most part, by focusing on either the survey systems employed in the colonies, or by tracing the work of influential individuals, such as surveyor-generals, in shaping the development of infrastructure. Almost all of this research has been conducted by surveyors interested in the history and development of the surveying practices that were adopted in the British Australian colonies.[28] Comprehensive work that discusses the interconnections and intersections between the colonies and map production is scattered. Comparative frameworks that approach and problematize the systems of surveying in Australia, as a part of the process of colonial governance and knowledge production, have only recently emerged.[29]

Extensive research has been undertaken, however, in regard to how nineteenth-century exploration of Australia by the British influenced the broader European understanding of imperial endeavors. Numerous surveyors have been studied in terms of exploration, due to the close links between these professions in terms of the exploration of the continent. Thus, they are linked to this field of study. The frameworks that have been set in place have ranged from heroic tales and biographical accounts to deep contextualization of the individuals and expeditions in question.[30] Studies focusing on how explorers interpreted and framed the space they explored—particularly Paul Carter's *The Road to Botany Bay* (1987)—have contributed to our understanding of how they made observations in the field and wrote about them. Carter's work urges scholars to consider the practices of exploration in terms of the production of space, not as processes unfolding on already fixed "stages". Carter views acts of exploring and surveying as being able to produce new meanings, which served to construct a space for the British.[31] In essence, explorers and surveyors have been examined as elemental parts of the process of "taming" the continent and as colonial scientists, who contributed to the development of scientific activities in the colonies.[32]

As part of a more general trend, recent scholarship on Australian explorers has moved away from studies devoted to "exceptional individuals". Instead, research on exploration has placed more emphasis on the "cultures of exploration" and on "reinterpreting" European exploration of the world. Indeed, scholars are currently examining the manifold contexts, motives and networks that constituted the actions of the explorers in the field. Following the turn from positivist interpretations and heroic histories to critical examinations

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[28] See, for example, Weingarth 1919; McComb 1935a; McComb 1935b; Winton 1946; Beaver 1952; Beaver 1953; Reilly 1958; McLean 1967; Williamson 1982; Williamson 1984; Foster 1985; Carter 1987; Andrews 1992, Kain and Baigent 1992; Lines 1999; Carter 2015.

[29] See for example Drown 2012, which analyzes the surveying practices in New South Wales in comparison to Van Diemens Land.

[30] For studies on explorers see for example Moorehead 1963; Cumpston 1964; Bonyhady 1991; Cameron 1995; Murgatroyd 2002; Etherington 2011; Van der Kiste 2011; Cathcart 2013; Clark and Cahir 2016.

[31] Carter 1987. See also Ryan 1996. For similar approaches in different geographical contexts see, for example Burnett 2000; Craib 2004.

[32] See, for example, Moyal 1986, 59–79; Lines 1999.

of the "cartographic", "invasive" and "imperial eyes" of the explorers and maps as expressions of power and tools of appropriation, historians have now begun to scrutinize the practices and routines of exploration, surveying and map-making in order to grasp their in-depth cultural significance. Thus, the historiography of European exploration and cartography in recent decades has emerged as an influential field of enquiry in the attempt to understand the processes of imperialism and colonialism at large.[33]

Historians have devoted considerable attention to the task of identifying how the work of an explorer was often fraught with tension that affected how knowledge was produced during an expedition. This related to the logistics of exploration, cross-cultural practices, as well as the challenges posed by the environment. It has been seen as particularly important to document the varied roles of the people the explorers interacted with during their expeditions. This trend built on the work of Henry Reynolds, who argued that the indigenous peoples of Australia played an active role in the processes of exploration and colonization.[34] This research has demonstrated—in keeping with the frameworks used to study the practices of exploration and surveys in different parts of the world during the nineteenth century—how indigenous groups and a diverse range of people, including missionaries, sealers and squatters, exerted influence in the field in Australia. The reliance of explorers on the help of indigenous peoples as intermediaries, informants and guides, as well as companions, has been extensively acknowledged.[35]

This scholarship has directed our attention to the cross-cultural character of the knowledge that explorers produced. Dane Kennedy, for example, has recently urged us to note how explorers often argued for the merely functional role of indigenous people, even though they clearly also had an epistemological significance. Acknowledging indigenous knowledge was in conflict with the ideals explorers were trained to use in order to acquire knowledge. The manner in which geographical knowledge was disseminated beyond the field was determined by the need to reconcile how knowledge was actually produced with the way in which metropolitan scientists sought to direct it.[36]

Scholarship on the significance of the knowledge produced by the different nineteenth century surveys and explorations undertaken by the British around the globe has stressed two themes in particular that are relevant for this study. First, how geographical and cartographical knowledge were powerful tools that helped to transform unknown lands into intelligible spaces.[37] Second, the knowledge that was gathered produced figurative and literal geographical and cartographical archives that enabled knowing and subsequently

[33] See, for example, Driver 2001; Driver 2004; Edney 2008a; Driver 2010; Kennedy 2014b.
[34] For Reynolds's influential publications that address the topic, see, for example, Reynolds 1981; Reynolds 1990.
[35] Cathcart 2013; Kennedy 2013; Clarke 2016; Dodd 2016; Shellam et al. 2016. Also see Carter 1987; Ryan 1996. For significant scholarship on other parts of the globe, which emphasize the significance of cross-cultural encounters for knowledge production, see, for example, Mundy 1996; Craib 2004; Raj 2007; Roberts 2009; Schaffer et al. 2009.
[36] Kennedy 2013, 194.
[37] Relevant literature urging these points includes for example Pratt 1992; Bell, Butlin, and Heffernan 1995; Edney 1997; Burnett 2000; Byrnes 2001; Mann 2003; Hornsby 2011.

mastery over the territories. This has been studied in relation to the overall European processes of knowledge production in relation to colonized territories. In 1997, for example, Matthew H. Edney took this stance in his monograph *Mapping an Empire*, which discusses the practices of the British surveys of India in the late eighteenth and early nineteenth centuries. He notes that 'archives' were important points of reference for the new knowledge that was received. The accumulation of such archives was fraught with practical difficulties. Indeed, the archives that were established were by no means perfect, even though on a rhetorical level this was not revealed. Nevertheless, they helped the British construct a panopticon that could be used to define India.[38] The idea of an all-encompassing "imperial archive" has been recently employed as an analytical tool in order to further examine how the excessive amount of knowledge was used as an "ideological force" in imagining control over knowledge and therefore over territories.[39] This idea has been employed in studies that focus on state efforts to collect information about their territories in general.[40]

Simultaneously, attention has been directed to the material archives generated by imperial endeavors and colonial governance. These interests stem from the turn away from the approach of archive-as-source to archive-as-subject. Ann Laura Stoler, for example, has argued that historians should move away from archives as "sites of knowledge retrieval to viewing them as sites of knowledge-production".[41] Stoler urges scholars to "read along the archival grain" in order to understand what colonial knowledge was all about. In her view, studies that reduce archives to simple assertions of power take for granted that the knowledge collected by the colonial states was "motivated and fueled by a reductive equation of knowledge to power and that colonial states sought more of both".[42] Many scholars of colonialism share Stoler's concerns, and have directed new attention to colonial archives. As Tony Ballantyne summarizes, scholars have begun to examine colonial archives in order to reveal "the concerns that generated them, to clarify the logics that organised them, to map their occlusions and to identify their points of silence as well as their recurrent concerns".[43]

Ballantyne himself regards archives as a significant starting point when examining the "nodes within the extensive knowledge-producing networks fashioned by empire-building".[44] The examination of colonial archives as nodes and artifacts of colonialism historicizes their content and draws critical new attention to the fact that the very sources that are used to access the past in colonial terms were produced by Europeans. Moreover, these

[38] Edney 1997. Compare also to Richards 1993. Thomas Richard's study *The Imperial Archive* has been influential in shaping scholarly thinking about the collecting of information in the British Empire as an imperial fantasy.
[39] Greer 2013, 1320.
[40] See, for example, Hevia 1998; Edney 2003; Craib 2010; Hevia 2012; Bleichmar 2012; Greer 2013; Bleichmar 2015.
[41] Stoler 2002, 87. See also Stoler 2009; Stoler 2010.
[42] Stoler 2002, 95, 100–101.
[43] Ballantyne 2014, 180–81.
[44] Ballantyne 2014, 180.

sources are often imperfect and only offer a very partial view of the past. In Ballantyne's view, it is therefore better to examine archives as a part of the knowledge producing web. This network rests upon material produced by different government departments, learned societies, missionary organizations, privately libraries and so on. Thus, it is possible to appreciate the "double function of the archive", as centripetal and centrifugal forces that both collect and distribute material about particular subjects.[45] In sum, archives can be used to uncover practices of knowledge work and consequently they can be used to examine what was done with different types of knowledge. This serves as an additional means of revealing what imperial states and learned societies collected. Furthermore, they can be studied, as Ballantyne's work on New Zealand's colonial history indicates, in connection with and as a new starting point in the examination of the transnational and networked history of the British Empire.

In the context of this study, I apply these perspectives regarding colonial archives to open up new approaches to the exploration and surveying of Australia as a knowledge-producing enterprise. The exploration and surveying of the continent led to the accumulation of multiple different archives, which can be used to study the previously ignored processes of knowledge-work and networks of knowledge shaping, as well as the formation of geographical and cartographical knowledge about the continent. Particularly significant archives in this regard were accumulated by government departments in the colonies and in Britain.

The position taken by Stoler and Ballantyne are part of a wider field of scholarship that have taken the relationship between imperialism and different kinds of colonial knowledge as their primary focus of research. These studies have been a great inspiration for this research. From Christopher Bayly's seminal work to the intensified theoretical discussions debating the roles of different types of 'knowledge-brokers' recent scholarship is mesmerized with the question of colonial knowledges in forging difference and constituting the exercise of authority and order over groups of people and tracts of land.[46] The scholarship is wide-ranging and an essential part of it during the recent years have been efforts to examine the routines that constituted the generation of the different kinds of colonial knowledge and its application in practice. Put together, the studies inform us of the state constituted processes that produced the object they related to: a governed territory, a distinguishable group of people or such large entities as the British Empire, and consequently informed the practices of exercising power.

As noted earlier, the nineteenth century was a time of growing state bureaucracy, which included the collection of measured geographical and other data. Communication networks established by states were crucial in securing the accumulation of information in metropolises. In the British Empire, communication between government departments in

[45] Ballantyne 2014, 190.
[46] See Bayly 1996. Also see, for example, Hevia 1998, Raj 2007; Hevia 2012; Greer 2013; Lester 2016.

Britain and overseas colonies occurred via official correspondence. This channel of communication was established during the 1830s as the primary way of transmitting information. Zoë Laidlaw has noted that changes in the practices of emerging bureaucratic states, in terms of the collection of information and the employment of personal connections, were slow to take effect and did not occur as singular events.[47] Nevertheless, they did have a significant effect on the way the British Empire was construed and imagined. Laidlaw notes how the "information revolution, by categorizing and mapping the British colonies, allowed metropolitan officials and politicians [...] to see that there was an empire, not merely and awkward and diverse collection of colonies".[48]

Laidlaw's interest in the evolving information order at the Colonial Office, Stoler's attention to the "shuffling of papers", as well as Ballantyne's interest in examining the development of imperial archives, offer important starting points in the examination of official correspondence. This correspondence was one of the primary means to gradually accumulate geographical and cartographical knowledge from the Australian colonies at the Colonial Office in London. Official correspondence and practices of circulating geographical knowledge beyond government offices formed a system of knowledge that had an important impact on the ways in which knowledge about Australian geography circulated in different locations. The meaning of the geographical and cartographical knowledge that circulated in the system and how it was handled has not received much attention. This is despite the identification and analysis of the interests and participation of the imperial government in the planning and execution of some of the Australian expeditions.[49]

Much more attention has been directed to the work of different scientific institutions working in Britain and in Europe during the nineteenth century, in terms of exploration of the world. The foundation of these establishments formed part of the process of professionalization of science and the separation of the different fields of study during the first half of the nineteenth century. It has been noted that they played a central in role in verifying the information that arrived from colonies.[50] These scientific societies were active proponents of exploration, although they had a diverse range of interests. However, a critical factor for all of these institutions was the urge to accumulate extensive collections of data and specimens relative to their respective fields of study.[51] The RGS was a particularly significant archive and formed an integral part of the network of geographical knowledge in the British Empire. The RGS was established in 1830 in order to promote geographical research and exploration around the globe. The RGS has been identified as a particularly central actor in the field of exploration, as it funded and instructed expeditions, as well as actively publishing the subsequent results. In sum, the work of these societies has been noted

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[47] Laidlaw 2005. See also Eddy 1969.
[48] Laidlaw 2005, 204.
[49] See, for example, Cameron 1995; Etherington 2011; Kennedy 2013, 100–101.
[50] Livingstone 1992, 156–57; Withers 2001, 91.
[51] Kennedy 2013, 36–37.

as playing a pivotal role in putting the information received from British explorations in different parts of the globe into perspective and validating it.[52]

Much of this research, which examines how the results of the explorations in different parts of the world were analyzed and discussed in the metropolis, has payed increasing attention to the processes of publishing. The publication of the results was a pivotal part of the process of exploration. As Felix Driver argues, these narratives, which appeared as travel accounts, reports and newspaper and journal articles, were essential as "from the point of view of metropolitan science and culture, exploration without writing and publication was no exploration at all".[53]

Analysis of how the content of travel accounts was shaped through the publication process has received an increasing amount of attention. The work of publishing houses in printing travel accounts, in particular, has been examined as a process that shaped the content of the original journals, sketches and maps that were compiled in the field. These studies have identified the mutable nature of the material produced by explorers by tracing the process, or portions of it, that led to the creation of published travel accounts. Scholars have traced the scribbles and sketches carried out in the field through to the editing process, engraving, and finally the publication of texts in Europe. These studies have revealed how mundane practices and processes, editorial preferences, economic questions and the intended audience shaped the end product. Consequently, they also influenced the structure of the knowledge that was communicated by the travel accounts.[54] This research relates to a burgeoning field of study relating to Victorian print culture and how the different, often heavily intertextual forms, participated in the process of exploration.[55]

What has been largely ignored, however, is the communication that occurred prior to the publication of travel accounts, especially in terms of their origin. Many scholars have fleetingly referred to these processes, noting, for example, how the explorers made public appearances after their arrival in Britain, as well as attending meetings of the RGS (where they also offered or were asked to write articles for publication in the society's journal). It has also been noted how the reports submitted to the government departments were also part of print culture. Yet, not many comprehensive references exist regarding the flow of information that arrived in London prior the arrival of explorers.[56] These communications played a pivotal role in the Australian context, as it was rare that the explorers came to

[52] For scholarship examining the participation of the different institutions in Britain to the processes of exploration see, for example, Driver 2001; Dritsas 2011; Kennedy 2013, 25–61; Withers 2013.
[53] Driver 2013, 167.
[54] For scholarship examining the work of influential publishing houses (like John Murray) in Britain during the century and for examinations of the shaping of the travel accounts and their illustrations as a result of the publishing processes see for example MacLaren 1992; MacLaren 2003; Koivunen 2009; Withers and Keighren 2011; Keighren, Withers, and Bell 2015.
[55] Cavell 2008; Driver 2013; Pettit 2014. Also see Henderson 2015.
[56] For example Koivunen 2009, 105–106; Kennedy 2013, 246; Driver 2013, 166.

London after completing their expeditions. Indeed, many resided and worked on a permanent basis in the colonies. Some, like Thomas Mitchell, Edward Eyre and Charles Sturt, did eventually return to Britain. Furthermore, many initially published their journals in the Australian colonies, rather than in Britain.[57] Some, however, chose not to do so at all [58] No thorough examination of the manner in which the accounts that were eventually published in London (mainly by T. & W. Boone) has been undertaken. Furthermore, no analysis has been made of the circuits of the numerous letters and dispatches that the explorers sent to the settlements from the field. As Kennedy notes, these were published verbatim by the colonial press.[59] We therefore lack detailed analysis of the processes which shaped how the data that resulted from the Australian explorations became public. These communications, however, are extremely important when considering the processes that contributed to the formation of geographical knowledge of the Australian continent. They played a pivotal role in the larger process of mediating new information about the world.

The issue of how information relating to the numerous expeditions in Australia become available in Britain is closely related to the analysis of how different institutions, such as the RGS, obtained important parts of the material it eventually published in its journals or read at its evening meetings. The society developed a wide network of correspondents and many explorers corresponded with it. Many explorers corresponded with the society, but so did some of their colonial patrons. However, an extensive amount of this information derived from the Colonial Office, in particular, but also the Foreign Office and the Admiralty. Studies have noted that the RGS fostered close relations with departments of state in Britain and that many officials were members of the society. Yet, this relationship has not been systematically analyzed from the perspective of the civil servants.[60] The role of civil servants was important for the maintenance and character of these communications and, indeed, for the development of the RGS archives related to geographical knowledge. Hence, it is important to examine the roles of civil servants as knowledge-workers in the context of geographical knowledge and map-making.

Consequently, it is noticeable that in spite of the publication of numerous books and articles relating to the mapping, exploring and surveying of the Australian continent, we lack accurate information about the networks of communication that constituted the mobility of geographical and cartographical knowledge relating to Australia in the British Empire. In this study, I set out to examine how the official correspondence, which nominally occurred between the governors of the colonies and the secretaries of state in Britain,

[57] These included William Hovell and Hamilton Hume, whose account was published in Sydney in 1824 and an account on E. B. Kennedy's fatal expedition in 1849. Many later accounts were printed by the colonial governments in Australia as official publications. These included papers on the Victorian Exploring Expedition and William Landsborough's account. See Carron 1849; Kennedy 2013, 254–255.

[58] For example Augustus C. Gregory and John S. Roe did not publish the results of their expeditions as separate travel accounts.

[59] Kennedy 2013, 254–55. See, however, Foster's examination on Thomas Mitchell's efforst to publish his travel accounts in the late 1830s and 1840s. See Foster 1985, 302–25, 411–22.

[60] See, for example, Cameron 1995; Driver 2001, 24–48.

formed an indispensable, yet hitherto neglected, part of the process of circulating geographical and cartographical knowledge. Consequently, it constituted the making of British geographies of Australia. I employ a processual approach in this study in order to verify this argument, which is built upon the idea of co-constitutive imperial archives and the reciprocal movement of geographical and cartographical knowledge. I will next outline the different theoretical components that inform my study; namely, the idea of circulation as knowledge-making and of processual map history.

Circulation, Processual Map History and Knowledge-Making

Circuits of knowledge, the different materials that carry this knowledge and the effects engendered by the movements of these different materials from one place to another and from individual to individual have recently become the subject of burgeoning research within the fields of history of knowledge and history of cartography. These approaches build on research and theoretical discussions within the fields of history of science and book history, in particular, but they aim to develop and adapt these frameworks to their respective subjects of study. The central discussions that they build on are Bruno Latour's idea of centers of calculation and the notion of immutable mobiles, as well as the theories of communication circuits and the life-cycles of books put forward by book historians such as Richard Darnton.[61]

History of knowledge is a new and emerging field of study that puts *knowledge* at the center of the historical enquiries.[62] It analyzes how different actors produce and transmit knowledge. It is closely intertwined with the history of science, which focuses on science and scientific knowledge in different spatiotemporal contexts. However, its scope of study is wider and thus it encompasses the history of science alongside other practices of knowing. This development stems from the need to find tools to connect the many localized histories of scientific practice to other scales of knowledge about the world, without reenforcing the position of Western science as the powerful mode of knowing in the modern world.[63] It connects with the need to build frameworks to study how different systems of knowledge interact and what happens as a result of such interactions. Starting from the diffusive frameworks that developed in the 1960s, scholars have aimed at building more

[61] Some of the most central works that inform these discussions are Latour's *Science in Action* (1987), and Richard Darnton's article "What is the History of Books?" (1982). See Darnton 1982; Latour 1987. For discussion on the study of the history of books, see also Adams and Barker 1993; Darnton 2007.
[62] Östling 2015, 117.
[63] Secord 2004, 655; Renn 2015, 38.

dynamic frameworks that rest upon the ideas of multidirectional movements and co-constitutive sites of knowledge-work.[64]

Circulation has emerged as a widely used way to escape the problematic dichotomies inherent when referring to the "spread", "dissemination" or "diffusion" of knowledge about the world that assume a center and the unproblematic transmittance of knowledge to different audiences. As Raymond B. Craib summarizes, diffusion should not be employed to study the creation of scientific knowledge as it is historically inaccurate and "a discourse linked to colonial rule".[65] Consequently, circulation theory attempts to analyze the role of locally-produced knowledge by examining the different scales in which knowledge circulates, without assuming a producer and an end user.[66]

According to Kapil Raj the concept of circulation requires further theorization, despite being extensively used by scholars since the 2000s, especially in the wake of James Secord's seminal article "Knowledge in Transit."[67] Raj argues that it is necessary for the theory to go beyond the mere notion of the mobile nature of knowledge.[68] Similar calls have been recently made in order clarify the concept and to save it from becoming tedious and meaningless.[69]

Johan Östling and David Larsson Heidenblad have sought to enlarge our understanding of circulation, for example, in order to demonstrate its usefulness for empirical studies. They have urged a shift in attention from the production of knowledge to its use, movements and reformulations. Consequently, they advocate that "knowledge circulation" can be used as an analytical tool in order to examine how knowledge is shaped as it circulates in society. In this they closely follow and seek to develop the viewpoints expressed by the Swiss scholars Philip Sarasin and Andreas Kilchner, who are active proponents of the history of knowledge (*Wissensgeschichte)*. These scholars emphasize how knowledge is always transformed as it moves and becomes embedded in different carriers.[70] The idea of the transformative nature of circulation is not new. Claude Markovits, Claude Pouchepadass and Sanjay Subrahmanyam for example, have suggested that circulation is a "value-laden term which implies an incremental aspect". In other words, as things move they are

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[64] For one of the most influential and later contested diffusive frameworks see George Basalla's article published in 1967. See Basalla 1967. For informative overviews of the historiography of the history of science in the context of the British Empire see Hodge 2011; Bennet 2011.
[65] Craib 2009, 483.
[66] Raj 2013, 344. Also see Raj 2007, 225.
[67] Secord 2004.
[68] See, for example, Raj 2013.
[69] Östling and Larsson Heidenblad 2017; Sarasin and Kilchner 2011, 8.
[70] Larsson Heidenblad 2015; Östling and Larsson Heidenblad 2017. Larsson Heidenblad and Östling build their conceptualizations on the research by Swiss scholars Philipp Sarasin and Andreas Kilchner. See Sarasin and Kilchner 2011; Sarasin 2011.

not simply reproduced, as something is added. Further, in their view the "totality of circulations" can be used to describe a "circulatory regime" that is spatiotemporally contingent.[71]

What is this added something? In my view it is simultaneously easy and difficult to uncover by engaging with the different ways knowledge is materialized. An examination of the different material forms in which knowledge is communicated enables one to uncover the "bridging practices", as James Secord characterizes them that constituted the emergence of different types of knowledge in public. These practices also condition, for example, how knowledge circulated as a result of visits to museum exhibitions.[72] Jürgen Renn notes that materiality enables the sharing of knowledge—in the form of maps and travel journals for example—and it also allows an individual to appropriate shared knowledge.[73] Materiality is also the key to understanding instances when knowledge does not circulate. As Raj notes, circulation should not be taken as "a blindly optimistic vision of books, ideas, practices, people, and material flowing smoothly between different cultures, communities, and geographical spaces". Circulation of a particular piece of knowledge, or, for example, a book, is not all-encompassing. It occurs within particular spaces that are spatiotemporally contingent.[74] These spaces might be defined by the systems of forming knowledge that rely on social and material practices and the power-relations between different actors at a particular time and place.

Consequently, circulation does not and should not entail the assumption of 'smooth circuits'. Instead, I argue that circulation necessitates that researchers plunge into the practices that enabled or prohibited the movements of different materials, ideas and people in order to understand how knowledge was formed as a circulatory process. This requires being alert to the fact, as Fa-ti Fan stresses when he critiques the use of the concept of circulation, that some movements were open ended and some stalled. As Fan argues:

> Therefore, what is called "circulation" may have been really a series of negotiations, pushes and pulls, struggles, and stops and starts. The image of circulation tends to impose too much unity, uniformity, and directionality on what was complex, multi-directional, and messy. It also tends to substitute a general metaphor for a careful examination of what actually happened. There are risks in accepting the metaphor too readily. For instance, the image of smooth circulation probably doesn't encourage a critical analysis of, say, power relations in science.[75]

I agree with the notion that analysis of "knowledge circulation" and its consequences requires sensitivity to context. Furthermore, it is necessary to constantly question our assumptions about what happened when a particular travel account or a map, for example,

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[71] Markovits, Pouchepadass, and Subrahmanyam 2006, 3. Also see the views of Kapil Raj, who builds his conceptualization of circulation on this view. See Raj 2013, 343; Raj 2017.
[72] Secord 2004, 667.
[73] Renn 2015, 40.
[74] Raj 2013, 344–45. For the critical viewpoints Raj is answering to see Fan 2012.
[75] Fan 2012, 252.

was written and published. I understand that circulation, in particular, offers a neat tool to uncover these processes, if we acknowledge, as Fan notes, that what often took place was "multi-directional and messy". In my view, tracing these processes creates an opportunity to uncover how local knowledge moves between different scales and consequently became something more than merely local. I think it is useful to understand circulation, as Fan suggests, "as a series of translations".[76]

Hence, examining the circulation of different types of material and people can be useful when seeking to empirically trace how pieces of local knowledge become embedded in wider and more general corpuses of knowledge that were established through portions of the "totality of circulations" referred to by Markovits, Pouchepadass and Subrahmanyam.[77] This approach underlines the rationale behind examining circulation in terms of seeking to understand how mobility shapes knowledge and what emerges as a result of this mobility, rather than in simply following its movements or assuming its circular character This is a difficult task, but as Secord notes, "writing a history of knowledge as circulating practices is not easy but at least it is possible to see how it might be done"[78]

Directing attention to circulation practices brings to the fore the variety of actors involved in the process. Recent research on exploration, as already noted, has extensively analyzed the role of the different groups of people explorers and surveyors encountered in the field. In general, their roles have been theorized in terms of mediation, that is, as knowledge brokers.[79] Charles Withers, Innes Keighren and Felix Driver have recently considered the term in relation to the other stages of the knowledge-production process. In their view it can be applied in the context of the editing processes that occurred when the materials of the explorers were transformed into published travel accounts.[80]

It is useful to apply the concept of knowledge brokers in this study too. In terms of analyzing knowledge circulation as a process that constituted the formation of geographical knowledge of Australia, it is crucial to identify what kind of knowledge brokers civil servants, cartographers and the RGS were in the series of translations that constituted circulation. As the sociologist Morgan Meyer summarizes, knowledge brokers enable the "creation, sharing and use of knowledge".[81] Brokering constitutes the transformation of knowledge that takes place: the localization, rescaling and distribution of knowledge that is spatio-temporally contingent. Different actors have a variety of brokering roles: they might be theorized as knowledge managers, as links between the producers and users of knowledge, or as brokers who are able to enhance access to knowledge.[82] Consequently,

[76] Fan 2012, 253.
[77] Markovits, Pouchepadass, and Subrahmanyam 2006, 3.
[78] Secord 2004, 667.
[79] For example Schaffer et al. 2009.
[80] Withers and Keighren 2011, 569; Driver 2013, 166.
[81] Meyer 2010, 119.
[82] Meyer 2010, 121. The three-fold characterization is by Oldham & McLean, 1997, cited in Meyer 2010.

brokering offers an important analytical tool that can be used to further develop the way circulation as a process can be understood.

Consequently, I am of the opinion that circulation is a good starting point to investigate the process of how knowledge was established. In this thesis, I adopt and develop the concept of circulation, as it is understood in the history of knowledge. I do this by examining what actually circulated and why in the Australian context and by examining how geographical knowledge and maps were shaped as they passed from one actor to another. I also investigate the reasons for the alterations that occurred.

My approach is intertwined with recent scholarship in the history of cartography. It chimes with the plea to move away from an analysis of the content of maps towards studying maps as processes as, for example, Matthew Edney has called for.[83] Indeed, processual map history has shown itself to be a prolific starting point in attempting to uncover what lies beyond maps that are often characterized as "imperial maps"; those that are frequently argued to have extensively shaped our comprehension of the world. If one considers the administration of the empire, for example, circulation emerges as a fruitful starting point to understanding what kind of material and practices of knowledge-work were adopted by administrators in order to know their territories. Ultimately, it offers a useful means to revisit the commonplace notions about geography and cartography as 'tools' for imperialism. By following the circulation of maps, for example, it is possible to identify how these different forms of knowledge—'tools'—emerged and worked in practice.

Approaches such as these have been recently articulated by scholars, such as Matthew Edney, Felix Driver and Amy Prior, in order to break down the myth of "the imperial map".[84] Edney, for example, emphasizes that "there is nothing about a map per se that makes it an 'imperial map'", as all maps are subjective, spatiotemporally contingent representations of the world.[85] Consequently, to understand how maps worked, and how they enabled naming and placing and thus contributed to human understanding of spaces in colonial and imperial contexts, it is necessary to direct attention to the processes through which they were produced, circulated, used, reused and transformed. Understanding maps as selected and constructed images of the world requires not only examining "the actors, interests, and belief systems involved in mapping" as stressed by Jordan Branch,[86] but also the material conditions, concerns, and routines that affected map production at a particular time and at a particular site and thus in forging particular representations.[87] To understand the roles of particular maps in shaping conceptualizations of the British Empire requires examining

[83] This plea is very explicitly made in for example Edney 2014.
[84] Edney 2008a; Driver 2010; Prior 2012.
[85] Edney 2008a.
[86] Branch 2014, 39.
[87] For cartographic routines see Craib 2009; Craib 2012. Craib sees cartographic routines as an important analytical tool to examine how a cartographic representation for the Mexican state was forged.

their trajectories and movements and examining maps as part of "the discourses in which they were produced and consumed", as Edney puts it.[88]

My thesis situates and advances these "processual" approaches to maps and cartography, wherein an emphasis is placed on studying maps in their wider contexts, in the midst of other material, in order to understand how different actors understood and used them. These perspectives have been conditioned by research in the history of cartography in the 2000s, which is informed by perspectives of book history and the history of science. This recent research has sought to expand on the ideas of the critical cartography of John B. Harley, which were expounded in the 1980s and came to prominence during the 1990s.[89] Harley advanced the idea of maps as value-laden objects that can be read as powerful statements about the world. Thus, he broke away from the empiricist and positivist paradigm that understood maps as objective representations that can be evaluated through their constantly improving ability to accurately mirror and represent the world.[90]

In critiquing the approach promoted by Harley and his proponents, current scholarship in the history of cartography seeks to break away from the idea of simply "deconstructing" the map in order to reveal the "reality" behind it. This entails theorizing maps in post-representational terms: as inscriptions that shape our conceptualizations of the world,[91] and as artifacts in the constant state of becoming and thus participating in the production of the world.[92]

These new ways of conceptualizing maps have significant implications for the study of the history of cartography. Rather than basing their research on an analysis of the content of the maps, scholars now attempt to understand the production, consumption and use of these documents in a manner very similar to the aims of historians of knowledge. This has led to an overall redirection of the work in the field. Scholars have argued for the need to examine historically and geographically contingent cartographic processes. For example Matthew Edney has argued for the need to examine the history of cartography through "cartographic modes", which in his view determine cartographic practice and production.[93] Raymond B. Craib approaches these processes through the concept of "routines" to direct attention to the complexities that mapping projects involved.[94]

In practice this redirection has entailed the need to broaden the scope of research beyond maps and their nominal makers to the different individuals and institutions who contributed to their existence, movements and consumption by readers. Engaging with these

[88] Edney 2011a, 304.
[89] Harley 1988; Harley 1989; Harley 1992.
[90] Harley 1989, 83.
[91] For this point, see, for example, Pickles 2004.
[92] See, for example, Del Casino and Hanna 2005; Kitchin and Dodge 2007; Kitchin 2010; Wood and Fels 2008.
[93] See Edney 1993. Since publishing his now classic article "Cartography without Progress" in 1993 Edney has continued to develop the idea of cartographic modes in his extensive later work.
[94] Craib 2004, 1–17; Craib 2009, 482.

processes enables a historian to identify moments when maps, for example, were contested tools rather than a means of exercising power.[95] Simultaneously, they help challenge the idea of maps as "repositories of geographical knowledge" that exemplify imperial authority in an unproblematic manner [96] Thus, maps emerge as unfixed objects that are in a constant state of becoming, as they can be reproduced and remade in different contexts by transforming their content and through the simple act of reading.[97]

Map production was not only a temporal, but also a spatially-specific phenomenon that has a "geography". This understanding is inherent in the approaches that examine how different institutions composed their cartographies, due to varying context-specific interests. Maps and geographical knowledge cannot be assumed to have a uniform significance throughout the colonies in the British Empire. This is also the case in regards to their consumers. Amy Prior and J. M. Drown have highlighted, for example, the fact that the individuals who prepared maps were able to shape the content according to the assumed expectations of their prospective consumers.[98] These notions demonstrate how important it is to question what we think we know about the character of maps that were in circulation during the nineteenth century and about their production process and consumption. Maps were not simply straightforward documents that recorded the rationalization of space. Instead, they can be viewed as a contingent and fluid material that participates in the process of conceptualizing different phenomenon.

Furthermore, the innovative approaches that have developed to study maps within a wider context have significant implications for the way we understand the formation of spatial knowledge of the world. Instead of manifesting spatial relations in a stable form, maps emerge as context-dependent records of human perceptions of the world that are shaped by different intentions and material conditions. Studying maps by examining the different contexts in which they were used enables historians to form an understanding of the way other material, besides maps, contributed to the process of spatialization. As plead by Edney, the analysis of maps in conjunction with texts is essential in order to demonstrate how these documents currently have an "unfounded and entirely unwarranted privilege as the means to represent spatial relations".[99] The knowledge that is communicated through maps should not be mistaken for conceptions or knowledge of space or territory. This point is stressed by, for example, Doreen Massey. Massey emphasizes that we should ensure that we do not carelessly equate maps with space, for example, as this erroneously reduces

[95] Ferretti 2015.
[96] Prior 2012, 207.
[97] See, for example, Pickles 2004; Della Dora 2009; Kitchin, Gleeson and Dodge 2013.
[98] Prior 2012; Drown 2012.
[99] Edney 2011b, 338.

space to a flat surface.[100] Similar points have been recently brought to the fore in terms of questions of sovereignty and the visibility of indigenous knowledge on European maps.[101]

These approaches to processual map history include aspects that are informative when studying the formation of geographical knowledge of the Australian continent. In particular, they help build a theoretical and methodological framework that does not seek to uncover how the geographies and maps that were constructed were essentially "white lies", that is, subjective representations of the world that were produced with particular methods. Instead, the focus is on how the maps that were produced came to constitute the realities in which the different individuals acted.[102] This is a difficult task that requires diving into the straightforward model regarding the movements of cartographic materials from the Australian colonies to Britain and therein. Combined with the circulatory framework put forward by historians of knowledge, the construction of maps and their consequent movements will in this study be analyzed as part of different situations and contexts that constituted how geographical knowledge circulated.

The combination of circulation theory, as understood by historians of knowledge and science, with the framework adopted in the history of cartography has implications for the way we understand the relationship between circulation and consumption. Historians of knowledge and science define circulation as transformative. Hence, it cannot be equated with the way map historians refer to circulation: they situate it as one part of the process of production, circulation and consumption of maps.[103] Some definitions are therefore in order. In this study, I use circulation theory in the sense of how it is articulated by historians of knowledge. In other words, I understand it as "something added". I refer to the thinking of Michel de Certeau in order to clarify my stance, as his work has engaged in the study of the practices of everyday life in a very similar manner as has been proposed by some historians of knowledge. De Certeau emphasizes that the process of 'consumption' contains "another production": the users 'make' something from the material they consume.[104]

This connects with the idea of the 'unfixity' of maps discussed above: maps are in a constant state of becoming and their meanings are produced as they are consumed. It also connects with the understanding propounded by historians of knowledge, whereby circulation implies transformation. When combined they help to define circulation as a concept that includes the idea of consumption as a form of new production as knowledge moves from one geographical or temporal setting and one actor to another. I would argue that circulation is intertwined with consumption: as knowledge about a particular phenomenon

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[100] Massey 2005, 145.

[101] Massey 2005. For a recent study that raises the issue of the complex relationship between territorial sovereignty, the practice of law and cartography, see Benton 2010. For a study detailing how other documents, besides maps, functioned as "repositories of spatial knowledge", see Safier 2009. Safier's approach establishes a fuller understanding of how the Portuguese sough to incorporate the indigenous peoples into their system of knowing through other channels besides maps.

[102] Compare with the idea of lying with maps put forward by Monmonier in a Harleyian vein. See Monmonier 1996.

[103] See for example how Edney and Prior employ the term. See Edney 2007; Edney 2011b; Prior 2012.

[104] See de Certeau 1984, 31.

is circulated it is always consumed in some way. The human propensity for ignoring and forgetting things is also here understood as a form of consumption. Consequently, it is subject to the production of new meanings. This framework is sensitive to situations when knowledge and embedded material do not circulate, as it directs attention to the practices and adaptations that emerge as a response to these situations.

Lastly, it should be noted that adopting circulation as a tool to analyze the formation of knowledge and the preparation of maps has implications that affect the way networks are understood in this study. As already noted, when detailing the approaches taken by Tony Ballantyne, scholarship on the British Empire in the nineteenth century has analyzed the processes of communication through multidirectional networks and circuits of knowledge. This approach connects individuals and institutions, governmental actors and indigenous peoples. The utilization of networks and webs as analytical tools is a marked effort to put the colonies and the metropolis within the same framework and to break away from the center-periphery model that has been dominant since the late 1990s.[105]

Circulation and the agenda of processual map history fit well into the new spatial frameworks. Networks emerge as sites of transformation and translation that shaped knowledge of the world. The communication that occurred between different officials and individuals within these networks required a medium that facilitated the transfer of the knowledge in question. The identification of the transformations that occurred when the knowledge that had been communicated was analyzed in different locations in Australia and in Britain makes visible the multiplicity of knowledge-work sites. It also demonstrates how they related to and co-constituted each other. Even though particular "favoured nodes for specific epistemic pursuits" can be identified at certain periods of time, circulation highlights that these were not fixed.[106] This point is important as it reminds us to be sensitive to the entanglements and intersections of the different "archives" that constituted the web of knowledge within the British Empire. Applying these innovative approaches in an Australian context highlight that much remains to be explored and investigated when seeking to understand how the British geographies of Australia were made. This is especially the case when one considers what we currently know of the networks of geographical and cartographical knowledge and what happened to this knowledge as it circulated from one context to another in the British Empire.

Questions and the Scope of Research

This study is concerned with the mechanisms used to circulate geographical and cartographical knowledge of Australia as it was explored and surveyed by the British. It aims to

[105] For prominent studies promoting this view see for example Laidlaw 2005; Lester 2006; Lambert and Lester 2006; Bennett and Hodge 2011; Ballantyne 2014. For earlier characterizations of the British Empire as more than fixed centers and peripheries see especially MacLeod 1982.
[106] Raposo et al. 2014, 182.

examine how the enormous amount of information resulting from the exploring and surveying expeditions was managed by different actors and to answer the following questions: how did actors such as governors in the colonies and civil servants, cartographers and the RGS gain access to this data and how did they consume it? Answering such questions requires investigating how and in what form geographical and cartographical knowledge became available to different actors and it necessitates an examination of who participated in its circulation, analysis, and, consequently, in establishing conceptualizations of the continent. In so doing, in this study I aim to investigate how and why particular geographies of the continent became available in in the Australian colonies and in Britain.

The circulation of knowledge has no clearly distinguishable temporal or geographical boundaries. Nevertheless, some limitations are set in place. In general, a countless number of actors formed part of the process of producing geographical and cartographical knowledge and helped to conceptualize the continent. As Anne M. Scott notes, when individuals perceive things they also assess what they are perceiving. Consequently, different individuals—explorers in the field, settlers in the colonies and cartographers in Britain—formed their own views of the continent. Indeed, their consumption of the explorers' accounts and the different maps informed their perceptions of the continent in a particular manner.[107]

I focus on the actors who were tightly connected to the systematic circulation of geographical and cartographical knowledge from the Australian colonies to Britain. The reasoning behind this decision relates to the need to limit the scope what constitutes an extremely complex and extensive process. This means examining the work of the actors who were responsible for the administration of the colonies and the material that they circulated to different actors. By specifically choosing officials as a central starting point to approach the phenomenon, I aim to extend our knowledge of the systematic practices of knowledge-work that shaped mid-nineteenth-century understandings of the Australian continent and to a large extent constituted the process of mapping in London.

The different practices adopted and the individuals involved in the analysis and publicizing of geographical knowledge stemmed from the government officials. Focusing on the channels of communication used by the civil servants in London in order to distribute the material containing geographical information consists, to a large extent, on examining Parliamentary Papers, as well as documents related to the RGS and the cartographer John Arrowsmith. On the one hand, documents related to the RGS and the Parliamentary Papers rank as the principal sources of evidence in my work, with the written material that arrived from the colonies. On the other hand, Arrowsmith and his maps are examined as synthesizers and producers of geographical knowledge.

Consequently, the scope of this research is defined by the knowledge-work and different forms of knowledge brokering that were conducted as a result of communications with the Colonial Office. As I focus my research in this manner, I omit numerous circuits of

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[107] Scott 2011, 1–2.

knowledge that occurred, as narratives of exploration were printed by numerous British and European periodicals and scientific publications. I also do not address how knowledge was synthesized in geography books or how it was reported by the British press.

In geographical terms, the scope of research is determined by the Australian continent and Great Britain. Thus, I examine the production of geographical and cartographical information that circulated in the colonies and in Britain that emanated from the continental colonies of New South Wales, Western Australia, South Australia, Victoria and Queensland. I focus on these specific colonies in order to be able to concentrate on the entire continental landmass. In so doing, I seek to facilitate a discussion on how the continent was mapped and conceptualized. My interest, however, is not in the multiplicity of environmental theories that were written down in letters or the content of the maps per se, but mainly in the practices and contexts that shaped the availability, consumption and the analysis of the different material that participated in these processes.

This study focuses on the period stretching from the late 1820s to the early 1860s. This era is defined by numerous simultaneous developments. First, it covers territorial expansion from the establishment of the Swan River colony in 1829. This period saw the annexation of the whole continent to the British, as well the decision to annex the present-day Northern Territory to South Australia as a result of the pressing need to organize governance in the area. By the beginning of the 1860s, almost all of the Australian colonies had been granted self-governance. This shifted the management of domestic affairs from London to the colonies.

Secondly, the period coincides with the most intensive phase in the exploration of the continent. Prior to the 1830s, exploration of Australia was limited. Only in the 1840s did exploration of the interior increase. Attempts at traversing the continent reached a peak in the early 1860s. Thereafter one can note a shift in the conceptualization of the interior of the continent.

Thirdly, the period between the late 1820s and the early 1860s coincides with the most intensive period of John Arrowsmith's collaborative work with the Colonial Office. Similarly, the RGS was established in 1830 and quickly became an agent, in collaboration with government departments, in promoting British explorations in different parts of the world. Lastly, from an administrative point of view, the mid-nineteenth century was a period that saw a marked overhaul of bureaucratic organizations related to the Empire. Substantial changes in the methods of record-keeping and administrative practices occurred at the Colonial Department in the 1830s. By 1855, an increasing volume of information began to be systematically collected from the colonies in order to be utilized by the newly established Topographical Depot at the War Office, among other government departments.

Material, Methods and Concepts

Material

I use a wide array of manuscript and printed primary material in order to examine how geographical and cartographical knowledge of Australia circulated within the imperial web and how it was transformed in different locations. In practice, this means examining how different actors used material to prepare printed and published government publications, maps, as well as journal and newspaper articles. My investigation into these questions is largely motivated by the clues and hints visible in the original correspondence records between the Colonial Office and the governors'offices.

This material, which is preserved at the National Archives in Great Britain and state archives in Australia, forms the most important and the largest set of source material used in this study. The correspondence accumulated by the Colonial Office consists of dispatches from the government houses in the Australian colonies, as well as communications from government departments in London, individuals and scientific organizations that had links to the colonies.

The correspondence abounds in geographical and cartographical knowledge that derives from the surveys and explorations performed in different parts of the continent. The governors, whose dispatches typically arrived at the Colonial Office in bagged bundles, reported about the developments that had taken place and often enclosed different types of material relating to the expeditions and surveys. These included printed and manuscript texts, such as statistics, government gazettes, newspaper articles, minutes of the legislative and executive councils, letters and books, as well as maps, plans, tracings, sketches and specimens. Different individuals and scientific organizations—explorers, surveyors and the RGS in particular—were in regular contact with the Colonial Office staff with suggestions for new expeditions or with enquiries for information and material about the developments that had taken place.

The dispatches were nominally correspondence between the secretary of state and the governor of a colony. In practice, however, these documents constituted communications that occurred between the permanent staff at the Colonial Office and government officials in the colonies. The dispatches and their enclosures, which addressed topical issues in the governance of the colony, were initially examined by the senior clerk at the Colonial Office, before being forwarded to his superiors and finally to the secretary of state. Consequently, the documents accumulated and minutes documented how the information contained within the dispatch was dealt with: it could be "put by", or sometimes it required immediate action from a specific expert within the department. The civil servants usually initialed and dated any comments they made and passed them on to their colleagues. They did this by beginning their notes with the relevant person's name, thereby enabling researchers to identify who participated in discussions on a particular occasion[108]

The dispatches mainly circulated between these sites within a well-governed postal system. However, individuals also conveyed information. The system of correspondence was designed for a well-organized exchange of information. The civil servants in the colonies and in London worked to ensure the most efficient transfer of letters: the dispatches were collected at the post office and overseas post was dispatched every evening at 8 o'clock from the Lombard Street Post Office in London.[109] Between the 1830s and the 1850s, it typically took between four to six months for post to reach Australia. After the widespread introduction of steamboats in the 1860s, the travel time reduced considerably, with letters arriving at the offices within three months of being sent.

The correspondence is arranged by colonies and bound in volumes. As new colonies were established, a new series of correspondence began. The letters are arranged chronologically and they include the minutes of the civil servants. Often, they also include the correspondence that took place as a result of dealing with the matter in London: the Colonial Office often consulted the Treasury and the Land and Emigration Board, for example, in matters relating to the finance and management of lands in the colonies. The minutes, in particular, are informative as they reveal as Anne Thurnston notes "the main formulators of office policy and how their minds were working, or at least the opinions that they wished their colleagues to attribute to them".[110] As the minutes are initialed and dated, it is often possible to identify who wrote what and when, although uninitiated minutes and annotations also exist.

I analyze these correspondence materials in comparison to a selection of manuscript sources relating to exploration and surveying. These include material relating to the surveying work in the field and the functioning of the survey departments, correspondence between individuals involved in these processes and other material, such as the Council Meeting Minutes and Evening Meeting Minutes of the RGS which help to inform me about the practices of the period.

The great quantity of printed material, especially the publications of the RGS, the Parliamentary Papers and the colonial and British press, are important sources in this study, as they make it possible to understand how the various pieces of knowledge were made public in different locations. During the period being examined in the present work, the RGS published two different publications: *The Journal of the Royal Geographical Society* and *The Proceedings of the Royal Geographical Society.* This thesis analyses the articles relating to Australia from both publications. The printed publications that this study addresses also include the colonial press, as well as the Parliamentary Papers, which were the official publications of the British government. My use of the articles printed by the colonial press

[108] Banton 2008, 54, 64, 67.
[109] Young 1961, 143–144.
[110] Thursten vol. 1, 39. Quoted in Banton 2008, 64.

is informed by their relevance in different discussion relating to the circulation of the geographical and cartographical knowledge produced by the explorers, the RGS and the cartographer John Arrowsmith.

The maps examined in this study consist of manuscript and printed versions that are stored in different repositories. They were utilized in government offices and were circulated across the oceans and printed and published in different ways by different actors. The majority of the manuscript maps studied in this work relate to the correspondence between the colonies and Britain: some of these are located within the correspondence volumes, but most have been extracted from the correspondence in order to form separate map collections. In addition to manuscript maps, I examine printed maps (mainly from the collections of The National Archives (TNA) in the United Kingdom and The National Library of Australia (NLA)). This study is also informed by maps printed in the publications of the RGS and the parliamentary papers.

Methods

Uncovering the processes involved in making geographies is not straightforward and requires following the trajectories of different material from one place to another and examining their transformation. My study involves combining methodological tools developed in the fields of history of knowledge and science, historical geography and the history of cartography, as described above.

The transformations and process of shaping that took place in the Australian context can be revealed by examining material from different stages of the process of knowledge-work and following their trajectories. In order to determine how this material was read and how it was used in different locations, it is necessary to ascertain who used them and in what way. These traces constitute important signposts when determining how they were utilized in order to prepare different types of published material (particularly maps, journal articles and parliamentary papers). At times the correspondence included the original journals that had been kept by the explorers in the field. However, the publication process of this material is not examined in this thesis.

Consequently, I examine the traces left by various actors in different locations in the form of minutes, annotations, and draft letters. I also analyze manuscript maps and compare them to the multitude of printed maps, as well as cross reading a wide array of manuscript material alongside printed articles and texts. Thus, I follow Stoler and Ballantyne in examining colonial archives as sites of knowledge-production, not repositories of knowledge. I agree with Ballantyne in his recent arguments regarding the benefits of examining the fluid and porous archives of the British Empire that are scattered in different locations.[111] The opportunity to critically analyze and compare maps and texts that were

[111] Stoler 2002; Ballantyne 2014.

produced and stored in different locations helps researchers to uncover how movement fashioned content and how new shapes of knowledge came to exist and consequently constructed the physical and political geography of the continent in particular ways.

Following the traces left on the different types of material enables me to determine how the colossal amount of geographical and cartographical information was used and where it was communicated, as well as in what form and when. Consequently, I use these traces to uncover important nodes of knowledge-work and to investigate what the processes of circulating various types of material between different locations and actors meant for the formation of geographical knowledge. In so doing, I follow the stance advocated by Charles W. J. Withers. He argues that examining how "things and people" in different locations "both shaped and were shaped by, the other" is required to understand what the connections between different locations signified for the process of forming knowledge.[112]

Conducting research in this manner comes with multiple limitations. First and foremost, is the need to locate the right material. As Prior and Edney note, the feasibility of processual studies of maps is made possible by the availability of pertinent material. It is often impossible to engage with every aspect of the process, from production to circulation and consumption. Contextual studies of maps require archival work that poses many pragmatic challenges.[113] A major challenge for this study is the non-existence of a major group of material; namely, sources that provide detailed documentation of the workings of the Arrowsmith map firm. Such material was unfortunately destroyed during a German bombing raid on London during World War II.[114] Consequently, a great deal of material relating to Arrowsmith's working methods, network of correspondence and map collections does not exist.

The unavailability of this material has extensive methodological consequences for the execution of this study. To determine Arrowsmith's role in mapping Australia, as well as details about his relationship with the Colonial Office and the RGS, it is necessary to combine the scattered pieces of information that are extant. This surviving evidence exists mainly in the form of marginalia, but also includes other material, that informs us about the process of production. This extant material enables researchers to construct portions of the social and technical context that shaped the content of the maps. These fragments help to inform me about Arrowsmith's work with different institutions. By analyzing this material with the extensive collection of Arrowsmith's printed and published maps and with other material enables me to locate pieces of the puzzle that document his contribution to the mapping of the Australian continent. However, it has to be borne in mind that the pieces that I have been able to analyze only tell us about a portion of the story.

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[112] Withers 2015, 247–48.
[113] Edney 2011b, 333; Prior 2012, 222–24, passim.
[114] Verner 1971b.

In cases where material does exist, including the extensive collection of correspondence between the Colonial Office and the Australian colonies, the use of such material to uncover instances of how maps were read and consumed is not straightforward. As Jacob notes, it is extremely difficult to examine how maps were read and consumed. It is often the case, for example, that the individuals who examined maps left no trace of how they read them.[115] Traces of reading and consumption do exist in the cases studied in this thesis. However, they are not always systematic or easy to uncover. Consequently, the notes and minutes left by the civil servants, among others, reveal only a fraction of what they were thinking when they consulted particular maps.

Consulting material that provides an opening into how maps were read and used is, therefore, a somewhat daunting task. It requires analyzing a huge volume of correspondence in the hope of finding something that would inform us of the practices of reading and consumption. The material selected for this study enables me to examine how the maps were read at different sites. This is particularly the case in regard to the Colonial Office and the governors' establishments, which spanned the continent. The instances that can be identified do not constitute a comprehensive understanding of how maps were used and consumed in different locations. Rather, they are illustrative of these moments. At the same time, a study that spans over three decades of knowledge-work and map circulation enables a historian to grasp, to a certain extent, what was typical and what was not in the Australian context.

The challenge faced when studying maps can be extended to research on the process of knowledge-work in general. The correspondence analyzed in this study, replete with minutes, annotations and marginalia, enables an extensive study to be undertaken of how the material was used and where it was circulated, as well as who studied them etc. However, this material also pose challenges. As noted by Amy Prior, who has engaged with very similar material in her research, the major challenge for building a framework like this is the degree to which material in repositories is easily available and accessible for researchers.[116] The archives relating to official correspondence at the National Archives are a case in point in this sense: they are, for the most part, arranged chronologically. Furthermore, finding annotations and minutes about exploration and surveying requires the extremely time-consuming examination of over five-hundred volumes of extant correspondence relating to the period studied.

Thus, conducting an examination of the formation of knowledge in this manner comes with limitations. Many steps that constitute the process of knowledge work are not documented in any way, or material relating to this process has disappeared, or is archived in such a manner that does not enable it to be connected to other evidence. On many occasions, we can only make educated guesses about how the process of thinking and work occurred: what books and other material did the different actors have at their disposal?

[115] Jacob 1996, 192. See also Kokkonen 1998, 64.
[116] Prior 2012, 222.

How much time did they have to write a particular letter or scrutinize a certain map in order to draw conclusions? Instead, what is left for the historian to examine are numerous fragments: glimpses of these processes, in which Australian space was described, analyzed and consequently constructed.

However, the examination of a wide array and a large quantity of material enables me to overcome some of the challenges posed by the examination of complex processes, such as knowledge formation. It is possible to examine the existing possibilities and complexities stemming from the processes of establishing knowledge in multiple locations. This can be achieved by combining the numerous traces that were left for posterity. The methodology adopted in this thesis, in essence, makes it clear that conducting a study about the circulation of geographical and cartographical knowledge is not simply a matter of describing the circulatory loops that existed. It involves engaging with the numerous traces left for posterity that inform us about the multidirectional and often chaotic nature of the processes that occurred.

Concepts

This study places a heavy emphasis on the formation, movements and transformations of knowledge. Hence, it is necessary to define what is meant by 'knowledge', 'information' and 'data'. First, all of these concepts are understood in this thesis as being historical. I therefore examine what was understood as geographical knowledge and what was considered as a valuable piece of data in the mid-nineteenth century. However, I do not consider the accuracy of this knowledge about the Australian environment in reference to our current systems of knowing.[117] Second, I draw on the work of Peter Burke and Jürgen Renn when seeking to determine the relationship between the different concepts. Burke adopts a theory by Claude Lévi-Strauss, whereby knowledge can be understood as 'cooked'.[118]

Jürgen Renn's defines knowledge as an "encoded experience".[119] This means that experience helps individuals and institutions to solve problems and to anticipate a course of action. Consequently, knowledge can be understood as something that accumulates through encounters with a plethora of data and information as a result of 'cooking'. Defining knowledge in such a way does not entail that information and data cannot constitute 'filtered' observations of the world. Moreover, it does not overlook the consequences of selection that are defined by the cultural context as well as the physical capabilities and motivations of the individual observer. Furthermore, observations made in the field were often synthesized on multiple occasions as a result of the manner in which they were reported. This had direct implications on what was eventually 'cooked'.

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[117] Östling 2015, 116.
[118] Burker 2016, 6-7.
[119] Renn 2015, 40.

I employ the concept of knowledge-work in order to describe the process of 'cooking' that occurred as different material circulated. Knowledge-work is an analytical tool put forward in a historical context by Noah Heringman, among others. Heringman employs the concept as a tool "to disrupt the self-evident identification of certain areas of discovery with single individuals".[120] He employs the concept when analyzing the work of antiquarian scholars. However, in my view it is a fitting concept that can be applied in the context of civil servants, cartographers, explorers and scientific societies. It is an anachronistic term, but helps describe how making geographies was a process that consisted of the efforts and work of multiple individuals in different locations.

Consequently, the application of the concepts of 'knowledge', 'information' and 'data' occur in this study in a historical and hierarchical manner. In so doing, I am sensitive to the geography of knowledge: what counted as knowledge and what was understood as a fraction of data was just as much spatially determined as it was temporally conditioned. This point has been made by numerous historical geographers such as David N. Livingstone and Charles W. J. Withers,[121] and it has a strong connection to the processes of circulation. However, in the context of this study the geography of knowledge is not built upon a straightforward model of 'information' that flows into the metropolis and is subsequently transformed into 'knowledge'. I argue for a multi-centered conception of the locations of knowledge-work, whereby information and data are analyzed, gathered and preserved.[122] The metropolis, with its different institutions, was an important site for knowledge-work, but so were the colonies, where instances of analysis, as well as the gathering, preservation and transformation of information also occurred. The processes of knowledge-work were also not simultaneous. New information from the surveys and explorations became available earlier in the colonies, for example, enabling the settlers, surveyors and colonists to work with the data for a long time prior to it reaching the metropolis.

The Circuits of the Study

This study is organized around three intertwined "circuits" of geographical and cartographical knowledge travelling between the Australian colonies and London. The thematic structure of the study derives from the different stages of analyzing the geographical knowledge. As the study advances, the focus narrows: from an extensive volume of maps and texts, which were circulated within the official correspondence, to the examination of how they moved from the Colonial Office to different actors in London and how they ulti-

[120] Heringman 2013, 11.
[121] See, for example, Livingstone 2003, Livingstone and Withers 2001a; Livingstone and Withers 2011b. For an excellent review of research on the geographies of science see Naylor 2005.
[122] See, for example, Dritsas 2011.

mately materialized in new forms. Consequently, the study proceeds in a funnel-like manner, ending up with an analysis of the maps of John Arrowsmith, which can be viewed as synthesized and generalized materializations of geographical knowledge.

In the first main chapter I examine the official circuits for transmitting geographical knowledge from the colonies to London, which were constituted by the official correspondence that occurred between the government offices. I use the correspondence between the colonies and London as a starting point to uncover what kind of geographical knowledge and maps the civil servants in different locations had at their disposal. What is more, I examine how they analyzed and formulated geographical and spatial knowledge as they discussed the results of exploring expeditions and the progress of surveys. I investigate how dispatches and the accompanying enclosures represent "a system of knowing" that constituted the civil servants' understanding of the Australian colonies. I also trace the challenges faced by governors, in particular, when transmitting material to London. I further examine how the correspondence between officials in the colonies and London resulted in the accumulation of cartographical archives in both Australia and Britain, which were intertwined and co-constitutive.

In the second main chapter I turn to an examination of the two main ways in which the staff at the Colonial Office sought to publicize the reports of exploration and the maps that they received. First, I investigate how a portion of the documents that were received in London was laid before Parliament. I examine what kinds of map were used in these papers and investigate how the civil servants utilized the Parliamentary Papers to publish information regarding the exploration and surveying of the continent. I trace how and why the information was selected for publication. Second, I scrutinize the practices of forwarding different types of material to the RGS. I examine how the civil servants selected material to be sent to the society and analyze what the RGS did with the information it received. In sum, this chapter informs us about the processes involved in publishing a great deal of the material (especially written accounts) in London.

The third and last main chapter focuses on how geographical and cartographical knowledge was synthetized and generalized on small-scale maps of Australia. My starting point is the career of the cartographer John Arrowsmith, who had an influential role in these processes. I examine Arrowsmith as an important aide to the Colonial Office as a producer of maps for use in government departments. I also analyze his role as a knowledge-worker, who exerted considerable influence in constructing the Australian environment and the political geographies of the continent on his maps. By critically examining the material produced by Arrowsmith with other maps and material that were in circulation at the time, this chapter informs us about the different processes and practices that influenced how the cartographer constructed geographical knowledge on his maps.

This study concludes in 'Conclusion and implications', where I draw together the main points from the preceding chapters and evaluate their significance and implications for future research.

1 A SYSTEM OF KNOWING

The exploration and surveying of the Australian colonies produced an abundance of geographical knowledge. Civil servants in various locations encountered this knowledge and had to process it on a daily basis. In this chapter I examine how geographical and cartographical knowledge flowed within a system of knowing that constituted the British governance of overseas colonies. I investigate how different types of documents containing geographical knowledge—dispatches, maps, tables, and newspaper cuttings for instance—were employed and discussed when drawing conclusions about the Australian environment.

This chapter is divided into two parts: first, I examine how governors and civil servants discussed the geographical information arriving in textual form and examine the challenges they encountered in gaining access to this data. Secondly, I examine the different maps that were circulated between the colonies and London and investigate how they were read, what affected their availability and how they were eventually archived in different locations. Throughout my analysis I address questions relating to the unavailability and unreliability of the material, thereby revealing the kind of processes that affected the information used by different actors. The sections in this chapter, when viewed together, contribute to our understanding of how the knowledge-work undertaken by civil servants played a pivotal role in the formation of geographical knowledge.

Fundamentally, this chapter furthers our understanding of the processes involved in the formation of a corpus of knowledge, or, more specifically an archive of geographical and cartographical information. I employ the concept of an archive, which was discussed in the introduction, in two ways: to reflect on the figurative archive of geographical knowledge and to analyze the concrete archives that were established at the time in order to manage geographical knowledge. I connect the idea of the archive with the four-stage model used to describe the process of the production and transformation of knowledge. Peter Burke discusses this model of gathering, analyzing, dissemination and employment in his recent book on the history of knowledge. The stages described can entail many different types of activity, such as the manner in which the gathering of information can be comprised of everything from observation to storage and from preservation to the retrieval of information.[123] This chapter focuses on the practices of gathering information and demonstrates its entwinement with the processes of analysis and mediation. The process of gathering was conditioned by spatio-temporal factors and consisted of different stages in various locations in the colonies and in Britain. The practices that took place in the field, at the survey office, in the governors' houses, in the Colonial Office and the map library, for example, exemplify the roles of different actors (and the places) within the network that managed the flow of information in the colonies and in the British capital.

Desks and Offices: Places of Knowledge-Work Across the Globe

Introducing and Evaluating Geographical Discoveries

In February 1858, Gordon Gairdner (1803-1877), a senior clerk serving as the head of the Australian Department at the Colonial Office, was reading through Governor Richard MacDonnell's account of the recent explorations in the western part of South Australia. MacDonnell had written to London to inform his superiors that the explorer Stephen Hack (1816–1894) had encountered an extensive saltlake. In MacDonnell's opinion, the lake was "one of the most striking objects hitherto met with in Australian scenery." With this sentiment in mind, he had taken the liberty of naming it after Gairdner, "the gentleman whose long and faithful services in the Australian Department of the Colonial Office justly entitle him to some such tribute of remembrance from here".[124]

Gairdner was apparently perplexed by this token of appreciation, as he subsequently suggested in a minute that the section regarding the naming of the lake should be left out when communicating the information to the Royal Geographical Society.[125] His superiors, however, did not agree. Chief clerk Thomas Frederick Elliot (1808–1880), for example, recommended that this "gratifying allusion" should not be omitted when writing the letter to London.[126] The permanent under-secretary, Herman Merivale (1806–1874), and the secretary of state, Edward Lytton (1803-1874), both agreed with Elliot, although the former noted that he thought it is "hardly a compliment to Mr. Gairdner that he should be selected

[123] Burke 2016, 46–47.
[124] MacDonnell to Lytton 30 November 1857 no. 203, f. 286, CO 13/96, TNA.
[125] Minute by Gairdner 10 February 1858 in MacDonnell to Lytton 30 November 1857 no. 203, ff. 286-287, CO 13/96, TNA.
[126] Minute by Elliot 11 February 1858 in MacDonnell to Lytton 30 November 1857 no. 203, f. 287, CO 13/96, TNA.

as the godfather of this Australian dead sea".[127] Gairdner had continuously dealt with developments in the Australian colonies since entering the Colonial Office in 1824. As a consequence of MacDonnell's tribute, his name did in fact become a part of the geography of the Australian continent.[128]

The procedure involved in naming a lake on the outskirts of the colony of South Australia directs our attention to three particular aspects. First, the honor bestowed upon Gairdner highlights the importance attached to the management of affairs relating to the Australian colonies in London. Secondly, it draws attention to the way available geographical knowledge was introduced by governors in their correspondence with the Colonial Office. It highlights the role of governors as communicators and evaluators of new geographical information. Thirdly, it is examplary of the way the communications made by the governors were read and evaluated at the Colonial Office. In this section I take these three aspects as starting points in order to examine how government officials in different locations discussed and evaluated geographical discoveries made on the Australian continent. In what follows I will firstly discuss the developments that constituted the flows of geographical information to the Colonial Office. I will then examine what the governors did to the knowledge that was available as they transmitted it to London. Lastly, I will analyze how the civil servants in London reacted to the information and interpretations they received.

It was impossible for the civil servants in London to completely anticipate the character of the new information that arrived on their desks, such as the discovery of a striking salt-lake in the Australian outback. However, the civil servants who perused their mail in the 1850s were able to anticipate the form in which it would arrive, as well as being able to guess the type of accompanying enclosures. Many of the procedures that governed the parameters of correspondence in the 1850s dated to the 1820s and 1830s, when expansion of the empire forced the Colonial Office to alter how it practiced the exertion of imperial influence. As the British Empire expanded and the need to construct systems of rule in different parts of the world increased, the volume of correspondence, as well as the amount of data collected and the quantity of work required to manage the overseas territories increased exponentially. Consequently, the complexity of governing the empire dramatically increased.[129] This explosion in the amount of information being relayed to London from the colonies was felt in all branches of government as new methods to collect data were established.

The growing volume of correspondence created a need for a larger workforce and greater workspace. The amount of staff at the Colonial Office more than doubled from 20

[127] Minute by Merivale 13 February 1858 in MacDonnell to Lytton 30 November 1857 no. 203, f. 287, CO 13/96, TNA; Minute by Lytton 18 February 1858 in MacDonnell to Lytton 30 November 1857 no. 203, f. 287, CO 13/96, TNA.
[128] "Gairdner, Gordon (1803–1877)" 1966".
[129] Burroughs 1999; Laidlaw 2005; Peers 2007.

in 1822 to 41 in 1848, as new offices were added and the department was reorganized. This trend continued unabated into the 1860s.[130] The growth in personnel and the spiraling amount of paperwork required to manage the empire necessitated ever greater office and storage space. In 1827, additional space for the management of colonial affairs was created by merging 14 Downing Street, the site of the Colonial Office since 1798, with the adjoining property (12 Downing Street).[131]

The increase in correspondence revealed that the practices utilized for the collection of official data were impractical. Moreover, the manner in which the material was inspected and archived was poor. The first step to remedying this unsatisfactory situation was taken in 1835, when private communications and information gathering was banned. Thus, permanent under-secretaries could no longer manage colonial affairs through personal correspondence, as had taken place before. The implementation of this change revealed the "department's information crisis" and led to new ways of collecting colonial knowledge. Private networks exerted a softer influence than official dispatches, thereby creating strong personal ties between colonial bureaucrats and civil servants in London. These private connections also provided a more multifaceted picture of the colony. Consequently, at the time James Stephen 81789–1859) succeeded Robert Hay (1786–1861) as permanent under-secretary in 1836, the Colonial Office had to establish new tools to ensure that the gathering of information from the colonies became more effective.[132]

The civil servants in London obtained information about developments in the Australian colonies from different actors, such as explorers, retired civil servants and scientific societies. However, governors served as the primary channel through which geographical knowledge was accumulated at the Colonial Office. The civil servants in London depended to a great extent on this information, which was written in the form of dispatches with material also attached as enclosures on occasions.[133] Governors were given detailed instructions about how they were expected to report back to London about all the developments that took place in the colony. These precise orders were set in place as a means to control the nature of the information that was sent from. The guidelines were communicated to governors in the form of circulars. In 1837, they were compiled into a book by James Stephen, entitled *Rules and regulations for the information and guidance of the principal officers and others in His Majesty's colonial possessions, with its appendixes,* in order to provide a detailed explanation of the structure of the communications that were expected from the civil servants employed in the overseas colonies. The book is approxi-

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130 Sainty 1976, 33–35.
131 Young 1961, 80-81, 124-127, 145-146; Banton 2008, 35-36; Black 2014, 302.
132 Laidlaw 2005, 169–179. See also Young 1961, 86.
133 The Colonial Office staff also received news via newspapers and government gazettes. The Colonial Office subscribed to British and continental newspapers, from which the clerks extracted articles and compiled reference books for use at the office. The amount of subscriptions depended on the budget of the office. Young 1961, 139.

mately 150 pages long and contains information and instructions regarding the responsibilities and duties of the civil servants and instructions for the composition of official correspondence. The regulations aimed at enforcing and "channeling all correspondence into a single path between governors and the Secretary of State".[134] Judging by notes made at the Colonial Office, it was necessary from time to time to remind the governors of these instructions, which took the form of circulars. These circulars were occasionally sent to the governors in order to remind them to enclose three copies of any printed documents sent with dispatches, for example, or to explicitly point out the portions of newspapers that were relevant for the matter under discussion.[135]

Set rules governed the writing of all dispatches during the period being examined in the present work. The most important issue was that dispatches should introduce the matter at hand and include the opinion of the governor. The civil servants in London expected governors to comment on the significance and credibility of the information that was transmitted. In practice, this meant that the governors had to make sense of an abundance of different material that contained new information regarding geographical discoveries, exploration and surveys that were received from a variety of actors. Consequently, the instructions and regulations that guided the production of documents relating to the records of the colonial administration served an important purpose: they were a means to manage the processes of knowledge production.

Thus, the letter that contained information about the Australian salt lakes, for example, was part of a process of forming an archive that constituted colonization, but also served as a means to transform the Australian environment into British geographies. As James Hevia notes, the colonial archives were "coherent sets of material practices" that functioned to "decode and recode" colonial territories. The existence of these archives constituted an epistemological network that generated knowledge.[136]

In the context of the Australian colonies, this epistemological network for the generation of knowledge was constituted by a variety of different textual, graphic and visual documents that came into the hands of the governors. The foundation of the data that was collected derived from field diaries, personal notebooks, letters from members of the expedition teams and final reports produced by the explorers and surveyors. The texts included daily reports, as well as letters and journals. The textual narratives were usually written by the expedition leader and later, at the end of the expedition, they were combined with the data collected by the other members of the expedition team. Different individuals produced different texts, as expedition teams often consisted of a variety of scientific ex-

[134] Laidlaw 2005, 63, 170. Also see Snelling and Barron 1972, 149.
[135] Annotation by Stephen 19 February in Gipps to Russell 28 September 1840 no. 139, f. 167, CO 201/299, TNA; Circular 16 September 1852, 85, vol. 1, VPRS 1088, PROV; Annotation by Gairdner 18 February 1854 in Latrobe to Newcastle 24 November 1853 no. 187 f. 193, CO 309/19, TNA; draft of a circular 28 February 1854 in Latrobe to Newcastle 24 November 1853, f. 197, CO 309/19, TNA; A circular of 19 December 1857, 293, vol. 4, VPRS 1088, PROV.
[136] Hevia 1998, 234.

perts. This enabled the multifaceted collection of new information. In addition to the narratives, the texts included botanical, ethnographical, geological, meteorological, mineralogical, and zoological descriptions. Often these reports were produced in tabular form: the vocabularies of the indigenous peoples, temperatures and precipitation levels, new botanical and zoological specimens, alongside minerals that had been encountered were recorded and listed in a very detailed manner. Furthermore, different types of visual records, such as cartographic material and sketches depicting different aspects of the environment, arrived on the governors' desks.

It was a necessary and important task to examine the broad variety of material that related to progress made in the field and to then indicate the most relevant aspects. The colonial governors in Australia made enormous contributions to the primary analysis of the knowledge conveyed by surveyors, explorers, convicts, squatters and settlers. They did this (with the help of secretaries) by composing condensed accounts of the developments that had taken place vis-à-vis the geographical characteristics of the colonies. Peter Burke terms the production of a synthesis—often in the form of a narrative—the final stage of the process of analysis. The travel accounts and reports produced by the explorers and surveyors are one example of these narratives. They contained the information that had been gathered in the field and had already been organized into a descriptive account that explained what had been observed.[137] In a similar manner, the dispatches composed by civil servants were a synthesis of the available information. In commenting on the knowledge that circulated in the letters, reports, maps and specimen collections, the governors participated in the making and establishment of geographical knowledge about the Australian continent.

The governors not only introduced the knowledge-work at hand, but it is also evident from the letters they wrote that they examined and evaluated this information. To a large extent the evaluation depended on the reliance of governors on the accounts of explorers and surveyors. On these occasions, the governors often reflected on the significance of the expedition and discussed the possible conclusions that could be drawn. In 1838, for example, the acting governor of South Australia, George Stephen (1812–1894) sent dispatches that contained his reflections on Charles Sturt's overland expedition from New South Wales to South Australia in order to examine Lake Alexandrina and the outlet of the River Murray.[138] In his dispatches, Stephen quoted Sturt extensively. He noted, for example, that Sturt's "Geographical information and opinions, respecting its soil and general capabilities,

[137] Burke 2016, 74.

[138] Stephen to Glenelg 12 September 1838 no. 14, ff. 299-302, CO 13/11, TNA; Stephen to Glenelg 4 October 1838 no. 15, ff. 315-318, CO 13/11, TNA. See also Stephen to Glenelg 5 October 1838 no. 17, ff. 344-351, CO 13/11, TNA. For similar examples of governors' reliance on the informant see, for example, Grey to Stanley 16 September 1843 no. 131, ff. 157-158, CO 13/34, TNA; Robe to Gladstone 11 June 1846 no. 68, ff. 254-257, CO 13/49, TNA; Fitzroy to Grey 26 September 1847 no. 192, f. 142, CO 201/384, TNA; Young to Grey 2 January 1852 no. 1, ff. 3-5, CO 13/76, TNA; Young to Grey 14 January 1852 no. 21, ff. 164-165, CO 13/76, TNA; Fitzroy to Grey 20 February 1852 no. 40, f. 64, CO 201/456, TNA; MacDonnell to Labouchere 11 July 1857 no. 112, ff. 302-304, CO 13/95, TNA; Fitzgerald to Pakington 6 January 1853 no. 6, ff. 32-36, CO 18/72, TNA; Fitzgerald to Grey 20 July 1855 no. 80, ff. 253-254, CO 18/88, TNA.

will probably be extensively relied upon". Furthermore, on another occasion, Stephen concluded that Sturt's "excellent report" contained information that enabled conclusions to be made about the opportunities that could stem from the River Murray. Even though it seemed that the river was not navigable by ship, communication was possible by land.[139] It is important to note that these dispatches were geared around Sturt's report. Stephen relied extensively on Sturt, for example, and derived his understanding of the River Murray through Sturt's observations.

The governors also noted if observations were of poor quality, or if the results were unremarkable. In 1857, for example, MacDonnell noted in his report that the results of a recent expedition could not be termed significant, despite recording already mentioned discovery of the striking salt lake by Stephen Hack. According to MacDonnell, Hack had not displayed any enterprise or made any major discoveries. The map produced by the surveyor accompanying him was apparently only of tolerable quality. Still, in MacDonnell's view the saltlake Hack had come across was worthy of highlighting as an extraordinary feature in the Australian environment.[140] In general, the results of the expedition were judged on their usefulness to the colony, but also in terms of their geographical importance. Furthermore, the quality and the accuracy of the observations was not deemed to be of crucial importance if the discoveries were significant and vice versa. For example, Charles Sturt's Central Australian Expedition did not produce a remarkable source of new profit for the colony of South Australia, but it was seen as an important steppingstone for future explorations.[141] In a similar manner, observations made with poor methods, such John McDouall Stuart's use of dead reckoning and a single compass during his expedition in 1858, could be seen in a positive light if the general results were considered sufficiently remarkable.[142]

Consequently, the governors in Australia evaluated the credibility of the information they received in a very similar manner as occurred between people in the field and departments of state in London. These evaluations were based on various principles: the way the work corresponded with the ideals of accuracy was significant, as was the manner in which explorers and surveyors followed instructions. Explorers were required to report back to their superiors in a particular style that followed set rules. The collection of data was usually instructed to be carried out in a very detailed and exact manner. These instructions stipulated how positions should be calculated, for example, as well as what equipment should be used to collect data and how often reports should be made.[143] Thus, the style of both

[139] Stephen to Glenelg 4 October 1838 no. 15, f. 318, CO 13/11, TNA.
[140] For similar examples see Fitzroy to Grey 30 August 1851 no 157, ff. 342–343, CO 201/444, TNA.
[141] MacDonnell to Labouchere 30 November 1857 no. 203, f. 285, CO 13/96, TNA. For similar examples see, for example Robe to Gladstone 11 June 1846, no. 68, f. 254, CO 13/49, TNA; Fitzroy to Grey 30 August 1851 no. 157, ff. 342–343, CO 201/444, TNA.
[142] MacDonnell to Lytton 11 November 1858 no. 271, ff. 450-451, also see ff. 444-543, CO 13/97, TNA.
[143] See, for example, "Enclosure 2" in Bourke to Aberdeen 19 July 1853 no. 63, ff. 294-299, CO 201/246, TNA; The Letter of Instructions in Grey to Stanley 10 August 1844 no. 90, CO 13/38, TNA; To B. H. Babbage 9 February 1858 in MacDonnell to Labouchere 11 February 1858 no. 223, f. 115, CO 13/97, TNA.

reports and subsequent proceedings mattered a great deal. If a report was deemed to be well composed, no further elaboration was needed.[144]

Thus, many aspects determined how information was received and analyzed. These were connected with the general principles that determined the status of an explorer. Felix Driver notes that the gender, class status and ethnic background of an explorer affected the way his conclusions were accepted in public discussions. In addition, the methods used to produce knowledge were important, for example, even though it was generally known that the instruments used might give false results and were not completely foolproof. The way in which the status of the knowledge produced by an explorer was defined, depended on a number of factors, including his position as an observer, his methods of observation, his form of reporting and the audience the knowledge was presented to.[145]

The knowledge-work of the governor was greatly affected by the amount of data they had at their disposal. This is evident in the instances when governors had the opportunity to comment on the progress made while the expeditions and surveying projects were still in progress and on other occasions when only a fraction of the results were known. This practice is striking when lengthy expeditions, such as the Central Australian Expedition and the North Australian Expedition, were still ongoing, as governors had the opportunity to report on their progress to London as they proceeded. Depending on the expedition, the explorers and surveyors sent letters from the field to their patrons, who were usually governors. However, they also wrote to family members, friends and directly to civil servants in London. Different individuals, such as expedition members and indigenous people encountered in the field, were used as messengers in order to transfer the letters to post offices or directly to settlements. Passing ships were also employed to report news to the

[144] See, for example, Fitzroy to Grey 25 April 1848 no. 25, f. 177, CO 201/412, TNA.

[145] Driver 2001, 55-56. For further discussion on the significance of method in the culture of exploration, see Withers 2013. For an illuminating account of the role of scientific methods in exploration see, for example Kennedy 2013, chapter 2.

colonies.[146] As Kennedy notes, the explorers occasionally sent individuals to the colonies in order to gather information about the progress their rivals were making.[147]

On these occasions, the governors composed their letters and discussed the significance of the new information when the final results of the expedition still remained unknown. Moreover, they could not rely on the valuable data contained in an explorer's first-hand account that often formed an organized and reasonable whole. Consequently, they were not able to fully evaluate the significance of the new information. In 1829, governor Ralph Darling (1772–1858) wrote that it was "impossible (...) to judge whether the New River (...) is a distinct stream, or only a continuation of the Castlereagh", in a dispatch that contained letters Charles Sturt had sent during his expedition. At this time Darling did not have the full journal and map at his disposal.[148]

Yet, on some occasions the governors engaged in an analysis of the explorers' accounts and made extensive predictions about possible outcomes. When governor George Grey (1812–1898) reported on the progress of the Central Australian Expedition led by Sturt in the interior of the continent in 1844, for example, he concluded that the information he had received could not be correct. Grey referred to the observations of James Poole (d. 1845), who had been sent by Sturt to examine the country between the expedition party and some ranges they had sighted. On his return, Poole reported seeing an extensive tract of water replete with numerous islands. Sturt reasoned that further investigation of the area was needed based on Poole's sighting of the mass of water, as well as the birds he had seen. Sturt added that nothing could be said with certainty, as reports from the indigenous people of the area were very contradictory.[149]

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146 For examples of letters transmitted from the field to the colony during the Central Australian Expedition, see Sturt to Lady Darling 22 August 1844, 31, MSS. Austral. 5, Bodleian Library; Sturt to Stanley 24 August 1844 in Grey to Stanley 13 September 1844 no. 115, ff. 150–152, CO 13/39, TNA; Sturt to the Colonial Secretary 2 September 1844 in Grey to Stanley 20 September 1844 no 120, f. 231, CO 13/39, TNA; Sturt to the Colonial Secretary 10 September 1844 in Grey to Stanley 20 September 1844 no. 120, ff. 233-235, CO 13/39, TNA; Sturt to the Colonial Secretary 16 September 1844 in Grey to Stanley 28 September 1844, ff. 584-585, CO 13/39, TNA; Eyre to the Colonial Secretary 24 September 1844 in Grey to Stanley 28 September 1844 no. 127, ff. 586-587, CO 13/39, TNA; Sturt to the Colonial Secretary 16 October 1844 in Grey to Stanley 8 November 1844 no. 145, ff. 114-120, CO 13/40, TNA; Grey to Stanley 25 March 1845 no. 31, ff. 300-301, CO 13/43, TNA. For examples of the letters transmitted during the North Australian Expedition, see "North Australian Expedition" in Denison to Labouchere 20 March 1856 no. 52, f. 421, CO 201/493, TNA; "North Australian Expedition" in Denison to Labouchere 20 March 1856 no. 53, ff. 423-424, CO 201/493, TNA; "Camp Victoria River" in Denison to Labouchere 24 November 1856 no. 181, ff. 361-362, CO 201/495, TNA; "8th October 1856" in Denison to Labouchere 10 December 1856 no. 188, ff. 404-415, CO 201/495, TNA. For examples of similar instances of transmitting letters received from the field, see Darling to Murray 14 April 1829 no. 47, f. 79, CO 201/201, TNA; MacDonnell to Lytton 11 September 1858 no. 262, f. 392, CO 13/97, TNA; MacDonnell to Lytton 11 November 1858 no. 271, f. ff. 444-543, CO 13/97, TNA; MacDonnell to Lytton 11 December 1858 no. 281, ff. 509-513, CO 13/97, TNA.

147 Kennedy 2013, 85.

148 Darling to Murray 24 April 1829 no. 47, f. 79, CO 201/201, TNA.

149 Sturt to the Colonial Secretary 16 October 1844 in Grey to Stanley 8 November 1844 no. 146, ff. 114–120, CO 13/40, TNA.

Grey compared Poole's observations with those gained the previous year from the colony's surveyor general Edward C. Frome (1802-1890). Indeed, Grey attached an extract from Frome's report and a sketch comparing the positions of Frome and Poole in the field to support his argument. As with Poole, Frome had been deceived by the landscape. He later discovered that the area was in fact devoid of water.[150] Consequently, Grey summed up his dispatch by emphasizing that Sturt would encounter the same desert as had already been described by Frome.[151]

It appears that Grey's report did not provoke a particular reaction at the Colonial Office. In the draft reply to the dispatch, more interest was directed into the financial matters regarding the expedition, than the mirage of a sea.[152] As the matter was not commented upon in detail, it is evident that the knowledge and arguments transmitted by Grey did not seem astonishing or unconvincing to the civil servants in London. This is not surprising, as the observations of Frome, as reported by Grey, were reminiscent of the recent descriptions of Lake Torrens, which had already been discussed by civil servants in March 1844. At the time Thomas Frederick Elliot in London summarized Frome's results by stating that "the main fact is that Lake Torrens turns out to be no Lake at all, but a mere barren desert elevated into the appearance of Lake by the mirage".[153]

Sturt later reported similar observations as those made by Frome: the land in the area being investigated was devoid of water. Thus, governor Grey could report to London in September 1846 that no eastern branch of Lake Torrens—as was often depicted on maps of Australia—appeared to exist. In Grey's view, Sturt could not possibly entertain an idea about the existence of an eastern branch of the lake. Furthermore, Grey thought it most likely that Sturt, who appeared to be hinting that he wanted to explore the lake further north, would find that no northern branch of the lake existed either. As far as Grey was concerned, this branch "was never been supposed to have been seen, but was merely laid down as the probable connexion [sic] of the Eastern and Western branches of that lake".[154]

These instances of comparative analysis demonstrate the process of knowledge work that took place in Australia between different sources of information. The aim was to understand the significance of the knowledge that had been acquired. Comparing the results of current and previous expeditions was a vital part of the analysis, as this determined the

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[150] Grey to Stanley 8 November 1844 no. 146, ff. 108-110, CO 13/40, TNA; "Enclosure no 2 Extract from Report of the Hon'ble the Surveyor General, dated 14 September 1843" in Grey to Stanley 8 November 1844 no. 146, f. 121 CO 13/40, TNA; "Enclosure no 3" in Grey to Stanley 8 November 1844 no. 146, f. 110, CO 13/40, TNA. The tracing is mentioned in the dispatch, but is missing from the correspondence volume.
[151] Grey to Stanley 8 November 1844 no. 146, f. 110, CO 13/40, TNA.
See also "Enclosure no 2 Extract from Report of the Hon'ble the Surveyor General, dated 14 September 1843" in Grey to Stanley 8 November 1844 no. 146, f. 121, CO 13/40, TNA.
[152] Draft to Grey 8 May 1845 no. 39 in Grey to Stanley 8 November 1844 no. 146, ff. 111–113, CO13/40, TNA. See also the annotations on the draft to Grey 8 May 1845 no. 39 in Grey to Stanley 8 November 1844 no. 146, f. 113, CO 13/40, TNA.
[153] Annotation by Stephen 18 March 1844 in Grey to Stanley 16 September 1843 no. 131, f. 161, CO 13/34, TNA.
[154] Grey to Lord Stanley 7 September 1845 no. 106, ff. 461-462, CO 13/44, TNA.

credibility of the information that had been transmitted. It was also something that the explorers and surveyors acknowledged would occur.[155] The governors did this in a very concrete manner by highlighting the important notions that had previously been made and contrasting them with current accounts. This practice served to contextualize the information at hand: what was known before was viewed in relation to the reliability of information that was then being examined.[156]

The information that the governors had at their disposal was also reliant on whether they had access to the final reports of expeditions. Governors were entitled to request that expedition leaders deliver all finished documents to government officials if an expedition was government-funded. This was usually noted in the instructions given to expedition leaders. This also stipulated that explorers be granted time to write up their journals from their field notes. They could do this by themselves or they could enlist help. This also applied to transforming sketches into a tracing of a map.[157] The transmission of documents and specimens was expected to occur without delay. What is more, the members of the expeditions had to furnish their patrons with detailed accounts in the shape of journals, field notes, sketches, and maps.[158]

For various reasons, the transmittance of the knowledge that had been obtained was occasionally not possible. This was the case when explorers were unable to give material to a governor. In the case of Sturt's expedition to examine the course of the River Murrumbidgee in 1829-1830, for example, Governor Darling was unable to get the final reports, as Sturt had immediately been dispatched to Norfolk Island on official duties after his return from the Australian interior.[159] A similar example concerns Thomas Mitchell (1792–1855), who in April 1835 began to trace the River Darling from the interior of New South Wales to the coast. Mitchell managed to follow the river for about 300 miles, but was then forced to trace his steps back to the colony. Upon his return, he was expected to furnish governor Richard Bourke (1777–1855) with the documents he had been instructed to deliver. Copies of his journal and a map, however, never reached Government House, as Mitchell, who was speedily authorized to undertake another expedition, took his original memorandum with

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[155] Kennedy 2013, 86.

[156] See, for example, Darling to Murray 10 January 1829 no. 5, ff. 64–66, CO 201/200, TNA; Darling to Murray 14 April 1829 no. 47, ff. 78–82, CO 201/201, TNA; Fitzroy to Grey 26 September 1847 no. 192, ff. 141–142, CO 201/384, TNA.

[157] See the following instructions for example: Instructions to Kennedy, enclosure in Fitzroy to Grey 2 June 1848 no. 132, ff. 18–19, CO 201/398, TNA.

[158] When expeditions failed, special arrangements had to be made to transform the material into a legible form. This caused extensive delays in the work. This is evident, for example, in the case of the expeditions by Edmund B. Kennedy in the 1840s and Robert O'Hara Burke and William Will's expedition in the beginning of the 1860s. See Fitzroy to Grey 25 April 1849 no. 50, f. 180, CO 201/412, TNA; Fitzroy to Grey 27 August 1849 no. 184, ff. 259–260, CO 201/415, TNA; Fitzroy to Grey Fitzroy to Grey 23 July 1850 no. 142, f. 330 CO 201/430, TNA. For materials relating to Burke and Wills see, for example, the following dispatch and its enclosure: Barkly to Newcastle 20 November 1861 no. 92, ff. 164-166, CO 309/57, TNA; "Enclosure" in Barkly to Newcastle 20 November 1861 no. 92, ff. 170-185, CO 309/57, TNA.

[159] Darling to Hay 17 February 1831 "Private", f. 414, CO 201/218, TNA.

him. This left Bourke with the duty of explaining why he could not report about the results.[160]

When an expedition was funded by a private sponsor, close inspection of the documents was not always possible. Indeed, the desire of private actors to limit access to the different documents was made explicit in the case of John McDouall Stuart's (1815–1866) expeditions in the late 1850s and 1860. James Chambers (1811–1862), who employed Stuart on several occasions to explore and survey suitable land for squatting stations, also funded more large-scale expeditions. The expeditions organized in 1859 and 1860 aimed at examining the interior and sought to finally cross the continent from South Australia to the north coast. After Stuart returned, Chambers claimed ownership to all the documents produced and the local government only had the opportunity to see a portion of the information produced by Stuart. In 1859, for example, when MacDonnell reported to London after finally having had the chance of consulting Stuart's journal and preparing a tracing of the map he had seen, he noted that Chambers had all the details of the expedition. Furthermore, MacDonnell noted that the tracing he forwarded "does not however give all the particulars noted in a very much fuller map prepared by Mr. Stuart for the use of Mr. James Chambers".[161] A year later MacDonnell reported the same: Chambers held all the rights "to the fruits of that trip – whether in the form of journal, map or specimens of natural history" and therefore did not allow anyone else to forward them to Britain.[162]

Consequently, on such occasions the governors had to resort to alternative sources, rather than the original reports, when composing their letters. Articles printed by the colonial press were a particularly useful material. Newspapers were an important addition to official records and governors were encouraged to send them.[163] Newspapers printed in the Australian colonies were the first form of media to publish the results of expeditions and to report on their progress by publishing letters that had been received from the field. The character of the interior of the continent was the subject of many articles: plans for new expeditions were presented, the results of journeys were discussed and the significance of

[160] Bourke to Glenelg 12 October 1835 no. 101, ff. 423–424, CO 201/247, TNA; Instructions to Mitchell. Enclosure no. 2 in Bourke to Glenelg 19 July 1834 no. 63, ff. 294–299, CO 201/246, TNA.
[161] MacDonnell to Lytton 17 August 1859 no. 338, f. 115, CO 13/100, TNA.
[162] MacDonald to Lytton 26 October 1860 no. 436, ff. 594-595, CO 13/102, TNA. Chambers aimed at mailing the documents directly to the RGS.
[163] Young 1961, 139.

the knowledge produced was considered.[164] The same article was often published in different papers, as the editors copied these pieces from one another. This was possible as the newspapers circulated from one colony to another via maritime connections and as a result of correspondent networks between the settlements.[165] In addition to commercial newspapers, new geographical knowledge was made public as colonial governments published reports from expeditions in their government gazettes.[166]

Consequently, a pivotal role was played by newspapers and government gazettes in generating geographical knowledge within the colonies. The conclusions made by the journalists concerning knowledge that had been received regarding the continent's possibilities were important in shaping public awareness of the Australian environment. For governors, newspaper articles—even though they were not considered information in an "official shape"—were an important form of information that could be used as a means to relay intelligence to London.[167] In addition to communicating printed articles of the letters that had been received from the field, the governors also used newspapers as source material if this was all that was available. For example, governor Dominick Daly (1798-1868)—as well as Darling, Bourke and MacDonnell in the examples examined before— referred to articles printed in the local press when reporting the results of explorer John Mckinlay's expedition. He did this to give further details about it as he was currently able to transmit only a section of the full journal.[168]

Furthermore, the analysis that governors were able to complete depended, to a large extent, on the time they had at their disposal. On occasions, circumstances forced the governors to neglect this practice. When material had to be sent off quickly, for example, the

[164] For examples of articles documenting the results of the exploring expedition, see "Captain Sturt & Spencer's Gulph, Most important rumour", *Sydney Monitor,* 5 May 1830; "Recent expedition of discovery", *The Colonist,* 22 October 1835; "The recent expedition of discovery", *The Colonist,* 29 October 1835; "Exploration of Australia", *Sydney Monitor*, 13 April 1836; "Captain Sturt's Expedition to Explore the Interior", *South Australian Register,* 2 April 1845; "Progress of Discovery in Australia", *The Inquirer,* 3 December 1845; "The progress of discovery in Western Australia", *The Maitland Mercury & Hunter River General Advertiser,* 10 January 1846; "South Australia. Return of Captain Sturt and party from perilous expedition", *The Observer,* 6 February 1846; "Return of Captain Sturt from the Expedition into the Northern Interior", *The Courier,* 11 February 1846.

[165] See, for example, "Captain Sturt's Expedition", *South Australian,* 20 June 1845; "Rivoli Bay", *South Australian Register;* "Progress of Discovery in Australia", *Inquirer,* 3 December 1845.

[166] "Explorations and surveys in Australia", *The Sydney Gazette,* 26 February 1831; "Australian geography. Private interior discovery", *The Sydney Gazette,* 18 April 1835; "A new river discovered", *The Perth Gazette and Western Australian Journal,* 14 May 1836; "Interior discovery", *The Sydney Gazette* 9 August 1836; "Interior of Australia", *South Australian Gazette and Colonial Register,* 4 August 1838; "Exploring Expedition Under Sir Thomas Mitchell", *New South Wales Government Gazette,* 7 December 1846; "Exploratory Expedition Under the Late Mr. Kennedy", *New South Wales Government Gazette,* 9 March 1849.

[167] The phrase is used by Daly, see Daly to Newcastle 25 October 1862 no. 61, f. 212, CO 13/110, TNA.

[168] Daly to Newcastle 25 October 1862 no. 61, f. 212, CO 13/110, TNA. Compare to Darling to Hay 17 February 1831 "Private", f. 414, CO 201/218, TNA; Bourke to Glenelg 12 October 1835 no. 101, ff. 423-424, CO 201/247, TNA; For similar examples see also, Fitzgerald to Grey 9 March 1849 no. 24, f. 231, CO 18/50, TNA; MacDonnell to Lytton 11 November 1858 no. 271, f. 446, CO 13/97, TNA; MacDonnell to Lytton 27 September 1861 no. 522, ff. 236-239, CO 13/106, TNA.

governors did not always have time to go through the documents in detail. In these circumstances, letters about expeditions that had already been undertaken and reports that had been received were included in dispatches without further commentary about their significance.[169]

The detailed level of Grey's analysis of Sturt's accounts examined before displays his interest in exploration and directs our attention to the more general questions regarding the ability of governors, their insightfulness and their interest in exploration and analysis of geographical information. Grey had some relatively recent experience in the field, as he had previously been part of an expedition that had explored Australia. He had led an ill-fated expedition in the north-west coast of Australia between 1837 and 1839, which had been funded by the British government.[170] The majority of governors in Australia, however, did not have a background in exploration. It is evident that alongside the needs of the colony, the governors personal interest played a part in determining their involvement in the field of geographical discovery. Many were experienced and mobile civil servants, who arrived in Australia with experience of working in different colonial contexts and environments. Similarly, many continued their careers with appointments in other colonies. With varied backgrounds, the motives behind why governors took appointments in the Australian colonies were multifaceted. Richard Bourke, for example, arrived in Sydney in 1831 having served in Malta and at Cape Colony. He had turned down an appointment in the Bahamas on account of his wife's health and chosen New South Wales instead.[171]

The different backgrounds of the governors affected their respective abilities and willingness to compose informative dispatches. Thus, the role of a governor as a mediator of information was not straightforward: he was a subject that could be controlled—"the metropolitan government's puppet" as Laidlaw put it—and simultaneously an independent actor in charge of an overseas colony.[172] As men on the spot, they were an indispensable source of information but also the embodiments of exercising power in the colonies. Therefore, it was important to wisely select those appointed. Hence, to ensure smooth relations with London nepotism was a factor in the selection process for these important governmental roles.[173] Alternatively, it was possible that independently-minded governors could become a serious problem. Moreover, it was not easy to dismiss incompetent or untrustworthy governors.[174] These were important facts that characterized the flow of information from the colonies to London, even though the position of the Australian colonies changed

[169] See, for example, Bourke to Glenelg 19 February 1838 no. 18, ff. 202-203, CO 201/260, TNA; Hindmarsh to Glenelg 7 April 1838 no. 84, ff. 215-219, CO 13/10, TNA; Young to Pakington 14 September 1852 no. 41, f. 121, CO 13/78, TNA; Young to Pakington 17 November 1852 no. 80, f. 299, CO 13/78, TNA.
[170] "Grey, Sir George (1812–1898)" 1966.
[171] King 1966.
[172] Laidlaw 2005, 61–62.
[173] Laidlaw 2005, 65.
[174] Burroughs 1999, 176–177.

when most gained self-government. Civil servants in London depended on the information sent by the governors, whilst the governors constantly had to seek a balance between their own ambitions and their need for approval from the imperial government.

The level of interest the governors attached to their respective territory is made explicit when they reported about their own tours and visits to different parts of the colony. In general, some governors were keener than others to examine first-hand the territory they oversaw.[175] This mattered a great deal when plans were made to cultivate new areas for agricultural or pastoral purposes, or when arguing for the need to undertake territorial expansion.[176] Gaining personal experience of the localities described by explorers was an important factor for governors, who wanted to be able to report "more fully" about the resources and discoveries that had been made to the secretary of state. However, government business often prohibited the governors from conducting these visits after discoveries had initially been made.[177] In 1850, for example, governor Charles Fitzgerald (1791–1887) thought it right to visit the area around Sharks Bay in the north in order to "confirm from personal observations the correctness" of the reports given and to judge whether "Mr. [Augustus C.] Gregory might not have overrated the advantage of the discoveries" he had reported concerning desirable pastoral land.[178] Consequently, the reporting of tours was a further means to enforce particular conclusions about the results of expeditions and the geography of the colonies. Thus, they were effective in forwarding systematic information about a particular region. Fitzgerald regarded the personal inspection of the tracts of land to be important in order to be able to fully promote the colony of Western Australia as a location for migration and settlement, and thus to make migration to South Australia less appealing.

The processing of available geographical knowledge facilitated the composition of logical new plans for exploration and the expansion of settlements. This information was usually seen as a motive to further explore the continent. With this in mind, efforts to explore the interior continued well into the 1860s. The quality of the data that derived from such exploration altered as the methods used to gain it changed. The mystery surrounding the interior of the continent continued throughout the era being examined in this study. Hence, there was a constant demand for new explorations during this time period. The likelihood of further useful and profitable discoveries, in the form of new pastoral opportunities, min-

175 King 1966.
176 See, for example, the following dispatches, with accounts of these tours and visits: Stirling to Gleneld 19 December 1835 no. 85, ff. 431-440, CO 18/15, TNA; MacDonnell to Labouchere 23 October 1856 no. 14, ff. 494-496, CO 13/93, TNA; Fitzgerald to Grey 1 May 1851 no. 73, ff. 170–202, CO 18/66, TNA; Kennedy to Labouchere 13 November 1857 no. 123, ff. 36–42, CO 18/101, TNA; MacDonnell to Labouchere 11 May 1858 no 233, ff. 182–185, CO 13/97, TNA; Kennedy to Newcastle 15 November 1859 no. 124, ff. 403-404, CO 18/109, TNA.
177 See, for example, Fitzgerald to Grey 16 July 1850 no. 44, f. 129, CO 18/54, TNA; MacDonnell to Labouchere 11 May 1858 no. 233, ff. 182–185, CO 13/97, TNA.
178 Fitzgerald to Grey 9 October 1850 no. 82, f. 73, CO 18/55, TNA.

eralogical wealth and the opening up of significant infrastructural possibilities, were important driving forces behind the decisions made by governors. As governors explained their plans, they often pointed out how they were based on previous information that had been gained. Indeed, they usually explained that prior data gave them reason to believe that further expeditions would be profitable.[179]

After the Central Australian Expedition, led by Sturt, revealed the interior to be what governor Frederic H. Robe (1802–1871) referred to as a "worthless habitation for man or beast", he still argued that further exploration was needed. In Robe's view, future explorations would reveal the character of the area in more detail.[180] Primary explorations in a particular area did indeed create a basis to argue for the need to execute geological surveys in order to accurately define the character of the land. After Sturt's expedition, for example, Robe directed his attention to gaining more information about the mineral wealth of the colony by employing the deputy surveyor-general Thomas Burr (1814-1866) in a geological survey of the country in the late 1840s. This endeavor did not proceed as speedily as Robe hoped, partly as a result of a lack of competent staff. On many occasions, he and his successors had to plead to the secretary of state in London to send out expert personnel from Britain.[181]

The plans that were discussed and the basis of their execution makes clear how the governors formed their own conceptualizations of the geographical possibilities of the continent. This becomes evident if we examine a series of opinions expressed by George Gipps (1791–1847), the governor of New South Wales, regarding the practicability of organizing expeditions to the interior in the 1840s. Gipps, who had been appointed the governor of the colony in 1837, noted in 1840 that no further expeditions to the interior were necessary based on what was already known. In Gipps' view the poor results of Major Mitchell's expeditions of 1835 and 1836 gave no reason to send out more expeditions or entertain visions about finding useful waterways close enough to ensure the profitable development of settlements.[182]

However, many did not share Gipps's ideas. Thus, in 1843 Gipps agreed to transmit an expedition plan composed by the Legislative Council of the colony. The council had examined the possibility of organizing an expedition in order to establish a route from Sydney to Port Essington. The construction of such a route would connect the northern colony to the

[179] For suggestions about areas to explore, see, for example, Bourke to Glenelg 15 March 1836 no. 36, ff. 543-546, CO 201/252, TNA; Robe to Gladstone 11 June 1846 no 68, ff. 245-257, CO 13/49, TNA; Fitzroy to Grey 18 March 1848 no. 62, ff. 109-112, CO 201/ 396, TNA; Young to Pakington 13 September 1852 no. 38, f. 110, CO 13/78, TNA; Fitzgerald to Pakington 6 January 1853 no. 6, ff. 36-36, CO 18/72, TNA; Kennedy to Stanley 13 August 1858 no. 100, f. 170, CO 18/106, TNA; MacDonnell to Lytton 18 April 1859 no. 312, ff. 221-224, CO 13/99, TNA.

[180] Robe to Gladstone 11 June 1846 no. 68, ff. 245–257, CO 13/49, TNA.

[181] For further details about this discussion, see, for example the following dispatches, Robe to Grey 28th April 1847 no. 44, CO 13/53; Robe to Earl Grey 15 January 1848 no. 5, CO 13/58, TNA; Young to Grey 13 January 1851 no. 13, CO 13/72, TNA.

[182] Gipps to Russell 28 September 1840 no. 139, f. 164, CO 201/299, TNA.

southern parts of the continent and open up the possibility of trade between Asia and Sydney. The report that Gipps enclosed with his dispatch contained information about the statements of particular individuals that had been interviewed in order to determine whether organizing such an expedition was practical. The persons interviewed included surveyor-seneral Thomas Mitchell, the naturalist and a longtime resident of Port Essington, George Windsor Earle (1813–1865), Earle's servant Shadrach Phillippus and Thomas Braidwood Wilson. In addition, the report included numerous extracts from different textual sources. The goal of the project was visualized in a map that was inserted into the report: on this map Australia is tightly connected to Asia with a direct route running across the continent from Sydney to Port Essington.[183]

Commenting on the plan, governor Gipps noted that the positive statements from these trustworthy and experienced men, such as Mitchell, made the project worthy of consideration. Furthermore, he noted that in general he thought that such an expedition was desirable. However, he regarded the current plan to be hazardous and in his personal opinion the chances of executing the expedition successfully were slim:

> Indeed looking at the results of the attempts already made – and especially from South Australia – to penetrate into the interior of New Holland, I must confess that I could entertain but very slender hopes of the success of an attempt by a direct route, and still less of the opening of a communication which should be of practical utility to the Colony.[184]

Consequently, Gipps made clear the different ideas about the practicability of executing an overland expedition. The Legislative Council had concluded that the plan was practicable and it was also favored by Mitchell among others. Furthermore, he had already received communications from Sturt and Eyre expressing their interest in organizing an expedition that would move towards Port Essington along the coast in three phases. Nevertheless, Gipps thought that the risks were too high to execute such a vast and expensive project.[185]

The plan was read in comparison to one being prepared by Sturt in South Australia at the Colonial Office. It was noted that Gipps was at liberty to organize the expedition whenever he thought the colony could afford to finance such an undertaking. Hence, the civil servants in London were evidently not interested in funding the proposed expedition from imperial funds. Regarding the most desirable route, Gipps was advised that the secretary of state did not wish to "interfere with the judgement which may be formed on the spot with the aid of more accurate knowledge and information". The secretary of state did note,

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[183] Gipps to Stanley 7 December 1843 no. 203, ff. 239–243, CO 201/336, TNA; "Report from the Select on the Proposed Overland Route to Port Essington with Appendix and Minutes of Evidence" in Gipps to Stanley 7 December 1843 no. 203, ff. 246-257, CO 201/336, TNA. For a similar example, see the explanations given by Fitzgerald for the forming of Robert Austin's expedition in Western Australia in 1855. In Fitzgerald to Grey 20 July 1855 no. 80, ff. 250-254, CO 18/88, TNA.

[184] Gipps to Stanley 7 December 1843 no. 203, f. 242, CO 201/336, TNA.

[185] Gipps to Stanley 7 December 1843 no. 203, ff. 239–243, CO 201/336, TNA.

however, that the overland route appeared less appealing due to its hazardousness.[186] Gipps came to the conclusion that the risks attached to such an expedition were too high to implement the proposed plan by the Legislative Council. The execution of the expedition was postponed until December 1845 when Thomas Mitchell finally embarked on a journey towards the interior.[187]

These instances of planning and discussion are interesting as they reveal how different individuals voiced opinions and conjectured about the nature of the areas in Australia that were still unexamined. Indeed, in addition to referring to the information produced by government organs, it is apparent that many different pieces of information formed the basis for authorizing new expeditions of exploration or to argue for the likelihood of discovering good tracts of land. In 1831, for example, acting governor Patrick Lindesay (1778–1839) reported to London that he had decided to send Mitchell, the colony's surveyor-general, on an expedition to examine "that part of New South Wales, hitherto unexplored, which lies between the Rivers Castlereagh and Goydier". This order was based on information that had been received from an escaped convict named Barber. The goal of the expedition was to ascertain whether a large river flowing to the interior existed in that area as reported by Barber in 1830. Barber's account had "led to many interesting conjectures relative to the vast unexplored interior of New Holland". It was therefore decided that the organization of an expedition to explore this area was in order.[188]

Furthermore, the governors drew on their own knowledge to form theories and arguments about the geography of the continent. In 1858, for example, Richard MacDonnell, the governor of South Australia, noted that he had personally inspected the coast of the western district of the colony near the 132° longitude east and had spoken with the indigenous peoples of the area in order to evaluate the character of the land:

> The recent exploration of Mr. Hack and Mr. Miller together with the information afforded to them, and also to myself by the natives – render it highly probable, that behind the scrub lies a large tract of country available for pastoral purposes.[189]

In addition to revealing the different sources the governors referred to in their analyses, their interpretations of the knowledge they received can be read as examples of the hopes and visions they entertained. The explorations were conducted with a clear instrumental goal in mind: to search for fresh pastureland and minerals alongside the goal of increasing geographical knowledge. With this in mind, the way governors analyzed the information they received was affected by what they hoped it would signify. MacDonnell's eagerness

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[186] Draft to Gipps 12 May 1844 in Gipps to Stanley 7 December 1843 no. 203, ff. 244-245, CO 201/336, TNA.
[187] Mitchell 1848, 2–6.
[188] Lindesay to Goderich 23 November 1831 no. 7, ff. 331-334, CO 201/221, TNA. For a similar example, see Fitzgerald to Newcastle 17 October 1853 no. 101, ff. 96-102, CO 18/76, TNA.
[189] MacDonnell to Labouchere 11 May 1858 no. 233, f. 183, CO 13/97, TNA. For information on explorers' use of indigenous guides, see, for example, Kennedy 2013, 158–94. 2014a, 11–12.

to promote the likely possibilities of the area near the western boundary of the colony he oversaw, for example, was connected to his expansionist agenda. He argued for the extension of the colony's boundary by three degrees to the west to coincide with the eastern boundary of Western Australia. On many occasions, the results of the expeditions were offered governors a reason to enhance their schemes of territorial expansion.[190]

Similarly, the way in which governors introduced new information from their respective colonies stemmed from the need to provide evidence to validate the logic of their decisions. This was particularly pertinent on occasions when they had made claims about the characteristics of the environment, which were subsequently used as a basis for administrative decisions. Thus, the governors eagerly noted if new information received from an expedition confirmed the observations they had previously made regarding such issues as the navigability of a river or if new research confirmed their interpretation of the results of an expedition. When governor Fitzroy in1847 reported to London about the results of the expeditions that had been organized to examine the north-east coast near Port Curtis, with the view of finding a site for a new settlement, he reasoned that his observations had not been "ill founded" regarding the abundance of water in the area. He was therefore pleased to argue for the suitability of the area for settlement. On this occasion, it is striking how civil servants in London took note of Fitzroy's reasoning. At the Colonial Office, Thomas F. Elliot observed that it seemed that Fitzroy was now explaining why he had urged the selection of the site for settlement on the northern coast, even though colonel George Barney (1792–1862), who had also examined the coast, had reported that no permanent water source existed. The results of the expedition, as Fitzroy pointed out, made it clear that there was no need for regrets.[191]

These instances stand out as examples of what was contained in the daily knowledge work in the Australian colonies; namely, gathering information from many sources and thereafter forming opinions based on this data. It is apparent that many people were involved in these processes, including indigenous people, convicts and newspaper journalists, alongside explorers and surveyors. All these small nodes in the processes of knowledge work mattered to varying degrees. These types of actors "in-between" functioned as knowledge-brokers, who were all part of the collective and complex processes of exploration, surveying and making of geographical knowledge.[192] Governors also functioned as knowledge-brokers and were an essential part of the processes of analysis and gathering of information. They served as mediators of knowledge, whose task it was to

[190] MacDonnell to Labouchere 11 May 1858 no. 233, ff. 182-185, CO 13/97, TNA. This was particularly true in South Australia, but also in Queensland and Western Australia. See, for example, Kennedy 2013, 103-109.
[191] Minute by Elliot 8 March 1848 in Fitzroy to Grey 30 September 1847 no. 192, ff. 221-222, CO 201/384, TNA. The draft letter to Fitzroy and the minute by Grey further elaborate on this point. See, for example, a minute by Grey 13 March 1848 in Fitzroy to Grey 30 September 1847 no. 192, f. 222, CO 201/384, TNA; draft to Fitzroy 18 March 1848 in 30 September 1847 no. 192, ff. 223-225, CO 201/384, TNA.
[192] See, for example, Raj 2007, 19–22, 30; Schaffer et al. 2009, ix–xxxviii; Shellam et al. 2016.

select the data that was transmitted to London. However, as the instance of governor Fitzroy demonstrates, the conclusions that the governors made in their dispatches were subject to close scrutiny at the Colonial Office in London. In general, the significance of available geographical information was subject to interpretation, as the analysis of the governors has demonstrated. Consequently, it is necessary to examine in more detail how the understanding of the geographical knowledge that was communicated from the Australian colonies altered once it travelled across the oceans.

Reading and Taking Minutes at the Colonial Office

As noted, staff at the Colonial Office commented on the conclusions of colonial governors. These comments bring to light the further stages in the knowledge-work process that occurred at the government offices in London. When the civil servants read the conclusions and interpretations of the colonial governors, they evaluated their credibility and significance and formed their own opinion about the developments that had taken place and the significance of the discoveries that had been made. As they read the papers, which arrived in bundles, the civil servants commented on different aspects of the knowledge they had received. These comments reveal what caught their attention when dealing with accounts of exploration, discoveries and the progress of surveys.

Annotations in the margins and minutes on the back of letters demonstrate that the civil servants harbored doubts about the veracity of certain details. These annotations also indicate when civil servants were more appreciative and interested in certain facts relating to the matter at hand. The markings and minutes also reveal the occasions when the civil servants needed to consult other material, such as previous dispatches or maps, that had already been filed.[193] Upon reading governor Darling's description of the results of Charles Sturt's expedition of 1829, which was undertaken to examine the course and termination of the Murrumbidgee, for example, someone at the Colonial Office wrote two pointed questions in the margin: "How is this proven? Was it salt?" The questions related to the

[193] For examples of these instances see, for example, the annotation in Darling to Murray 14 February 1829 no. 25, f. 399, CO 201/200, TNA; Minute by Hawes 24 October 1846 in Robe to Grey 11 June 1846 no. 68, f. 259, CO 13/49, TNA; Minute by Grey 27 October 1846 in Robe to Grey 11 June 1846 no. 68, f. 259, CO 13/49, TNA; Minute by Stephen 17 May 1847 in Fitzroy to Grey 2 Jan 1847 no. 3, f. 21, CO 201/379, TNA; Minute by Grey 28 May 1847 in Fitzroy to Grey 2 Jan 1847 no. 3, f. 21, CO 201/379, TNA; Fitzgerald to Grey 22 December 1848 no. 34, ff. 397-416, CO 18/48, TNA; Minute by Gairdner 27 May 1851 in Young to Grey 8 February 1851 no. 25, f. 236, CO 13/72, TNA; Minute by Gairdner 26 September 1857 in MacDonnell to Labouchere 11 July 1857 no. 172, ff. 304-305, CO 13/95, TNA; Minute by Merivale 28 September 1857 in MacDonnell to Labouchere 11 July 1857 no. 172, f. 305, CO 13/95, TNA; Minute by Lytton 29 September 1857 in MacDonnell to Labouchere 11 July 1857 no. 172, f. 305, CO 13/95, TNA; Annotations in Bowen to Newcastle 10 July 1859 no. 54, ff. 570, 575, CO 234/1, TNA; Bowen to Newcastle 30 September 1860 no. 79, ff. 87, 88, 92, 95, 96, 98-104, CO 234/2, TNA; Bowen to Newcastle 8 December 1860 no. 92, ff. 409-412, CO 234/2, TNA; Bowen to Newcastle 14 March 1861 no. 16, ff. 112-116, CO 234/3, TNA.

claim made in the dispatch that the River Darling was the third such waterway that Sturt had discovered during his travels.[194]

Going through the geographical data that arrived at the Colonial Office was a multifaceted process. The increasing volume of work made it impossible for the secretary of state to handle all issues personally. This led to a delegation of tasks to members of his permanent staff, thereby enhancing the status of civil servants vis-à-vis the decision-making process. Two aspects especially affected the role of the civil servants: in the first decade of the nineteenth century, permanent offices had been established at the Colonial Office. Thus, individuals with expertise on colonial affairs remained in situ even when secretaries of state changed. As Eddy states: "The age of the expert had arrived".[195] This was a transnational phenomenon in Europe, whereby "rational bureaucracies" established themselves as the ideal for administrations. The execution of bureaucracy in practice was not uniform: states differed in the type of people they employed, as well in terms of the levels of hierarchy and authority and so on.[196] This expansion in state bureaucracy ensured that the overall amount of state employees grew exponentially during the nineteenth century in Britain and across Europe.[197]

Consequently, a system developed whereby particular individuals specialized in specific colonial problems and participated in trying to resolve related problems. The second important aspect affecting the position of civil servants further strengthened this trend: geographical divisions were created in order to manage the data that was received from different parts of the world. From 1825 four different geographical divisions—the North American, West Indian, Australian (from 1828 the Eastern Department) and African and Mediterranean Departments—existed in order to manage the responsibilities relating to the different dependencies. These departments had internal arrangements regarding the division of work. As already noted, Gordon Gairdner was the clerk responsible for the Australian colonies.[198] Thus, members of the permanent staff were able to acquire an important foothold in the required administrative tasks and could accumulate a solid know-how vis-à-vis specific colonies. They were the employees who enjoyed years of service related to colonial affairs. Indeed, some were thought of as playing an indispensable role in the government.[199]

The knowledge-work of different individuals at the Colonial Office—the civil servants and the secretary of state—is discernible in the system of minuting that was used in the

[194] Annotation in Darling to Goderich 14 April 1829 no. 38, f. 463, CO 201/219, TNA.
[195] Young 1961, 1–4; Snelling and Barron 1972, 141–43.
[196] Osterhammel 2014, 606–7.
[197] Buzan & Lawson document that during the second half of the nineteenth century the state employees rose from 67,000 to 535,000 in Britain. Buzan and Lawson 2013, 628.
[198] Banton 2008, 35–36. See also Young 1961, 54-55. For Gairdner's history of employment at the Colonial Office see Sainty 1976, 12-17.
[199] Young 1961, 1-4; Barron & Snelling 1972, 141-143.

government department. Multiple people participated in the decision-making processes and thus it was necessary to maintain a record of these decisions. Initially, this consisted of an attempt to preserve all minutes that were written and to summarize interviews with the secretaries of state. In order to record all information relating to decision-making, James Stephen introduced a permanent system of minuting. Furthermore, the functioning of the office required a central register, which was established in the middle of the nineteenth century. The use of minutes gradually developed into a system that used official minute sheets from the late 1860s.[200] Many scholars have emphasized the role of Stephen in these reforms, but, as Zöe Laidlaw notes, the changes he introduced to the overall management of colonial business were preceded by Wilmot Horton's (1784–1841) initiative of writing a précis for each piece of incoming correspondence. Moreover, Robert Hay proposed reform ideas for the better management of records prior to Stephen's introduction of a central register.[201]

Much depended on the expertise and interests of the civil servants within this system of delegation and minuting. Consequently, the extent to which they were able to comment on particular issues varied.[202] In some cases the role of the secretary of state was diminished to that of a mere signatory on draft replies that had been formulated by members of the permanent staff. In Mandy Banton's view, this meant that the circulation of documents became more efficient as senior officials did not have to attend to every matter. However, this practice had the possible disadvantage of limiting the circulation of information about developments that were taking place.[203] Thus, in practice, this marked a change in the position and duties of civil servants. During the 1820s, the permanent members of staff became structurally engaged in the performance of intellectual duties. By mid-century they had established themselves as a significant part of the administrative system.[204]

The extent to which tasks were delegated depended on particular issues, as well as the individuals employed at the office at different times. Talented individuals could acquire influential positions.[205] Consequently, Stephen, who was assistant under-secretary between 1834 and 1836, after which he was promoted to permanent under-secretary until his retirement in 1848, could create an important footing for himself in the decision-making processes. In a similar fashion, his successors—Henry Merivale from 1848 to 1860 and Frederick Rogers (1811–1899) from 1860 until 1871 —worked at the Colonial Office for a long period

[200] Young 1961, 57; Laidlaw 2005, 50; Banton 2008, 67.
[201] Laidlaw 2005, 50.
[202] Banton 2008, 54, 64, 67.
[203] Young 1961, 94; Banton 2008, 67.
[204] Young 1961, 5, 123.
[205] Snelling and Barron 1972, 139–49.

and gained solid expertise in colonial matters.[206] For the governors in the colonies, the men who held permanent positions, such as Hay, Stephen, and Merivale, offered consistency in policy. This was especially the case at times when the secretaries of state frequently changed.[207]

The decisions that were made after reading the data from the expeditions and the information provided by the governors varied from conclusive to doubtful and from hopeful to pessimistic. In general, the comments that were made clearly sought to draw a definitive conclusion from the information that had been received. After reading an extract of Edward John Eyre's (1815–1901) account of his overland expedition from Adelaide to King George's Sound, for example, James Stephen concluded that this small portion of the account proved that the route was impracticable and therefore was merely a useless discovery.[208] Similarly, a year later, when reading a report on Eyre's work with the Murray natives, Stephen noted that it chiefly showed the barren nature of the interior.[209] At times the material that was received added "very little to what is already known".[210] However, on other occasions the letters left the civil servants yearning for more information. In 1855, for example, Henry Merivale noted that the report by the botanist Ferdinand Mueller (1825–1896) of his journey to the Australian Alps was good, but he added "I wish he had told us something about the hydrography of the range".[211]

The minutes that were written also demonstrate how important it was for the civil servants to receive the information in an accessible form. The civil servants did not hesitate to note if the style or the contents of a dispatch did not meet their expectations. The annotations make clear, for example, how civil servants disliked sentences that were too long as they found it difficult to follow explanations of local matters. The absence of an accompanying commentary upon the material that had been forwarded also made it difficult for the civil servants to judge the significance of the data. Furthermore, the civil servants were

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[206] Merivale started his career at the office as assistant under-secretary in 1847 and was promoted to permanent under-secretary in 1848. In 1860, he moved to The India Office to work as the permanent under-secretary. Rogers worked as the assistant under-secretary between 1846-1847. After a period away he returned in 1860. See Sainty 1976, 5, 10–11, 45, 47.

[207] McCulloch 1966.

[208] Minute by Stephen in Grey to Russell 3 September 1841 no. 26, f. 22, CO 13/21, TNA. For similar conclusions, which were based on the governors' reports, see, for example, the minute by Gairdner 6 March 1848 in Fitzroy to Grey 30 September 1847 no. 4, f. 220, CO 201/384, TNA; Minute by Gairdner 31 October 1855 in Fitzgerald to Grey 20 July 1855 no. 80, f. 254, CO 18/88, TNA; a minute by Elliot 5 November 1855 in Fitzgerald to Grey 20 July 1855 no 80, f. 255, CO 18/88, TNA; a minute by Merivale 3 January 1856 in Gregory to the Secretary of State 24 September 1855, f. 153, CO 201/497, TNA; Minute by Dealtry 15 October 1856 in Gregory to the Secretary of State 20 June 1856, ff. 171-174, CO 201/497; a minute by Merivale 15 October 1856 in Gregory to the Secretary of State 20 June 1856, f. 175, CO 201/497.

[209] A minute by Stephen in Grey to Russell 19 March 1842 no. 29, f. 85, CO 13/25, TNA.

[210] See, for example, the minute by Stephen 26 November 1840 in Gipps to Russell 16 July 1840 Separate, f. 95, CO 201/298, TNA. For similar instances, see Bowen to Newcastle 10 February 1859 no. 21, ff. 164–169, CO 234/1, TNA; Minute by Gairdner 27 October 1848 in Irwin to Grey 5 June 1848 no. 25, f. 432, CO 18/47, TNA.

[211] Annotation my Merivale 12 May 1855 in Hotham to Grey 31 January 1855 no. 22, f. 200, CO 309/31.

not afraid to make annotations if the reports had been composed in what they perceived to be an incorrect manner.[212]

Furthermore, the civil servants noted if they considered it worth their superior examining the enclosures in detail, or if an account was generally interesting. In 1861, for example, assistant clerk William Dealtry read through Stuart's journal from his second attempt to cross the continent and noted to under-secretary of state Frederick Rogers that "his journal is scarcely worth your perusal as there is a great sameness in it & very little to command interest".[213] In contrast, James Stephen noted to Benjamin Hawes, the parliamentary under secretary, in 1847 that the accounts relating to Thomas Mitchell's discoveries in 1846 were very interesting.[214] Summarizing the content of the material that had been received was therefore a matter of efficiency and the minutes were used as a means of directing the next person who would examine the material.

The civil servants not only pointed out the significance of the information they received, but also revealed the type of data they considered the most valuable: discoveries of good pastureland, as well as notable progress in the field in general were always greeted with great interest.[215] However, the extent of interest attached to the information depended on the style and extent of writing, as well as the objects of observation and the discoveries that had been made. In 1858, for example, Gairdner compared the narratives he had received when reading through the respective accounts from South Australia on the recent explorations in the north of the colony by Charles Babbage (1815–1878) and Peter E. Warburton (1813–1889). In his view Babbage was not informative at all: "His mind seems to have been filled with details and his attention absorbed by the ordinary difficulties with

[212] See, for example, the minute by Stephen 5 April 1842 in Gipps to Stanley 13 September 1841 no. 176, f. 94, CO 201/311, TNA; Draft to Gipps 31 May 1842 in Gipps to Stanley 22 Dec 1841 no. 235, ff. 539-540, CO 201/312, TNA; Annotations in Gipps to Stanley 22 Dec 1841 no. 235, f. 541, CO 201/312, TNA; Gipps to Stanley 12 January 1845 no. 11, f. 159, CO 201/355, TNA; Draft to Gipps 12 June 1845 in Gipps to Stanley 12 January 1845 no. 11, ff. 160-161, CO 201/355, TNA; Minute by Elliot 15 May 1855 in Hotham to Grey 1 February 1855 no. 23, ff. 210-211, CO 309/31, TNA; Minute by Merivale 22 May 1855 in Hotham to Grey 1 February 1855 no. 23, f. 211, CO 309/31, TNA; Minute by Gairdner 19 December 1857 in Barkly to Labouchere 8 October 1857 Confidential, f. 210, CO 309/43, TNA.

[213] A minute by Dealtry 20 November 1861 in MacDonnell to Lytton 27 September 1861 no. 523, ff. 244–245, CO 13/106, TNA. For a similar instance that guided the reading of the papers, see, for example, the minute by Gairdner 17 March 1860 in MacDonnell to Newcastle 10 January 1860 no. 360, ff. 7-8, CO 13/102, TNA. In a similar manner, the civil servants noted if they did not consider the other material to be interesting. See, for example, the minute by [presumably] Gairdner 10 May 1843 in Grey to Stanley 5 January 1843 no. 13, f. 27, CO 13/31, TNA.

[214] Minute by Stephen 17 May 1847 in Fitzroy to Grey 2 January 1847 no. 3, f. 21, CO 201/379, TNA. For similar examples, see Minute by Stephen 21 October 1843 in Robe to Gladstone 11 June 1843 no. 68, f. 259, CO 13/49, TNA; Minute by Hawes 24 October 1843 in Robe to Gladstone 11 June 1843 no. 68, f. 259, CO 13/49, TNA; a minute by Merivale 6 February 1854 in Young to Newcastle 15 October 1853 no. 54, f. 151, CO 13/82, TNA.

[215] See, for example, the annotations in Fitzroy to Grey 2 January 1847 no. 3, f. 21, CO 201/379, TNA; Minute by Gairdner 14 January 1859 in MacDonnell to Lytton 11 November 1858 no. 271, ff. 453–454, CO 13/97, TNA; Minute by Dealtry 22 October 1859 in MacDonnell to Lytton 14 August 1859 no. 338, f. 123, CO 13/100, TNA.

which every explorer is surrounded". However, Warburton had managed to write in an interesting manner, even though he had not made extensive discoveries.[216] On this occasion, it appears that what Gairdner hoped to receive most of all was more information. Hence, MacDonnell's own observations about the results, which suggested that no further conclusions should be drawn until they would arrive, provided more definitive information.[217]

The accounts commented on by Gairdner related to an expensive expedition organized by the South Australian administration to systematically explore the lands beyond the salt lakes in the north of the colony. It was hoped that such an expedition would locate good pastureland. Babbage's progress dismayed his patrons and caused distress in the colony. Consequently, Warburton had been sent to relieve Babbage of his command.[218] Later, Babbage, who thought he had been performing his duties well, petitioned against accusations targeted at him. His primary evidence came from the instructions he had been given. The conclusion of both the investigative body in Australia and of the civil servants in London was that the fault was as much with the local government and the instructions it had composed as it was with Babbage.[219]

In addition to explicitly pointing out the level of interest attached to the information contained in a particular dispatch or an account, the civil servants occasionally left no visible trace of what they thought of the material they received. Such cases are almost systematic in regard to documents that transmitted geographical knowledge via tabular reporting. As part of the general expansion in demand for the collection of information, geographical knowledge was also deemed worthy of observation. In 1827, the Colonial Office sent a circular to the West Coast of Africa, The Cape and the Eastern colonies to provide the Secretary of State with a half-yearly report on the advance of geographical and topographical knowledge.[220] Laidlaw notes that government officials valued documents, such as statistics and tables encompassing all the colonies of the British Empire, as they made data visible as an entity. "Structured observation" transformed the enormous amount of data regarding the colonies into an account that classified and thereby generalized what was being ruled.[221]

Western Australia was the only colony that actively used tables to report on progress in geographical and topographical knowledge within its territory, as requested by the Colonial Office. The tables were prepared under the supervision of John Septimus Roe (1797-1898), who was the surveyor-general of the colony from its establishment in 1829 until

[216] Annotation by Gairdner in 23 November 1858 in MacDonnell to Lytton 11 September 1858 no. 263, f. 393, CO 13/97, TNA.
[217] Annotation by Gairdner in 23 November 1858 in MacDonnell to Lytton 11 September 1858 no. 263, f. 393, CO 13/97, TNA.
[218] Kennedy 2013, 95-98.
[219] See the following dispatches with their enclosures: MacDonnell to Lytton 11 November 1858 no. 271, ff. 444-466, CO 13/97, TNA; MacDonnell to Lytton 11 December 1858 no. 281, ff. 509-529, CO 13/97, TNA; MacDonnell to Lytton 1 June 1859 no. 323, ff. 317-354, CO 13/99, TNA.
[220] Young 1961, 141; Laidlaw 2005, 172.
[221] Laidlaw 2005, 188.

1872. Roe tended to forward these tables with official returns for land that had been surveyed and sold, as well as documents outlining the progress of individual surveyors. Roe delivered the foolscap-sized tables to the colonial secretary every six months, starting in 1838. He continued to do this throughout the time he served as surveyor-general. The tables classified the different aspects of surveying that were undertaken in the colony. They displayed the progress that had been achieved in the division of counties or districts, the construction of infrastructure and in accumulating knowledge about the physical geography of the territory. The tables were prepared at the Survey Office by selecting and extracting information from the abundance of data. Hence, they serve as examples of how simplified information from the field was relayed to government offices.[222]

It seems the tables were not extensively used, judging by their appearance and the volume of annotations by the civil servants. Governors rarely referred to them. Indeed, the tables were simply introduced as enclosures to dispatches.[223] Similarly, the civil servants in London seldom left any comments on the tables, or simply noted that the information received was of minimal value.[224] The tables were sometimes forwarded to the Land Board, alongside other returns relating to land issues, or sent to the Royal Geographical Society for examination. However, it appears the usual option was to keep them at the Colonial Office.[225]

With minimal traces left on extant tables, it is very difficult to determine how the civil servants read these documents. It can be argued that the "silences" reveal the information in the tables that were transmitted did not generally provoke much discussion or reaction. This corresponds with Laidlaw's observation about the use of the statistical data that was collected in London: the civil servants did not use a majority of the information that the Blue Books contained. The books were not used, for example, to make comparisons between the colonies in either London or in Australia. This demonstrates that despite the great effort to collect data, the Colonial Office did not have "the technical capacity nor the personnel to implement comparative analysis whether between the colonies, with Britain,

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[222] See, for example, "Progress of the Colony of Western Australia in Geographical and Topographical Knowledge during the half year ending in 30 June 1838" 21 June 1838 in Stirling to Glenelg 2 September 1838 no. 30, f. 201, CO 18/20, TNA; "Progress [...] during the half year ending in 31 Dec 1838" in Hutt to Glenelg 14 February 1839 no. 24, f. 121, CO 18/22, TNA; "Progress [...] during the half year ending 30th June 1841" in Hutt to Russell 15 July 1841 no. 52, f. 100, CO 18/18, TNA; "Progress [...] during the half year ending in 31 December 1842" in Hutt to Russell 31 August 1843 no. 49, f. 94, CO 18/35, TNA; "Progress [...] during the half year ending in June 30 1843" in Hutt to Russell 31 August 1843 no. 50, f. 113, CO 18/35, TNA; "Progress [...] during the half year ending in 31st December 1850" in Fitzgerald to Grey 25 March 1850 no. 36, CO 18/59, TNA; "Progress [...] during the half year ending in 30th June 1852" in Fitzgerald to Pakington 11 August 1852 no. 116, f. 231, CO 18/67, TNA.

[223] See, for example, the dispatches documented in the previous footnote in regard to the transmission of the tables.

[224] Minute by Stephen 15 September 1842 in Hutt to Russell 11 March 1842 no. 15, CO 18/31.

[225] See, for example, Minute by Stephen 13 October 1840 in in Hutt to Marquis of Normandy 29 April 1840 no. 19, f. 79, CO 18/25, TNA; Minute by Stephen 15 September 1842 in Hutt to Russell 11 March 1842 no. 15, CO 18/31; Minute by Gairdner 30 October 1855 and annotation by Elliot 31 October 1855 in Fitzgerald to Grey 19 July 1855 no. 79, f. 234, CO 18/88, TNA.

or even over time".[226] However, it appears that private individuals could take up the task and compile publications containing comparative data about the Australian colonies.[227]

When reading the documents from the Australian colonies, the civil servants constantly evaluated the claims that were made about different aspects of Australia. The annotations they made highlight the expertise that some of the civil servants had acquired in order to judge the scientific aspects contained in the dispatches. Herman Merivale, for example, was an expert in evaluating the hydrography of the continent. In 1857, he offered a cautious appraisal of a report about the discovery of a fresh water lake by George Goyder (1826–1898) in South Australia, which had led governor MacDonnell to speculate on the existence of an inland sea. Merivale noted: "in a region where rainfall is so much in schemes [...] fresh water may collect and remain for a long period without being really permanent".[228]

A new expedition was undertaken in the area and the results demonstrated that the "permanent water" had dried up. A few months later MacDonnell reported to London that captain Arthur Freeling (1820–1885) had encountered only sterile and swampy land. However, subsequent observations of the country by Stephen Hack offered reason to hope that some good pastureland could be developed.[229] Consequently, Gairdner noted that even though Goyder's observations on Lake Torrens were refuted, the rather surprising prospect of good pastoral land should be acted upon.[230] Draft letters make explicit how Freeling's observations were incorporated in order to account for Goyder's previous erroneous understanding of the area. The civil servants in London referred to Freeling's expedition as one that had been undertaken to ascertain "the navigable extent of the large lake of fresh water at one time supposed to have been seen by Mr. Goyder".[231]

Thus, the amount of knowledge about a certain locality mattered a great deal in terms of the civil servants' abilities to comment on the matter at hand. Regarding the interior of Australia, many disappointments had been already encountered by the late 1850s. Thus, Merivale's doubts about the veracity of Goyder's observations are understandable. The general attitude of the civil servants is summarized in Gordon Gairdner's minute, which refers to the resources of Dirk Hartog's Island, just off the coast of Western Australia. Regarding dispatches reporting new discoveries and their significance: "The discovery is important if it serves to realize the anticipations formed".[232]

[226] Laidlaw 2005, 173.

[227] Such work was performed by the likes of Robert Montgomery Martin, who compiled information from the Blue Books and other statistical documents at the Colonial Office in the 1830s and 1840s. See Martin 1839; Martin 1843.

[228] Annotation by Merivale 28 September 1857 in MacDonnell to Labouchere 11 July 1857 no. 112, f. 305, CO 13/95, TNA.

[229] MacDonnell to Labouchere 4 October 1857 no. 184, ff. 2–5, CO 13/96, TNA.

[230] Annotation by Gairdner in MacDonnell to Labouchere 4 October 1857 no. 184, ff. 5-6, CO 13/96, TNA.

[231] Draft to the Secretary of the RGS 8 January 1858 in MacDonnell to Labouchere 6 October 1857 no. 184, f. 8, CO 13/95, TNA. Also see the draft to MacDonnell 6 January 1858 in MacDonnell to Labouchere 6 October 1857 no. 184, f. 9, CO 13/96, TNA.

[232] Annotation by Gairdner 22 November 1850 in Fitzgerald to Grey 16 July 1850 no. 44, f. 129, CO 18/54, TNA.

Just as the amount of data available at a particular moment affected the way the governors reflected upon the significance of exploring expeditions, so the type of information and the material received at the Colonial Office influenced the way that civil servants drew conclusions. A particularly illustrative instance dates from July 1859, when governor MacDonnell transmitted preliminary results relating to John McDouall Stuart's latest expedition into the interior. Stuart embarked on his expedition in April 1859, after he received funded from James Chambers, in April 1859 in order to examine how far inland the useful tracts of land he had discovered the previous fall extended.[233] MacDonnell gained details about the results of the expedition through a quick discussion with Stuart. A dispatch had been composed speedily at Government House in order to be communicated to London on board the next ship. Stuart hadn't finished his journals or maps yet and therefore they could not be forwarded. Furthermore, Stuart was liable to Chambers, the financer of his expedition., not the local government. Consequently, the results of the expedition had to be communicated in reference to what MacDonnell had heard from Stuart and with a couple of newspaper articles published in South Australia. In his dispatch, MacDonnell reported about important discoveries, the most important being the new knowledge about the character of the country.

> The most important intelligence is the undoubted fact that the country he traversed improved as he proceeded being formed of alluvial soil and diversified both numerous small hills, varying from one hundred to one hundred and fifty feet in height, from the summits of which copious springs of clear water overflowed – whilst there was abundant and excellent pasture in every direction.[234]

In addition to the observations about the improving character of the country, MacDonnell made a clear remark about how Stuart was convinced that a creek he encountered would flow into an inland sea or a lake. Two articles accompanied MacDonnell's dispatch from *The South Australian Register* and the *South Australian Advertiser*, published in July 18, 1859. These newspaper articles contained no accurate references to Stuart's journals or maps, which were in a state of preparation. Furthermore, in the other article it was noted that no further information could be communicated about the discoveries, as they (the journalists) were not allowed to do so.[235]

The discoveries reported at the Colonial Office were termed as "startling", but clear skepticism as to their veracity was expressed. Thomas F. Elliot noted that "a great deal depends in that country on the season at which a district is visited".[236] Henry Merivale agreed, and concluded "these are not the first, in the same quarter which have turned out

[233] Kennedy 2013, 105.
[234] MacDonnell to Lytton, 18 July 1859 no. 334, ff. 79-81, CO 13/100, TNA.
[235] "The South Australian Register, 18 July 1859" in MacDonnell to Lytton, 18 July 1859 no. 334, f. 85, CO 13/100, TNA; "The South Australian Advertiser, 18 July 1859" in MacDonnell to Lytton, 18 July 1859 no. 334, f. 86, CO 13/100, TNA.
[236] A minute by Gairdner in MacDonnell to Lytton, 18 July 1859 no. 334, f. 81, CO 13/100, TNA. For a similar example, see the annotations in MacDonnell to Labouchere 11 July 1857 no. 112, ff. 304-305, CO 13/95, TNA.

illusions".[237] Someone at the Colonial Office marked the point in an article in *The South Australian Register* in which Stuart's observations about the general character of the interior were outlined. The newspaper reported Stuart's idea about the existence of an inland lake or sea to the east of his route. This speculative assumption was based on the rivers he had encountered. The article discarded the old theory of the interior as a desolate desert. The journalist claimed that "at any rate the theory that the centre of New Holland is nothing but a desert may now be exploded".[238] The civil servants in London concluded that the dispatch had been written in a hurry, based on a short conversation with Stuart. Thus, they thought it would be better to wait for further details before doing anything with the information.[239] In other words, it was necessary to wait until the next dispatch was received a month later. The initial information could then be put into perspective. Based on an examination of Stuart's journal and map, MacDonnell had been able to draw more definite conclusions about his discoveries. In his view, it was apparent that the center of the continent was not a desert, as had been supposed. Thus, the civil servants in London could come to the same conclusion.[240] Consequently, the reading of MacDonnell's dispatch demonstrates how the form and amount of information that was received affected the way the civil servants evaluated what they read: drawing a more definitive conclusion about discoveries and about their veracity required further information.

The above example of the relaying of information regarding Stuart's expedition highlights an important aspect about how the civil servants in London determined the epistemological value of individual dispatches. The informative value of the dispatch was constructed in relation to the other sources of information. This becomes particularly evident on the occasions when the matters being dealt with required that the civil servants make a decision about the correct procedures to follow. It was vital to have all the necessary documents available. On the occasions when the governor furnished the civil servants with only a portion of the documents relating to the matter, definitive conclusions could not be drawn. For example, the printed documents and the copies or extracts of the journals, although interesting, did not contain information upon which decisions or comments could be based. In addition to the lack of full accounts, the absence of maps prepared in the colonies was a hindrance. Communications from the colonies were read together and acted

[237] Minute by Merivale in MacDonnell to Lytton, 18 July 1859 no. 334, f. 82, CO 13/100, TNA.
[238] "The South Australian Register 18 July 1859" in MacDonnell to Lytton, 18 July 1859 no 334, f. 85, CO 13/100, TNA.
[239] A minute by Gairdner in MacDonnell to Lytton, 18 July 1859 no. 334, ff. 81-82, CO 13/100, TNA; a minute by Newcastle 25 September 1859 in MacDonnell to Lytton, 18 July 1859 no. 334, f. 82, CO 13/100, TNA; Annotation in MacDonnell to Lytton, 18 July 1859 no. 334, f. 82, CO 13/100, TNA.
[240] MacDonnell to Lytton 17 August 1859 no. 338, ff. 115-121, CO 13/100, TNA; Minute by Dealtry 22 October 1859 in MacDonnell to Lytton 17 August 1859 no. 338, f. 123, CO 13/100, TNA; Annotations by Merivale 25 October 1859 and Newcastle 26 October 1859 in MacDonnell to Lytton 17 August 1859 no. 338, f. 123, CO 13/100, TNA.

upon only after the matter was understood to an appropriate extent. These points are evident from the instances when the civil servants deemed it appropriate to postpone a matter until the original and more extensive and detailed documents and maps arrived.[241]

Waiting for all the documents to arrive shows that the information at hand could be assessed in the form of annotations. However, comprehensive conclusions required that all aspects of the matter could be examined. This practice makes visible how at times the value of particular dispatches, or other documents, such as a map, was defined in relation to other available material. Consequently, their value within the administrative archive was varied. It also hints at the importance of devoting more attention to the reading of the enclosures that were sent from the colonies. Thus, in the next section I turn to discuss how maps, in particular, functioned as part of the processes of communication.

Viewed together, all these different reactions to the geographical information being relayed from the Australian colonies to Britain demonstrate how the civil servants actively participated in its analysis. As they read through the data they received, Stephen, Gairdner, Merivale and others aimed to determine what the information meant in relation to what was already known. Consequently, they embedded it with meanings that influenced their overall conceptualization of the Australian continent. As one peruses the minutes of the civil servants, from the late 1820s to the 1860s, it becomes evident that their image of the Australian environment becomes somewhat fixed: they start to anticipate what is likely to be discovered and the characteristics of the land. This affected their reading of the observations made: the civil servants started to note how the descriptions resembled previous ones. They analyzed the results in comparison to what was known about the continent as a whole. For example, when reading the results of Francis T. Gregory's (1821–1888) expedition in Western Australia in 1861, the junior clerk, Richard C. Hall, summarized its contents as follows:

> The account of the expedition itself is of very much the same nature as is found in all other narratives of Australian travel. There are the same sufferings experienced from want of water, the same travelling over dry and stony waster – and the same difficulties encountered in endeavouring to find passes across mountain barriers. […]
>
> Of course several botanical species unknown to this part of Australia have been met with. Among others Mr. Gregory mentions some beautiful palms growing on the banks of a river, which he has named the

[241] See, for example, the annotation by Stephen 8 June 1836 in Stirling to Glenelg 19 December 1835, f. 409, CO 18/15, TNA; Annotation by Stephen 8 June 1836 in Stirling to Glenelg 19 December 1835 no. 84, f. 440, CO 18/15, TNA; Annotations in Grey to Stanley 22 June 1844 no. 76, f. 105, CO 13/38, TNA; Annotation by Newcastle 25 September 1859 in MacDonnell to Newcastle 16 July 1859, f. 82, CO 13/100, TNA. In a similar manner, if documents went missing, the civil servants chose not to act on the matter before the necessary material could be gathered. For an example, see the discussion relating to the absence of exploration accounts relating to Charles Sturt's expedition, Minute s. d. in Darling to Goderich 9 June 1831 "Private", f. 75, CO 201/220, TNA.

> "Fortescue". This is the first instance, I believe, that palms have been found in the western side of Australia.[242]

The observation made by Hall was grounded in his overall understanding of the degree of interest in the accounts received from Australia. However, in spite of highlighting the unsurprising nature of the account, Hall also pointed out the existence of palm trees, which was a novelty in Western Australia. His detailed minute, which his colleagues appraised, touches on the expertise needed to be able to determine the typical from the untypical in the Australian environment.[243]

For Hall and the likes of Gordon Gairdner, the analysis of correspondence from the Australian colonies over the course of many years led to an increasingly informed image of the continent's geography. Gairdner, for example, utilized his knowledge of the continent when evaluating how interested the general public would be in accounts that had been received from the colonies. Thus, in the late 1850s, when reflecting on the material relating to the North Australian Expedition, Gairdner concluded that the public's appetite for things Australian had already been exhausted in the wake of the published accounts by Sturt and Mitchell. He therefore anticipated that Gregory's material would probably not be published as a separate travel account.[244] These decisions reveal important aspects of the mind-set that guided how civil servants in London read the geographical papers and how policies were enacted based on understandings of the characteristics of the land.

Snelling and Barrow note that the lack of knowledge about local details and a lack of expertise in a special field of knowledge affected the ability of the Colonial Office staff to make decisions or even give recommendations about pragmatic matters. For this reason, they argue that much work was characterized by hesitancy and inaction.[245] These points, about the decision-making processes at the Colonial Office, are rather unfruitful, when viewed in reference to the points I have made. Instead, they make visible the fact that these processes were dictated as much by the availability of the right materials as by being able to adequately interpret the data. The abilities of the civil servants to analyze and understand the Australian space was the result of the synthesis that they produced as they worked. These understandings may have been misinformed or incomplete. Nevertheless, the practices of communication connected the places of knowledge-work on the other

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242 Minute by Hall 25 January 1861 in Kennedy to Newcastle 25 November 1860 no. 109, ff. 206-207, CO 18/119, TNA. Gairdner made a similar summary about the results of Governor MacDonnell's personal tour to the northern parts of the colony in 1860. See the minute by Gairdner 17 March 1860 in MacDonnell to Newcastle 10 January 1860 no. 360, f. 7, CO 13/102, TNA.

243 Compare with the point made about accumulated expertise in Snelling and Barron 1972, 141.

244 See a minute by Gairdner 6 October 1857 in Denison to Labouchere 23 June 1857 no. 93, ff. 4-5, CO 201/499, TNA; A minute by Gairdner 21 January 1858 in Murchison to Labouchere 19 January 1858, ff. 16-17, CO 201/506. For example, Mitchell's *Journal of an Expedition into the Interior of Tropical Australia* had been published by Longman, Brown, Green and Longmans in 1848. According to Foster its reception was generally good, but it had suffered from the abundance of the other travel accounts that had been published at the time. See Foster 1985, 419–22.

245 Snelling and Barron 1972, 156–57.

sides of the globe and therefore constituted a system to analyze the different snippets of geographical data dispersed in the different types of material.

Maps of Australia on the Move

Colonial Developments Captured on Maps

As noted earlier, different types of enclosure—reports, accounts, statistics, newspaper cuttings, books, maps, and specimens—often accompanied dispatches. These varied forms of document had different roles in the process of knowledge-making. Newspapers, for example, provided additional information about events and developments that had taken place, whilst journals provided detailed first-hand information about activities and discoveries in the field. Letters that accompanied the dispatches documented the requests, arguments and wishes of expedition and survyeing parties. Maps served as important forms of documentation for the circulation of geographical knowledge. These cartographical documents typically accompanied dispatches. At times, they were analyzed and commented upon by the civil servants in the colonies and in London. In this section, I will examine how governors discussed the maps they relayed back to Britain and how the civil servants read them in London. I will also examine what kinds of maps were circulated and how they were preserved.

The movement of maps from the colonies to London demonstrates how different types of cartographical material—manuscript sketches, tracings and printed maps—formed part of the correspondence that arrived at the Colonial Office. These documents were mainly prepared at survey departments by draftsmen and surveyors. During the nineteenth century in general, innovations in map-making technology encouraged the increasing use of maps as administrative records. Lithography was cheaper and faster than copper-engraving. As a result, the usefulness of maps as administrative records was redefined. Andrew Janes notes that maps became a useful tool in Britain because the British started to understand "their administrative potential (…) and incorporate them into the recordkeeping systems".[246] These changes further enforced the "multimedia recordkeeping" where texts and maps were preserved together that had become commonplace already by the beginning of the century.[247] The change was rather incremental and geographically uneven: older forms of technology continued to exist alongside the novel techniques. Manuscript maps were used, for example, alongside printed maps. Some government departments as well

246 Janes 2011, 119.
247 Janes 2011, 123.

as many cartographers continued to engrave their plates and map firms adopted lithography only gradually. Thus, the availability and application of different technologies cannot be presumed.[248]

The availability of necessary equipment for the printing of maps varied between the colonies and was subject to change as the decades passed. The first press arrived in New South Wales in 1821 and was introduced to the Survey Department in 1824.[249] However, it appears that the use of the press at the colony's Survey Department did not become customary for many years. In 1842, for example, surveyor general Thomas Mitchell still had to make special arrangements in order to ensure the use of a lithographic press in his department.[250] In the other colonies, it appears the lithographic press began to be used on a regular basis in the early 1850s. In 1851, J. S. Roe, the surveyor general of Western Australia, for example, submitted a purchase request for a lithographic press to the Survey Department in Western Australia.[251] The press was used to print maps and plans, as well as various survey forms. Indeed, the high demand for the press within the department led to the employment of a dedicated lithographic pressman.[252] The production of maps in the colony became easier as the lithographic press became more stable. Consequently, this made it unnecessary for Roe to seek to produce maps elsewhere as he had done before.[253] Similar developments occurred in for example in Victoria.[254] The challenges in printing maps coincided with the printing facilities in the colonies in general, which depended on the availability of the right materials and skilled printers.[255]

The maps that were sent from the colonies to Britain, which are today housed in The National Archives, touched upon every aspect of colonial life. Topics contained within the maps included the construction of infrastructure, the planning of defenses, exploration

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[248] Crone 1978, 115; Foliard 2017, 71.

[249] Drown 2012, 35; Scardamaglia 2017, 11.

[250] See Mitchell to the Colonial Secretary 16 August 1842, no. 42/319, 242, 4/5407, SRANSW; Mitchell to the Colonial Secretary 22 August 1842 no. 42/328, 248, 4/5407, SRANSW; Mitchell to the Colonial Secretary 3 September 1842, no. 42/348, 257, 4/5407, SRANSW.

[251] Roe to the Colonial Secretary 21 March 1851, 34, vol. 226, CSR, 2941, SROWA.

[252] See, for example, "Employment of Survey Department from 15th to 31st July 1852, vol. 252/229-230, CSR, 2941, SROWA; "Employment of Survey Department from 1st to 15th August 1852, vol. 252/234-235, CSR, 2941, SROWA; Roe to the Colonial Secretary 25 August 1852 no. 911, vol. 252/240-241, CRS, 2941, SROWA; "Employment of Survey Department from 15th to 31st September 1852, vol. 252/252-253, CSR, 2941, SROWA See also, the requests for articles necessary for the functioning of the press: Roe to the Colonial Secretary 25 August 1852 no 909, vol. 252/237, CSR, 2941, SROWA.

[253] In 1852, Roe pointed this out in reference to a request he had made to have some maps printed in India. As the press was functioning well, there was no reason why the maps could not be printed in the colony. The reference to India is important, as it points to the circuits of intercolonial map production. See Roe to the Colonial Secretary 25 August 1852 no. 910, vol. 252/238, CSR, 2941, SROWA.

[254] For example, Governor Latrobe mentions the establishment of the press at the Survey Department in 1853. See Latrobe to Newcastle24 November 1853 no. 187, f. 193, CO 309/19, TNA.

[255] Richards 1988, 1-2; Grishnin 2015, n.217. In spite of the challenges, according to Amanda Scardamaglia, the Australian colonies were a place for lithographic experimentation, as no patent restrictions initially existed there, and once taken to use, they were largely ignored. See Scardamaglia 2017, 10.

route maps, thematic mapping of the dialects of indigenous peoples and inter-colonial boundaries. Most of the maps that arrived in London were manuscript tracings based on maps that had been produced in the colonies. A majority were large-scale maps that depicted the features of portions of the country. They often documented the results of surveys and expeditions and were usually connected to a particular administrative matter. In addition, they included some small-scale maps based on the general surveys that had been executed.

I will now investigate how these different types of maps were read in an administrative context and examine their role as part of government recordkeeping. The reading of maps that were attached with the correspondence that was sent from the Australian colonies was a spatiotemporal phenomenon, as it was when examining letters and journals. In general, the aim of understanding how maps were consumed is challenging, as Christian Jacob notes, "since when people look at maps they leave no visible marks on the maps themselves. Their vision is invisible to us".[256] Thus, in order to understand how maps were used we need to examine additional material that may help to reveal the processes and conventions of reading. Moreover, such an examination will tell us something of the intended content of the map, that is, the way they were meant to be read.[257] It is important to remember that the maps used by the civil servants were made for a reason: they helped them perform their tasks. Thus, they served particular interests that are visible in terms of content and form.[258] Furthermore, sensitivity to "the pragmatics of the consultation of the map" is necessary: the material medium of the map conditions what can be represented. What is more, the context of reading determines how much time can be spent consulting the map and how it can be read.[259]

When the maps arrived on the tables of the civil servants in London, the letters that accompanied them often contained instructions about the need to read the maps in a particular way. The governors at times commented on the maps and reflected on their content, accuracy and significance. In so doing they indicated their intended purpose for the civil servants in London. For example, when transmitting an account of the explorations of Allan Cunningham in 1829, Ralph Darling noted that the sketches "are connected with Mr. Cunningham's Report and point out the course he pursued with such other objects as attracted his attention and he considered necessary to the completion of the map of the country over

[256] Jacob 1996, 192.
[257] Kitcher 2001, 57–58.
[258] Kokkonen 1998, 57; Wood 1992, 4–28.
[259] Jacob 2006, 76–77.

which he had passed".[260] In a similar manner, the Governor of South Australia introduced a map in 1859 by pointing out that it delineated the shape of Lake Torrens, which had recently been explored, but was still a work in progress: "it must be remembered that many other portions of the enclosed large chart which I transmit have not yet been filled up with accuracy".[261]

The governors did not systematically write introductions for the maps they transmitted to London. Occasionally the maps were sent without any form of introduction and were only documented in the margins of the dispatch: this was possible regardless of what the map depicted.[262] In addition to the governors' comments, the different types of text written by explorers and surveyors, which were forwarded as enclosures with the dispatch, usually contained information about the map. This information touched on how a map was prepared, by whom, for what purpose and how it should be read.[263] The way a map was introduced depended on its intended importance for the matter that was being dealt with.

The comments that the maps received at the Colonial Office varied. The maps usually arrived in London in separate cases or with duplicate dispatches. Hence, the civil servants could not always consult them at the same time as they were reading the dispatches for the first time. Evidence of these delays is visible in some of the annotations that were added

[260] Darling to Murray 14 February 1829 no. 25, ff. 400-401, CO 201/200, TNA. For the map Darling referred to, see, "An outline of River Bremer" in Darling to Murray 14 February 1829 no. 25, CO 201/200, TNA. For similar references to the maps by the governors see, Stirling to Goderich 2 April 1832 no. 12, f. 43, CO 18/10, TNA; Grey to Stanley 16 September 1843 no. 131, CO 13/34, TNA; Fitzroy to Gladstone 7 November 1846 no. 2, f. 511, CO 201/369, TNA Young to Grey 2 August 1851 no. 106, 372, ff. 379-386, CO 13/73, TNA; Young to Grey 1 December 1851 no. 153, 319, CO 13/74, TNA; Barkley to Stanley 12 July 1858 no. 75, f. 37, CO 309/46, TNA; MacDonnell to Labouchere 11 February 1858 no. 223, f. 109, CO 13/97, TNA; Bowen to Newcastle 14 January 1861 no. 6, ff. 44-46, CO 234/3, TNA; Bowen to Newcastle 12 January 1862 no. 5, ff. 52-54, CO 234/6, TNA; Hampton to Newcastle 19 August 1862 no. 93, f. 210, CO 18/124, TNA; Bowen to Newcastle 8 January 1863 no. 2, CO 234/8, TNA.

[261] MacDonnell to Newcastle 26 October 1860 no. 432, f. 543, CO 13/102, TNA.

[262] For examples see the following dispatches and the maps they refer to. See, for example, Hutt to Stanley 22 April 1845 no. 15, CO 18/39, TNA; MPG 694 (1–5), TNA; Irwin to Grey 2 August 1848 no. 58, 123, CO 18/48, TNA; *Survey of part of the West Coast of Australia 1847-48*, MPG 697, TNA; *Geological map of Australia,* MPG 697, TNA; Young to Grey 14 January 1852 no. 21, 164-165, CO 13/76, TNA; MPG 733 (2), TNA; Young to Grey 15 March 1852 no. 51, 30-31, CO 13/77, TNA; MPG 734 (1), TNA; Young to Grey 3 April 1852 no. 57, 87-88, CO 13/77, TNA; MPG 734 (2), TNA.

[263] See, for example, Mitchell to the Colonial Secretary 25 February 1834 in Bourke to Stanley 5 May 1834 no. 45, ff. 98-101, CO 201/239, TNA; Sturt to Stanley 21 January 1846 in Blackwood to the Secretary of State 20 January 1846, f. 249, CO 13/52, TNA; Stuchbury to the Colonial Secretary 12 April 1851 in Fitzroy to Grey 30 August 1851 no. 157, ff. 348-350, CO 201/444, TNA; Freeling to the Colonial Secretary 11 November 1851 in Young to Grey 1 December 1851 no. 153, ff. 321-322, CO 13/74, TNA; Stuchbury to the Colonial Secretary 20 November 1855 in Denison to Labouchere 19 April 1856 no. 66, ff. 514-517, CO 201/493, TNA; "Geological and Mineralogical Survey" in Denison to Labouchere 19 April 1856 no. 66, f. 514, CO 201/493, TNA.

to dispatches, which indicate that the matter should be postponed until the maps arrived.[264] On occasions, the maps that arrived with the dispatches were not commented upon at all.[265] All-in-all, explicit comments are not abundant vis-à-vis the maps that were examined. When they do occur, they usually indicate a desire to examine a particular map, or simply state that a map was interesting. Some comments suggest maps should be stored in the library, or that they should be sent to someone to examine or to work with. Many of the maps appear to have been forwarded to other people and institutions for perusal. This was evidently done to many of the maps that were not explicitly analyzed by the civil servants at the Colonial Office. On many occasions, these actors consisted of the Land Board, the Admiralty, the Royal Geographical Society and John Arrowsmith.[266]

I will examine these practices of circulation and the consequent use of the maps in more detail in the next chapter. Hence, I will now make the general observation that only rarely did the arrival of a map excite extensive discussion about its content. In a similar manner, it was rare for governors to receive extensive feedback regarding the maps they

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[264] See, for example, a minute by Stephen 9 May 1843 in Grey to Stanley 28 December 1842, f. 454, CO 13/27, TNA; a minute by Stanley 12 May 1843 in Grey to Stanley 5 January 1843 no. 3, f. 26, CO 13/31, TNA; a minute by Stanley 14 January 1845 in Grey to Stanley 22 June 1844 no. 67, f. 104, CO 13/38, TNA: a minute by Merivale 17 April 1855 in Young to Grey 19 December 1854 no. 120, f. 302, CO 13/87, TNA; a minute by Ball 18 April 1855 in Young to Grey 19 December 1854 no. 120, f. 302, CO 13/87, TNA; a minute by Gairdner 3 June 1848 in Fitzroy to Grey 14 January 1848 no. 14, f. 159, CO 201/393, TNA; a minute by Elliot 3 June 1848 in Fitzroy to Grey 14 January 1848 no. 14, f. 159, CO 201/393, TNA; Minute in Barkly to Lytton 19 February 1859 no. 21, f. 174, CO 309/48, TNA; Minute by Cox 17 April 1863 in Bowen to Newcastle 17 February 1863 no. 9, f. 69 CO 234/8, TNA.

[265] See, for example, the minutes in the following dispatches regarding the transmission of maps: Gipps to Stanley 21 January 1846 no. 16, f. 154, CO 201/365, TNA; Irwin to Grey 2 August 1848 no. 58, f. 123, CO 18/48, TNA; Young to Grey 14 January 1852 no. 21, ff. 164-166, CO 13/76, TNA; Young to Grey 15 March 1852 no. 51, ff. 30-31, CO 13/77, TNA; Young to Grey 30 June 1852 no. 77, ff. 225-226, CO 13/77, TNA; Latrobe to Newcastle 24 November 1853 no. 187, ff. 193-194, CO 309/19, TNA; Fitzgerald to Grey 19 July 1855 no. 76, f. 234, CO 18/88, TNA; MacDonnell to Labouchere 6 October 1857 no. 184, ff. 2-6, CO 13/96, TNA; MacDonnell to Labouchere 15 October 1857 no. 186, ff. 33-71, CO 13/96, TNA; MacDonnell to Newcastle 25 November 1861 no. 534, f. 28, CO 13/107, TNA.

[266] Annotation in Stirling to Goderich 2 April 1832 no. 12, f. 42, CO 18/10, TNA Minute by Stephen 21 October 1846 in Robe to Gladstone 11 June 1846 no. 68, f. 259, CO 13/49, TNA; Minute by Gladstone in 27 October 1846 in Robe to Gladstone 11 June 1846 no. 68, f. 259, CO 13/49, TNA; a minute by Elliot 29 November 1851 in Fitzgerald to Grey 21 August 1851 no. 101, f. 257, CO 18/60, TNA; Annotation 14 September 1853 in Fitzgerald to Newcastle 6 June 1853 no. 22, f. 12, CO 18/74, TNA; Minute by Gairdner 23 August 1859 in Kennedy to Newcastle 14 May 1859 no. 14, f. 214, CO 18/109, TNA. For evidence of the production of these communications see, a minute by Stephen 1 December 1836 in Bourke to Glenelg 12 June 1836 no. 62, f. 264B, CO 201/253, TNA; Minute by Gairdner 4 May 1852 in Young to Grey 1 December 1851 no. 153, f. 320, CO 13/76, TNA; Annotations in Young to Newcastle 27 May 1853 no. 6, f. 206, CO 13/81, TNA; Minute by Merivale 6 February 1853 in Young to Newcastle 15 October 1852 no. 54, f. 152, CO 13/82, TNA; Minute by Gairdner 26 September 1857 in MacDonnell to Labouchere 11 July 1857 no. 172, ff. 304-305, CO 13/95, TNA; Minute by Gairdner 10 February 1858 in MacDonnell to Lytton 30 November 1857 no. 203, ff. 286–287, CO 13/96, TNA; Minute by Gairdner 17 January 1859 in Denison to Lytton 21 October 1858 no. 151, f. 64, CO 201/504, TNA; Minutes by Cox 28 February 1861 and 8 March 1861 in MacDonnell to Newcastle 26 December 1860 no. 469, f. 423, CO 13/103, TNA.

had sent. If feedback was sent, it seems this was simply meant as a form of acknowledgement or to encourage the dispatch of similar maps in the future.[267] I will now proceed to analyze in more detail, when possible, how the civil servants in different locations introduced and read maps. The maps that were extensively commented on reveal how they were used by the civil servants to communicate information, as well as the reactions they provoked.

For governors and surveyors, maps were a means to depict recent developments and they were referred to in order to support particular arguments. At the same time, maps could be utilized alongside text in order to visualize and, often, simplify the descriptions of what had been explored and surveyed. In terms of progress made, the maps that were prepared in the colonies elucidated what was written down about the routes that had been taken, as well as demarcating administrative areas (districts, counties and parishes) and visualizing the results of processes that had taken place.

Maps were simultaneously records of the discoveries that had been made and testimonies of the potential resources available in a colony. In 1836, Governor James Stirling, when explaining the state of the six-year-old colony at Swan River to Lord Glenelg, the Secretary of State, pointed out that "[t]he maps lodged in the Colonial Office in 1833 together with the Surveyor Generals Reports and Plans since forwarded present the result of all the Explorations of Country which have been effected up to the present Time".[268] The maps in the collections of The Colonial Office and the colony referred to by Stirling documented his expectations about the capabilities of Western Australia. The colony of Swan River suffered from harsh environmental conditions, as the extent of good soil that could be used as pastureland was not as extensive as had initially been hoped. However, Stirling judged that the region would nevertheless be able to support a large population, based on the information available. Furthermore, "the almost boundless country" remained nearly unknown and therefore "a decided opinion" about the quality of the soil at large could not be yet formed.[269]

Consequently, Stirling used maps as evidence in order to argue for the steady progress that had been made and to stress how much still remained unexamined. Maps also documented the ideal of constant progress and taming the land. In this sense, they were an effective means of demonstrating that ignorance of the Australian continent was diminishing: some thirty years later Governor Bowen, on the other side of the continent, noted this

[267] See, for example, the draft to Fitzgerald 4 December 1851 in Fitzgerald to Grey 1 August 1851 no. 101, f. 258, CO 18/60, TNA; Annotation by Elliot in a draft to Fitzgerald 4 December 1851 in Fitzgerald to Grey 1 August 1851 no. 101, f. 258, CO 18/60, TNA; draft to Bowen 8 January 1861 in Bowen to Newcastle 29 September 1860 no. 78, f. 85, CO 234/2, TNA.
[268] Stirling to Glenelg 12 July 1836 no. 127, ff. 243–244, CO 18/16, TNA. For a similar example, see MacDonnell to Labouchere 11 February 1858 no. 223, ff. 109-110, CO 13/97, TNA.
[269] Stirling to Glenelg 12 July 1836 no. 127, ff. 243–244, CO 18/16, TNA.

in a very straightforward manner by arguing how the blanks on the maps were filling "as the wilderness is fast yielding up its secrets".[270]

In addition to visualizing the progress of surveys, general maps of the colonies provided a means to depict the huge extent of the territories in Australia. Initially, the territory of New South Wales was roughly half of the size of Europe. It remained extensive even after South Australia and Victoria became separate entities in 1836 and 1851 respectively. The same can be said of Western Australia: the territory is currently approximately ten times the size of New Zealand. The intent to put the size of the surveys in perspective becomes evident from a map prepared by surveyor general Mitchell in New South Wales at the beginning of the 1850s. In February 1851, Governor Charles Fitzroy transmitted six copies of a map showing the south-eastern portion of the continent, at Mitchell's request, which exhibited the divisions and surveys made by the surveyor-general between 1827 and 1850. The lithographed maps were colored differently in order to demonstrate the division into counties and to visualize the squatting districts and the exploratory routes. On one of these maps Mitchell inserted a skeleton map of Great Britain to demonstrate the extent of the areas he had been surveying.[271] For the civil servants at the Colonial Office, the maps appeared very "distinct" and useful "particularly at this time".[272] Consequently, the maps were deemed to be worthy of the secretary of state's attention.[273]

The lithographed maps are extensive in size and meticulous in detail. In addition to depicting the colony, Mitchell included illustrations of the sections of the principal rivers of the territory and the profiles of the islands on Bass Strait. It is clear that the maps were designed to be comprehensive visualizations of what had been achieved and what was consequently known. The skeleton map of Great Britain and Ireland inserted on one of the maps acted as an explicit tool to understand the proportions of the area being depicted.[274] Out of the six copies received, only three are currently stored in the collections of The National Archives, which imply that the maps were forwarded for the permanent use of other parties. However, the minutes left by the civil servants do not explicitly demonstrate this. Neither do they provide information about how the map was received and the reactions, for example, to the comparison with the relatively small size of Great Britain.

In spite of these limitations, Mitchell's maps draw attention to an important question regarding the reading of such sources: how easy was it for the civil servants in London viewing the maps but who had never set foot on the continent, to understand its extent

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[270] Bowen to Newcastle 12 April 1862 no. 17, f. 137, CO 234/6, TNA. For a similar example see, Bowen to Newcastle 8 July 1862 no. 33, f. 320, CO 234/5, TNA.
[271] Fitzroy to Grey 21 February 1851 no. 34, ff. 213-214, CO 201/439, TNA.
[272] Annotation by Gairdner 16 June 1851 in Fitzroy to Grey 21 February 1851 no. 34, f. 214, CO 201/439, TNA; Annotation by Elliot 16 June 1851 Fitzroy to Grey 21 February 1851 no. 34, f. 214, CO 201/439, TNA.
[273] Annotation by Elliot 16 June 1851 Fitzroy to Grey 21 February 1851 no. 34, f. 214, CO 201/439, TNA. The maps were also directed to be shown to Arrowsmith. See Annotation by Hawes s.d. Fitzroy to Grey 21 February 1851 no. 34, f. 214, CO 201/439, TNA.
[274] MPG 461, TNA.

and the character of the land? Certainly, as has been noted by Edney in the context of eighteenth-century Europe, maps enabled their readers to comprehend the size and scale of the distant land and thus provided them with "an understanding of those extensive spatial organizations and structures that no one individual could ever hope to experience directly". By doing this, however, maps served to obscure what was being observed and enforced spatial denial.[275] Viewed from this perspective, the cartographical illustration of Great Britain inserted into one of Mitchell's maps was an attempt to put the information exhibited in the maps of the Australian colonies into some perspective.

Maps also functioned as a means to visualize problems and plans at hand. For example, in 1844, when Governor George Gipps wrote to London with extensive suggestions on how the administration of lands beyond the limits of location should be organized, he forwarded a "rough map" with his dispatch in order to illustrate the matter. Gipps guided the secretary of state Lord Stanley to observe from the "outline of this colony" of New South Wales how "squatting interest" had grown. Gipps described how the area extended through fourteen degrees of latitude to the north and stretched some 1000 miles from east to west to the mouth of River Glenelg. The map exhibited how the area was divided into fifteen districts, without definitive boundaries, as no surveys had been conducted to define them.[276] Gipps used the map as a tool to show Stanley why the current system of administering the lands within the boundaries of location differed to those places beyond needed amendments. Land was sold or leased within the boundaries in definite quantities, but beyond this territory it was occupied by license as stations or run without any definitions of their extent.[277] Thus, the maps visualized a land of barbarism that had to be civilized by altering the principles of administration:

> We here see a British Population spread over an immense territory, beyond the influence of civilization, and almost beyond the restraints of Law. Within this wide extent, a Minister of Religion, is very rarely to be found, there is not a place of Worship, nor even a school; so utter indeed is the destitution of all means of instruction, that it may perhaps almost be considered fortunate that the population has hitherto been one almost exclusively male. But Women are beginning to follow into "the Bush"; and a Race of Englishmen must speedily be springing up in a state approaching to untutored barbarism.[278]

Consequently, to improve the state of things it was necessary to extend the boundaries of location, as well as motivating the squatters to cultivate the land. In Gipp's view this could be done by creating the possibility for the squatters to purchase the land they occupied on specific terms. Furthermore, the extent of the runs should be limited. He argued that these

[275] Edney 2003, 65–66.

[276] Gipps to Stanley 3 April 1844 no. 75, f. 8, CO 201/345, TNA; MPG 406, TNA. For similar instances of using maps to illustrate plans or problems see, for example, Young to Grey 19 December 1854 no. 120, ff. 301-302, CO 13/87, TNA; MPG 736, TNA.

[277] The licenses could be bought for £10 by anyone and the squatters themselves defined the extent of land they used.

[278] Gipps to Stanley 3 April 1844 no. 75, ff. 9-10, CO 201/345, TNA.

changes would benefit the colony as the territory would be managed more efficiently.[279] Although the governor had the authority to make such changes, Gipps hoped to gain the approval of Her Majesty's Government before implementing his reforms.[280] On this occasion, then, the map transmitted to London visualized the problematic state of administrating the territory. Gipps's reading of the situation was clearly persuasive as he hoped to gain approval for his ideas.

The civil servants in London did not explicitly comment on the map sent by Gipps and the original map is no longer extant. Instead, the collections of The National Archives contain a printed map that accompanied the papers that were produced for Parliament and dealt with crown lands and emigration to New South Wales. Furthermore, the annotations document that the map was transmitted to the Lands and Emigration Commissioners. I will discuss practices of printing maps with the Parliamentary Papers in more detail in the next chapter. For now, I wish to draw attention to the fact that if we assume that the printed map was based on the one sent by Gipps, as is likely, it is noteworthy how the original has been substituted by the printed version.[281] It draws attention to the practices of preserving the maps in London and consequently hints at the historical processes that have shaped the contents of the archives that exist today.

In addition to these examples, in which the civil servants in London seem to have concurred about the importance and function of the map that had been sent, the correspondence reveals instances when the perceived significance of the map altered once it passed from person to person. A good example of this is a map forwarded by Sir George Bowen, the first governor of Queensland, to London in 1860. This map depicted the areas settled in the colony and was accompanied by a description by the surveyor general, Augustus C. Gregory, which explained the extent of stocked areas: nearly 120,000 square miles, with approximately 20,000 square miles soon expected to be occupied. Bowen thought that the map would be a "valuable and interesting addition to the records of the Colonial Office" and could even be forwarded to the RGS.[282]

However, Bowen's sentiments were not shared at the Colonial Office. An assistant clerk named William Dealtry considered it to be problematic to forward the map as no duplicate had reached the office.[283] Dealtry's superior, Gairdner, emphasized that the matter was not

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[279] Gipps to Stanley 3 April 1844 no. 75, ff. 12-18, CO 201/345, TNA.
[280] Gipps to Stanley 3 April 1844 no. 75, f. 21, CO 201/345, TNA.
[281] Compare MPG 406, TNA, with "Sketch Shewing the Squatting Districts in New South Wales 1844" in *Copies or Extracts of any Correspondence relative to Crown Lands and Emigration in New South Wales*, 1845. The same map was also utilized on a further occasion, yet in a slightly different form, to illustrate the papers printed for Parliament that related to the indigenous peoples of Australia. See "Map of New South Wales & South Australia Shewing the Principal Sites referred to in the Correspondence relative to the aborigines" in *Aborigines. Australian colonies*, 1844.
[282] Bowen to Newcastle 29 September 1860 no. 78, f. 81, CO 234/2, TNA.
[283] Annotation by Dealtry 24 December 1860 in Bowen to Newcastle 29 September 1860 no. 78, ff. 81-82, CO 234/2, TNA.

urgent and stressed that the map did not contain any new information respecting the geography of the region. Consequently, he recommended waiting for the arrival of the duplicate.[284] Elliot noted that he saw the map as a mere advertisement for the colony of Queensland, the visibility of which Bowen was keen to promote. In addition, he questioned the value of sending the map to the RGS. The map did not contain new geographical information that would interest the society: after all, the map focused on already settled districts. Elliot argued that unless a duplicate map arrived, he would "let his request fall to the ground" and simply store it in the map library of the Colonial Office.[285]

These readings of the importance of the map, however, did not ultimately restrict its distribution. In February 1861, the map appears to have been loaned to cartographer Arrowsmith for inspection and two months later it was forwarded to the RGS.[286] The circulation of the map on this occasion was triggered by the reception of a further dispatch from Bowen, which included a map that depicted the district of Kennedy that had been formed around the recently discovered River Burdekin. The original information communicated by Bowen in December garnered interest as background material to the more recent dispatch and map. However, when the documents were about to be forwarded to the RGS, the civil servants learned that the society already possessed the maps in question. This made their distribution unnecessary.[287] Consequently, the maps were preserved in the library of the department.[288]

This chain of events exemplifies how the reading of maps and their consequent use were not only affected by content, but also to a great extent by context. What mattered was how the importance of the map was understood in terms of communication. This point can be examined in relation to Jacob's idea of maps as both objects and instruments of communication. The relationship between the producer and the receiver of a map—the individual who is in possession of information and the other who needs it—affects the processes of communication.[289] Viewed within the context of the movements of maps, civil servants could either facilitate or restrict the distribution of these documents as part of the official correspondence of the British government.

The way the civil servants read the maps also demonstrates how the status of such documents as useful governmental records was prone to change. The standing of a map was likely to change if the relevant issue was deemed to be no longer as pertinent. In 1859, for example, governor Arthur Kennedy (1810–1883) of Western Australia transmitted a map

[284] Annotation by Gairdner 26 December 1860 in Bowen to Newcastle 29 September 1860 no. 78, f. 82, CO 234/2, TNA.
[285] Annotation by Elliot 27 December 1860 in Bowen to Newcastle 29 September 1860 no. 78, f. 82, CO 234/2, TNA.
[286] See annotations on the cover page in Bowen to Newcastle 29 September 1860 no. 78, f. 81, CO 234/2, TNA.
[287] See annotations by Rogers and Cox in Bowen to Newcastle 14 January 1861 no. 6, ff. 46–49, CO 234/3, TNA.
[288] Annotation on the front page in Bowen to Newcastle 14 January 1861 no. 6, f. 44, CO 234/3, TNA.
[289] Jacob 2006, 98–100.

from the survey department with information about the recent inland explorations by Francis T. Gregory along the banks of the River Lyons. The map had been prepared by tracing the route on a printed map that depicted naval officer Phillip Parker King's (1791–1856) surveys of the coast from Shark Bay to Nickol Bay in the late 1810s and early 1820s. The additions had been made by the draftsman Alfred Hillman (1807–1883).[290] At the Colonial Office Gairdner noted that the map related to a project proposed by Western Australia that focused on a survey of the coast. Gairdner was against the project. Consequently, the significance of the map was re-evaluated and it morphed from being an active working-document into a passive record.[291] This discussion brings to the fore a point made by Philip Kitcher: the function of a map alters once it no longer serves a particular purpose.[292]

The examples cited above, vis-à-vis the communication of maps from the colonies, can be contrasted with the multiple occasions in which no maps actually existed to be consulted, let alone transmitted to London. As has been emphasized by Raj among others, the processes of circulation can be considered in relation to the things that do not move for different reasons. Circulation is a process that requires particular conditions to be fulfilled, such as the existence of the things to be circulated and the willingness of different actors to participate in the process.[293]

As noted in the previous sections, the unavailability of material that was needed was an issue that the civil servants often encountered, with maps being no exception. All of the survey departments suffered from an inability to prepare maps as speedily as they wished. This was due to a lack of resources and the unavailability of competent staff to prepare tracings. These were problems that periodically surfaced from the 1820s until the 1860s in the different colonies. These issues had implications on the maps that could be transmitted and consequently consumed in different locations. In 1847, for example, the surveyor general of South Australia, Edward C. Frome, noted in his report that there had not been sufficient time to execute a general map fit for publication, as all energy had been invested in trying to keep up with the demand for land.[294] However, a map was finalized in 1848, under Frome's superintendence.[295] Consequently, his report and the attached map were received with satisfaction at the Colonial Office.

I will next examine how the Survey Department in Western Australia functioned in order to examine in more detail the processes that constituted the unavailability of maps. The department was overseen by John Septimus Roe from its establishment in 1829 until

[290] MPG 309, TNA; Kennedy to Lytton 14 May 1859 no. 60, f. 214, CO 18/109, TNA. For general information about King, see 'King, Phillip Parker (1791–1856)' 1967.
[291] Annotation by Gairdner 23 Aug 1859 in Kennedy to Lytton 14 May 1859 no. 60, f. 214, CO 18/109, TNA.
[292] Kitcher 2001, 59.
[293] Raj 2013, 344–345. Also see Östling and Larsson Heidenblad 2017.
[294] "Report – Survey Department for the year 1847" in Robe to Grey 13 May 1848 no. 45, f. 429, CO 13/58, TNA.
[295] "Report – Survey Department for the year 1848" in Young to Grey 13 February 1849 no. 21, f. 159, CO 13/62, TNA; Young to Grey 13 February 1849 no. 21, ff. 154-156, CO 13/62, TNA.

1870.[296] In the 1840s and 1850s, Roe had to direct his department with a very limited amount of staff. This had a direct impact on the production of maps, as well as on the speed of surveys, the execution of explorations and the construction of permanent landmarks to mark the boundaries of the areas that had been surveyed. This was mainly due to the scant resources available to the department, but staffing levels were also affected by sickness and resignations. The latter phenomenon was due to other Australian colonies offering better wages for surveyors.[297]

Tables regarding the accumulation of geographical and topographical knowledge are useful documents when examining the progress made in the preparation of maps in Western Australia. Roe marked the new maps that had been prepared or that were in the process of being finalized in these tables. He also highlighted if any additions to the previous maps of the colony had been made. If the maps were complete, he forwarded them for use as a means of elucidating the reports.[298] The tables reveal that map-making in Western Australia was slow, especially in the 1840s. In February 1841, for example, governor John Hutt (1795-1880) reported to London that Roe, after the resignation of his draftsman, had stated that the establishment could not function properly with the present staffing levels (himself, a draftsman and a clerk):

> The Surveyor General has frequently represented to me [...] the difficulty he finds in keeping the current business which he has to perform free from arrears whilst he is entirely precluded from turning his attention to much that is desirable to be effected, such as furnishing from time to time, maps either of extended locations, or newly discovered tracts of country [...].[299]

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[296] Uren 1967.

[297] For example, Robert Austin and Francis T. Gregory resigned in 1861 for better paid positions in Queensland. See Kennedy to Newcastle 18 March 1861 no. 45, ff. 131-132, CO 18/114, TNA; Kennedy to Newcastle 26 January 1862 no. 22, f. 121, CO 18/118, TNA. In the 1850s, the bad health of A. Hillman, the assistant-surveyor, impacted on the progress of the surveys. See Roe to the Colonial Secretary 21 July 1852 no. 903, vol. 252/213-218, 2941, SROWA. For general references to the situation at the Survey Department see, Roe to the Colonial Secretary 12 March 1840 in Hutt to Marquis of Normandy 29 April 1840 no. 19, f. 82, CO 18/25, TNA; Hutt to Russell 5 February 1841 no. 10, ff. 134-135, CO 18/27, TNA; Irwin to Grey 5 June 1848 no. 45, ff. 431-432, CO 18/47, TNA; Roe to the Colonial Secretary 26 April 1852 no. 889, vol. 252/188-193, CSR, 2941, SROWA.

[298] See, for example, Roe to the Colonial Secretary 12 March 1840 in Hutt to Marquis of Normandy 29 April 1840 no. 19, f. 86, CO 18/25, TNA; "Progress [...] during the half year ending 31st December 1840" in Hutt to Russell 1 March 1841 no. 15, f. 214, CO 18/27, TNA; "Progress [...] during the half year ending 30th June 1845" in Hutt to Stanley 9 September 1845 no. 43, f. 59, CO 18/40, TNA; "Progress [...] during the half year ending 31st December 1849" in Fitzgerald to Grey 14 February 1850 no. 18, f. 181, CO 18/53, TNA; "Progress [...] during the half year ending 31st December 1853" in Fitzgerald to Newcastle 22 August 1854 no. 85, f. 103 CO 18/81, TNA; "Progress [...] during the half year ending 30th June 1854" in Fitzgerald to Newcastle 18 November 1854 no. 131, f. 418, CO 18/83, TNA; "Progress [...] during the half year ending 31st December 1853" in Fitzgerald to Grey 7 July 1855 no. 75, ff. 221-222, CO 18/88, TNA; "Progress [...] during the half year ending 30th June 1855" in Fitzgerald to Grey 19 July 1855 no. 76, f. 235, CO 18/88, TNA; "Progress [...] during the half year ending 31th December 1856" in Kennedy to Labouchere 13 March 1857 no. 34, f. 270, CO 18/98, TNA; "Progress [...] during the half year ending 31th December 1858 in Kennedy to Lytton 15 March 1859 no. 30, f. 88, CO 18/109, TNA.

[299] Hutt to Russell 5 February 1841 no. 10, ff. 134-135, CO 18/27, TNA.

This was a pressing matter for the administration of the colony: the governor had no general map or other maps or plans to refer to when dealing with crown lands. New skilled employees were badly needed to improve the situation. Roe hoped to employ a talented individual, who was able to draw plans and to "understand the leading problems in Geometry and Trigonometry, the construction and use of Maps, and if possible be acquainted with the duties of a Land Surveyor".[300]

Luckily for the governor and Roe, three additional surveyors had already been sent to the colony before Hutt's letter reached London. Hence, the matter seemed to have been resolved, at least in the eyes of the imperial officers.[301] However, problems lingered. On several occasions Roe reported to the governor and the secretary of state that no new maps could be prepared as no one was available to execute the work. According to the table prepared by Roe, for example, The Survey Department was without a draftsman for the entire year in 1842 and consequently no new maps were prepared.[302] In 1845, Hutt detailed the reasons for the slow progress of surveys since the establishment of the colony in 1829. He pointed out that one important factor was the environment: surveys could not proceed during the winter when the country became swampy due to the rains and moving around without roads and bridges became impossible. Secondly, in Hutt's view the failure to establish an efficient logistical system had led to a lack of progress. Hutt argued that it would benefit the work of the surveyors in the field if they could receive on-the-spot feedback from the surveyor-general, instead of having to request instructions from distant Perth. This had not been possible in the years leading up to 1845, as Roe was otherwise preoccupied with duties associated with his membership of the executive and legislative councils of the colony. In addition, the governor had needed Roe to perform time-consuming daily tasks associated with the plans and records of the Survey Department regarding the management of the lands. In Hutt's opinion, Roe was the font of all necessary information regarding the management of lands.[303]

As Roe had been in Western Australia as long as the colony had existed, "he could answer enquiries and at once afford such explanation, as could not be expected from any other person, not so thoroughly versed in the details of the Establishment".[304] Hutt, therefore, drew on Roe's report regarding the progress of the surveys to suggest that a deputy

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[300] Hutt to Russell 5 February 1841 no. 10, ff. 134-138, CO 18/27, TNA; Roe to Colonial Secretary 21 January 1841 in Hutt to Russell 5 February 1841 no. 10, f. 140, CO18/27, TNA. Similar requests for additional work force were also made from, for example, New South Wales. See, for example, Gipps to Russell 17 October 1840 no. 159, CO 201/298, TNA.

[301] Draft letter to Hutt 16 September 1841 no. 1 in Hutt to Russell 5 February 1841 no. 10, ff. 144-145, CO 18/27, TNA.

[302] "Progress [...] during the half year ending 31th December 1842" in Hutt to Stanley 31 August 1843 no. 49, f. 94, CO 18/35, TNA. See also Progress [...] during the half year ending 30th June 1843 in Hutt to Stanley 31 August 1843 no. 50, f. 113, CO 18/35, TNA; "Progress [...] during the half year ending 31st December 1845" in Clarke to Stanley 5 February 1846 no. 4, f. 126, CO 18/42, TNA.

[303] Hutt to Stanley 31 December 1845 no. 66, ff. 286-287, CO 18/40, TNA.

[304] Hutt to Stanley 31 December 1845 no. 66, f. 287, CO 18/40, TNA.

should be appointed. This would enable Roe to travel and work more often in the field.[305] Hutt's suggestion was received favorably at the Colonial Office and his successor, Andrew Clarke (1793–1847), was ordered to proceed with the matter.[306] However, the basic resources available at the department continued to be limited, and hence the type of work that could be performed was limited. In 1858, for example, Roe noted that it was still impossible to execute a trigonometric survey of the colony, as no resources existed to employ suitable staff or to buy the right instruments.[307]

This example, from Western Australia, demonstrates how the functioning of survey departments and the production of maps was connected to the overall economic situation in the colonies. In general, administrators had to balance the need for surveys with available resources. Slow economic development in Western Australia until 1850 was due to land regulations, which granted a large portion of the best land to landowners who had no interest in improvements. Furthermore, agriculture and pastoralism developed slowly and the colony relied on imports. This made it a far less inviting place for investment or migration than the other colonies. Indeed, it was only after the transportation of convicts, between 1850 and 1868, that the colony's population started to show substantial growth.[308] The growth of the population linked to the transportation of convicts created new challenges for the Survey Department. First and foremost, it needed to supply maps for this branch of the administration.[309]

It should be emphasized that the resources at the disposal of the surveyor-generals were not even. Furthermore, they were subject to change. In the 1840s, for example, severe cuts were made to the department in New South Wales, with the budget being cut from over £26,000 in 1842 to £12,000 in 1843. Subsequently, the majority of the department's staff was dismissed.[310] Thus, the favored aim of surveying and the active utilization of maps in the administration was constrained, to a large degree, by economic factors in the colonies.

When considering the volume of work that the survey departments had to perform in light of their relatively meagre staff, it is relevant to note that the extent of resources cannot be taken as a direct indication of the quantity and quality of the work that was executed and of the maps that were prepared. Within the British Empire, multiple examples of this can be found. In Ceylon, for example, the Survey Department grew to be the largest in the

[305] Hutt to Stanley 31 December 1845 no. 66, ff. 288-291, CO 18/40, TNA; Roe to the Colonial Secretary 12 January 1846 in Hutt to Stanley 31 December 1845 no. 66, ff. 298-300, CO 18/40, TNA.
[306] Draft to Clarke 28 July 1846 in Hutt to Stanley 31 December 1845 no. 66, ff. 293-295, CO 18/40, TNA.
[307] Roe to the Colonial Secretary 3 August 1858 no. 1121, CSR vol. 416/52, 2941, SROWA. Roe had raised a similar issue in 1852 about how budgetary limits prohibited the commission of trigonometric surveys to "any greater extent". See Roe to the Colonial Secretary 21 July 1852 no. 903, CSR vol. 252/217, 2941, SROWA.
[308] Ford & Roberts 2013, 136–137; Cameron 1981, xvii.
[309] The increasing workload was noted by Roe and his draftsman, Samson, in the beginning of the 1850s. See Roe to the Colonial Secretary 12 March 1852 no. 882, CSR vol. 252/157-159, 2941, SROWA.
[310] Gipps to Stanley 13 June 1843 no. 91, ff. 526-530, TNA; Williamson 1984.

Empire during the nineteenth century. In spite of this, no triangulation or topographical surveys were executed on the island. This resulted in a lack of accurate knowledge about Ceylon's characteristics.[311] What emerges then is a network in which different aspects of the processes of map-making and surveying affected each other. The way the country was known, through survey reports, maps and plans, depended on the practice of producing and collecting data and the competence of the people executing this work. This becomes evident in the Australian context when we return to examine developments in New South Wales.

In the beginning of the 1830s, the governor of New South Wales did not possess a map of the colony that he could use when dealing with questions relating to the management of land. Writing to London in 1831, governor Ralph Darling noted that the only map he could refer to was a general map he had brought with him from Britain:

> I have omitted to instance when speaking of Major Mitchell, that I have not been able to the present moment, to obtain a Map or Sketch of the Colony, as at present proposed to be divided, though I have repeatedly mentioned to him personally, the inconvenience and embarrassment I feel, having nothing better to refer to when settlers come to speak about their land, than a common Map of Arrowsmiths' which I brought out with me. – I suppose I shall be favoured with a Copy in common with others, when his new Map has been published.[312]

Darling's notions demonstrate two points: first, the popular maps of John Arrowsmith were occasionally used as the principal cartographical reference source when administering the colony. However, as Arrowsmith's maps were small-scale maps—"common" as Darling termed them—and prepared in Britain, they were insufficient for all the administrative purposes.

Secondly, they point to the fact that at the time Darling was writing his letter, the surveyor general, Thomas Mitchell, was preparing a general "three-sheet-map" of the colony. Mitchell had started the project four years before Darling made his remarks and it would take a further three years for the map to be finished. Mitchell's task was to provide the government with the means to efficiently manage the land within the limits of its territory. Once finished the map would depict the nineteen counties that had been separated into distinct administrative units, according to the instructions received from Britain. Thus, it would illustrate where the limits of purchasing land lay.[313] Whilst waiting for the map to be completed, the administrators had to suffice with a rough image of the state drawn from surveys in order to determine such matters as land regulations. The correspondence between the colonial secretary of New South Wales and the surveyor general highlights how by 1828 Mitchell was already being asked to provide approximations of the extent of the

[311] Barrow 2003.
[312] Darling to Hay 28 March 1831, Private, ff. 41–42, CO 201/219, TNA.
[313] Andrews 1992, 3–6. See also Foster 1985. See Andrews for a detailed examination of the surveying processes leading to the preparation of the map.

surveys, the progress of dividing the territory into counties and evaluations of the country to provide him with the necessary information.[314]

Once the map was finally ready in 1834, its use in the colony and transmittance to London demonstrates how the utilization of available maps and their "life-cycles" or "life-histories" were not always as straightforward as with some of the maps discussed above.[315] In fact, Mitchell's map is of particular interest as it emerged in the correspondence as an object of enquiry both at the time of its preparation and also two decades later.

The map that Mitchell compiled was based on the official surveys he had executed, but he self-financed its engraving with the intent of publishing it privately.[316] Thus, when governor Richard Bourke introduced the map to Britain in 1834, he requested that the civil servants limit the amount other map-makers were able to scrutinize the document before Mitchell was able to organize the publication of the map in London.[317] Furthermore, Bourke requested to be authorized to purchase copies of the map for administrative use in the colony.[318] Introducing maps this way, with the intent to limit their circulation in Britain, was rare. Generally, at the time maps were not included in copyright: only the Copyright Act of 1842 would include them. However, even after it map-makers were not very active in noting it on their maps.[319]

The introduction of the map occurred in the context of an enquiry undertaken by the secretary of state, Lord Stanley, regarding the management of the Survey Department and the methods used by Mitchell. Bourke's dispatch and its enclosure (Mitchell's letter to Stanley), therefore, contained reflections on these general themes. He concurred with Mitchell regarding the excessively challenging circumstances for the execution of a trigonometric survey, which was the ideal technique used in multiple parts of the world at the time.[320] Mitchell, in particular, emphasized that the map was superior to the maps the civil servants had been using before, even though it was not based on a trigonometric survey.[321]

When discussing Mitchell's map, Bourke noted its quality: "a map has been constructed sufficiently correct for ordinary purposes". He also emphasized that Mitchell had corrected

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[314] De La Condamine to Mitchell 28 April 1828, 5, Surveyor-General's Correspondence, SRANSW.
[315] Driver 2010, 148-156; Prior 2012, 37–38.
[316] Bourke to Stanley 5 May 1834 no. 45, ff. 89–90, CO 201/239, TNA.
[317] Bourke to Stanley 5 May 1834 no. 45, ff. 90-91, CO 201/239, TNA. See also Mitchell to Hay 23 September 1834, f. 185, CO 323/173, TNA. See also, Mitchell to Hay 23 September 1834, f. 187, CO 323/173, TNA.
[318] Bourke to Stanley 5 May 1834 no. 45, f. 91, CO 201/239, TNA.
[319] Herbert 1989, 105.
[320] Bourke to Stanley 10 October 1834 no. 104, ff. 27-37, CO 201/241, TNA; Mitchell's report and its appendices explained in an extensive manner the state of the survey department and the methodology he had adopted to construct his map. The report also explained the principles governing why he had divided the colony into counties. See Mitchell to Stanley 2 September 1834 in Bourke to Stanley 10 October 1834 no. 104, ff. 39–58, CO 201/241, TNA; "Appendix C. Report on the general survey of New South Wales" in Bourke to Stanley 10 October 1834 no. 104, ff. 61-62, CO 201/241, TNA; MPG 616, TNA.
[321] Mitchell to Stanley 2 September 1834 in Bourke to Stanley 10 October 1834 no. 104, ff. 40-41, CO 201/241, TNA; "Appendix C. Report on the general survey of New South Wales" in Bourke to Stanley 10 October 1834 no. 104, ff. 61-62, CO 201/241, TNA; MPG 616, TNA.

the map based on the suggestions made by the Executive Council. However, as Mitchell had chosen to execute it on a small scale—2 inches to a mile—its utility for the inhabitants had diminished. In the future, the surveys at the Survey Department would enable the execution of useful county maps.[322] Consequently, the map Mitchell presented as a great achievement was only viewed as being ordinary by Bourke. What is more, Bourke regarded it as not being very suitable for daily use. Improving its utility required the preparation of new maps that depicted the counties.

No trace of how Mitchell's map was read in London has been left on the document. Some underlining can be seen in the reports by Bourke and Mitchell, but no explicit comments about the map can be found on this occasion. The map reappeared in circulation in the 1850s, on two very different occasions. First, in 1852 Mitchell offered to sell the copperplates and the remaining impressions of the sheets to the government. Writing to the colonial secretary of New South Wales, Mitchell wanted to make the plates public property. He argued that they were important as they constituted the key to the county maps, which were about to be engraved on a larger scale. Mitchell also argued that the three-hundred impressions he had in his possession would be very useful at a time when the mineral wealth of the colony and its geographical features were attracting so much attention. Consequently, the maps could be used with geological reports and when explaining other developments that had occurred in the colony. In addition, Mitchell noted that he had been left with many impressions, as the colonial government had prohibited him from selling them quickly after he had finished the map in the 1830s.[323]

Considering these suggestions in London, Gordon Gairdner wondered whether the map was of any use for the government as it only "contains little more than a representation of the geological features of the Colony".[324] In addition, Thomas Elliot had found out, with the help of the office librarian Mayer, that most of the information it contained had been incorporated into Arrowsmith's commercial maps.[325] However, as the purchase of the maps was thought to be useful for the colony—both the governor and the Executive Council favored the idea—the civil servants in London authorized the purchase for £300 and the governor proceeded to obtain the material for the government.[326]

Secondly, a few years later, the Commissioners of Enquiry that investigated the state of the Survey Department further reassessed the value of the map as an administrative

[322] Bourke to Stanley 10 October 1834 no. 104, ff. 27–37, CO 201/241, TNA; "Extract from minute no. 8 of the Executive Council 9 April 1834" in Bourke to Stanley 5 May 1834 no. 45, ff. 95–97, CO 201/239, TNA.
[323] Mitchell to the Colonial Secretary 22 May 1852 in Fitzroy to Pakington 30 August 1852 no. 43, ff. 394–395, CO 201/453, TNA.
[324] Annotation by Gairdner 30 December 1852 in Fitzroy to Pakington 30 August 1852 no. 43, f. 386, CO 201/453, TNA.
[325] Annotation by Elliot 4 January 1853 in Fitzroy to Pakington 30 August 1852 no. 43, f. 387, CO 201/453, TNA.
[326] Annotation by Elliot 4 January 1853 in Fitzroy to Pakington 30 August 1852 no. 43, f. 387, CO 201/453, TNA; Fitzroy to Newcastle 28 June 1853 no. 88, ff. 262-263, CO 201/465, TNA.

record. In 1855, William Denison, the new governor of the New South Wales who had relocated there from Van Diemens Land, appointed a commission to enquire into the state of the Survey Department. The commissioners, who consisted of experts appointed by Denison, were expected to form an opinion regarding the different aspects relating to the surveys; particularly their efficiency, value, extent and character, as well as the mode of administering the department in general.[327] In July 1855, the members of the board interviewed Mitchell and eight others from the department regarding how it functioned and the system of surveys that was used. The results were reported in the form of an extensive report, which governor Denison forwarded to London in October of the same year.[328]

The board made particular efforts to identify the principles used when preparing the different maps that were available at the department. These maps included those that only depicted a portion of the colony (the "three-sheet map"), a general map of the south-eastern portion of Australia, as well as those that featured counties, rivers and ranges, townships and reserves, farms and runs. They also included an old map of Sydney, as well as depictions of the harbor of Port Jackson, old parish maps and miscellaneous others.[329]

As a consequence of their enquiries, the board reported that they gave full credit to Mitchell for all his surveying and map-making efforts, but that it was evident that the Survey Department had been managed in a dissatisfactory manner. The report contains the board's misgivings, for example, about Mitchell's stated opinion that the most important maps at the department were those he had prepared as a private individual and not as a public servant.[330] Furthermore, the board expressed their view that the methodological choices Mitchell had made in executing his surveys, combined with his long absences from the colony, had resulted in a disorganized department. The interviews with Mitchell that are documented in the report indicate how the maps were read in very different ways. For Mitchell, his maps served as testimonies for the choices he had made with the best intentions, based on his highly qualified vision of how surveying should be executed. Mitchell saw his three-sheet map as "one of the most accurate specimens of constructive plan ever

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[327] "Governor General's minute to the members of the Executive Council 27 April 1855" in Denison to Newcastle 13 October 1855 no. 163, CO 201/486, TNA. For Denison, see Currey 1972.

[328] "Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" in Denison to Newcastle 13 October 1855 no. 163, CO 201/486, TNA. The interviews consisted of 1164 questions out of which 256 questions were posed to Mitchell. The other individuals interviewed included employees of the Survey Department, such as the Deputy Surveyor-General, John Thompson, the Chief Clerk, Henry Halloran, the Examiner of Plans and Measurements, A. G. McLean, the draftsman John S. Adams, the surveyor William Shone, the surveyor and civil engineer William Meadows, the assistant surveyor Lord Audley and the engineer to the City Commissioners, William Rider. The results of the enquiry were reported in a separate printed document, which was communicated to the Colonial Office in the form of an 87-page report. Fourteen of these pages consisted of appendices.

[329] "Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" in Denison to Newcastle 13 October 1855 no. 163, f. 308, CO 201/486, TNA.

[330] "Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" in Denison to Newcastle 13 October 1855 no. 163, f. 310, 314, CO 201/486, TNA.

produced of an extensive territory on the same scale".[331] For the board, however, the maps were examples of disorganized and outdated methods, which were not based on trigonometric methodology. Consequently, they demonstrated great mismanagement in the production of government records. The conclusions of the commissioners highlighted the malfunctioning of the Survey Department. Better practices were needed to enable the satisfactory performance of the department in the future. Consequently, the major work undertaken by Mitchell was deemed insufficient and a reorganization of the practices employed was recommended.[332]

Furthermore, the board members noted how the inconsistent testimony of Mitchell prohibited them from reaching a decision on several points. The board noted that Mitchell refused to take any responsibility and maintained that the structures for administering the department had not been established by him and his work had suffered from a lack of governmental support.[333]

The detailed report about the New South Wales Survey Department was a means to establish what had been carried out incorrectly and why. Ann Laura Stoler has noted in the context of Dutch practices of colonial governance that reports such as these can be seen as effective tools for governance. Reports served as a means of organizing knowledge into new forms: "they [...] produced new truths as they produced new social realities".[334] James Hevia suggests that the contradictions that the record-keepers—the civil servants—encountered within their system of knowledge management did not result in epistemological questions. Instead, it is implied that they sought better administration rather than a wholesale change in the system of management.[335] Hevia's argument seems well founded in the case of the administration of the Survey Department and its ability to produce and manage necessary information. The malfunctioning of the administrative apparatus that was encountered was usually ascribed to individuals who produced the information that was being managed. This was particularly so in the case of Mitchell, with both the commission of enquiry and the civil servants in London placing the blame on his shoulders.[336]

The conclusions drawn in London about the report are of particular interest here. Gairdner thought that the enquiry had been well-executed and noted that the report was good.

[331] "Minutes of Evidence taken before the commissioners appointed to inquire into the Surveyor General's Department 1855. In Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" in Denison to Newcastle 13 October 1855 no. 163, f. 319, CO 201/486, TNA.
[332] "Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" in Denison to Newcastle 13 October 1855 no. 163, f. 314, CO 201/486, TNA.
[333] "Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" in Denison to Newcastle 13 October 1855 no. 163, f. 314, CO 201/486, TNA.
[334] Stoler 2002, 104.
[335] Hevia 1998, 239.
[336] "Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" Enclosure in Denison to Newcastle 13 October 1855 no. 163, f. 314, CO 201/486, TNA; Minute by Gairdner 28 January 1856 in Denison to Newcastle 13 October 1855 no. 163, ff. 295-296, CO 201/486, TNA.

Hence, he argued that it showed what had been long suspected. Furthermore, he noted that Governor Denison should be credited for his execution of this important enquiry. Gairdner's comment is of interest as it highlights how the functioning of the system of knowing ultimately depended on social factors: individuals that were willing to perform as requested. Consequently, these separate readings of Mitchell's map direct attention to the relationship between the individuals and the system that had been forged for the management of the Empire. They make visible the social aspect that underpinned the production of cartographical data, maps, and knowledge.

Furthermore, these instances of how officials read Mitchell's map demonstrate how opinions were subject to change according to space and time. The value of the map changed from being viewed as useful for the ordinary purposes of governance into a document that seemed to have no additional informative value. At best it could serve as a reference in terms of the developing geological resources of the colony. Eventually the map stood out among the collections of the Survey Department as an outdated record. The context of the circulation of Mitchell's map changed and so did its significance as an enclosure in correspondence and as a tool of colonial and imperial governance.

Consequently, the reading of Mitchell's map, alongside the other examples that I have examined, demonstrates the many different aspects that influenced the way maps that travelled with the correspondence were introduced and read by different individuals. The way maps were understood to materialize and communicate useful information and ideas depended on their content, as well as on the context of reading. A relevant feature related to the context of reading a particular map is connected to how the cartographical document was defined by the other material read alongside it. The examination of maps alongside other enclosures, such as tables, newspaper cuttings and reports, guided how they were read and demonstrates how the information they contained was framed. The different reactions provoked by the maps are important when considered as moments of communication and knowledge making. They make explicit how the significance of a document was always prone to alteration as it reached another individual after being conveyed from a faraway colony, let alone as the decades passed.

Circulating Maps, Accumulating Cartographic Archives

It is now possible to uncover only fragments of how civil servants in London, like James Stephen, Gordon Gairdner and Herman Merivale, actually examined the maps that arrived on their desks from the colonies. Many of these maps were large-scale documents that only depicted portions of the continent and at times, for example, merely a branch of a river. It is relatively easy to imagine these civil servants every now and then turning to small-scale maps of the Australian continent for reference. These maps, which they would refer to in order to put the information they had received in perspective, were likely to include Mitchell's maps of New South Wales that were discussed in the previous section.

However, more often they were probably maps and charts that were prepared in Great Britain and purchased by the Colonial Office for reference.

It can be argued that these maps functioned as one of the primary source of the civil servants' knowledge of the continent, including its geographical characteristics and the progress of exploration and surveys in the vast land. It is therefore of interest to examine in more detail the maps that the civil servants in London and in the colonies used for reference. It is also pertinent to investigate the overall collections of maps that accumulated over the years within government departments in different locations. In this section I will examine the maps that accompanied correspondence from the colonies in relation to the other maps the governors, surveyors and the staff at the Colonial Office had at their disposal when discussing Australian geography. This will help to understand the significance of maps as part of the system of knowing.

The accumulation of different maps in Adelaide, Melbourne, Perth, Sydney, Moreton Bay and London raises an important question: how and where were these documents preserved? The correct preservation of the maps, which were of various sizes, was critically important for their convenient use as administrative records. As Jacob notes, in contrast to atlases and books of maps that had been bound together, separate-sheet-maps always raise the question of storage. They need to be ordered in a rational series that can be consulted.[337] As maps accumulated, these map deposits came to constitute "archives of cartographical knowledge" that had important implications for the spatialization of the colonies. Consequently, one can ask how they were created? What was their relationship with each other?

As already noted, the system of corresponding with the colonies rested upon an idea of order: the dispatches were numbered and classified, and once they reached the colonies or the Colonial Office, they were stored in a very similar manner. In London, the incoming correspondence was usually preserved at the department for two years before the librarian, George Mayer, deposited them in the library. The enclosures, such as maps and books, that traveled with the letters were either archived with them or stored into separate collections. Different kinds of books, including travel accounts among others and publications of other government departments, which arrived at the Colonial Office accumulated in the department's library.[338] This library is currently housed in the Special Collections of King's College Library and it also includes literature printed in the colonies that arrived with the official correspondence at the department.

In London, maps accumulated at the Colonial Office via two routes in particular: from the colonies, but also from within Britain through correspondence and by purchases. As Rose Mitchell notes, the maps stored at the Colonial Office as a result of correspondence

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[337] Jacob 2006, 77.
[338] Young 1961, 138, 140.

represent an *ad hoc* process of collecting.[339] The civil servants also accumulated a collection of maps through purchases that were earmarked to be utilized as a reference library. When colonial affairs were initially dealt with within the War and Colonial Department, the maps were stored as a shared collection. The basis of this collection began in the 1820s. Efforts were then made for the establishment of a proper map library through the acquisition of new maps and books. The office also employed a geographer, who was responsible for copying and constructing maps and plans. After the division of the department in 1854, the Colonial Office Map Library was created. The foundations of its collections were the maps acquired by the War and Colonial Department.[340]

The map library that the colonial officials established and embellished consisted of maps that had been commissioned or purchased from commercial map sellers in Britain. The catalog of maps and plans prepared in 1910 documents the extent of the library before it was dispersed to different archives in London.[341] The catalog makes evident that maps of Australia produced by different commercial mapmakers formed the majority of small-scale maps in the library. The collection included maps prepared by James Wyld Junior (1812–1887) and Stanford's Geographical Establishment, for example, which were both London-based mapmakers. However, maps prepared by the cartographer John Arrowsmith stand out. It is evident that the Colonial Office favored purchasing maps mainly depicting different areas of the continent from this popular commercial cartographer.[342] The catalog documents that twenty maps by Arrowsmith (in contrast to the twelve maps by other commercial cartographers in total) were available for consultation at the Colonial Office between 1829 and 1863.[343] In addition to the commercially produced maps, the catalog documents that many maps arriving from the colonies were stored in the Colonial Office. These maps, termed "official" in the catalog, were mainly those that could not be archived with the correspondence. They often arrived in separate cases, which was likely due to their size.

In addition to the official correspondence, multiple maps accumulated at the office from different individuals, including colonists, explorers and armchair geographers. Maps and tracings that were not considered to be useful were usually returned to the sender: in 1856 the retired explorer Charles Sturt, for example, forwarded information to the secretary of state, which consisted of a tracing and extracts of a report he had received from a member of Augustus C. Gregory's North Australian Expedition party. As the Office was already

339 Mitchell 2006.
340 Young 1961, 141; Mitchell 2006; Banton 2008, 137. In 1827, a L. Hebert succeeded Thompson, who was appointed to New South Wales for similar duties. Herbert worked as a cartographer and lithographer for the British government until 1838. See Liebenberg 2008.
341 These include The National Archives, the British Library and The Royal Geographical Society.
342 *Catalogue of the maps, plans and charts in the Library of the Colonial Office 1910*, Australia 1-3, South Australia 1-4, Western Australia 1-2.
343 *Catalogue of the maps, plans and charts in the Library of the Colonial Office 1910*, Australia 1-3, South Australia 1-4, Western Australia 1-2.

in possession of the tracing, it was returned.[344] On other occasions they were stored in the map library.[345]

The form of the material affected the way the maps were circulated and stored in London. As Jacob notes, the physical form of the map had an impact on its mobility and conditioned the possibilities for its use.[346] The good physical condition of the tracings that accompanied the dispatches was not a given: sometimes the tracings were almost too fragile to be used. In 1856, for example, the tracings by Augustus C. Gregory were in a very frail condition when they arrived in Britain. As they circulated between the civil servants, many noted that their condition required that they should be put away to keep them safe.[347] In addition to being fragile, the fact that maps consisted of multiple sheets created the possibility for confusion. Arrowsmith inspected the tracings and had them copied: when copying the fragments his copyist had nearly traced them in the wrong order, as they had apparently been mixed in the register of the Colonial Office. Therefore, Arrowsmith obtained permission from the librarian of the Colonial Office to take them away for arrangement and to have them put on cloth.[348]

In the colonies, the maps and plans were mainly located at the survey departments. Maintaining a well-organized record was essential for the functioning of the daily business that related to the selling of land and the development of settlements. However, as a report from the 1830s that refers to the Survey Department in New South Wales makes explicit, the existence of such an archive was not self-evident:

> [V]arious important Books are at present in a very defective state, amongst others the Board particularly noticed the Register of Deeds, one of which from decay of the Ink is scarcely legible; and the plans generally is so defective of information, that frequent reference to other officers is rendered necessary, which is unavoidably attended with much inconvenience and loss of time.
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> It was further brought to their notice, that the Catalogue of maps, commencing the 24th December 1827 is not sufficiently extended and that it requires to be remodeled so as to admit of the references and counter references being made with desirable facility.[349]

The description of illegible ink and incomplete catalogs indicates two particularly important factors that affected the management of the archive: the person in charge and

[344] A minute by Unwin 22 October 1856 in Sturt to Labouchere 20 October 1856, f. 391, CO 201/497, TNA.
[345] See, for example, the following maps in the collections of the National Archives: MPG 460, TNA; MPG 487, TNA; MPG 668, TNA; MPG 681, TNA.
[346] Jacob 2006, 80-81.
[347] A minute by Fortescue 15 October 1856 in Gregory to Labouchere 20 June 1856, f. 174, CO 201/497; Annotation by Merivale 15 October 1856 in Gregory to Labouchere 20 June 1856, f. 175, CO 201/497. For similar notions regarding the condition of the maps that were received, see, for example, the minute by Carnavaron 23 September 1858 in Barkly to Stanley 12 July 1858 no. 75, f. 44, CO 309/46, TNA.
[348] Annotation by Gairdner in Shaw to Merivale 29 October 1856, ff. 319-320, CO 201/496.
[349] "Report of a Board appointed by instructions conveyed in the Honorable the Colonial Secretary's letter of the 14th Dec 1833 to enquire into the state of the SGO, and to report on the assistance of additional clerks represented to be necessary in that Department. 1 September 1834" in Bourke to Stanley 5 October 1834 no. 103, ff. 9-25, CO 201/241, TNA.

available resources. The above-mentioned report had been commissioned by Thomas Mitchell, the head of the Survey Department, in order to prove that the resources at his disposal were inadequate. The investigation had been carried out in 1833 and the subsequent report depicted near chaos in the department that prevented it from functioning properly and also led to problems in other branches of government. The commissioners stated that the current levels of staffing were not sufficient to maintain a legible register or to keep plans up to date. Therefore, they concurred with Mitchell that the department required additional assistance.[350]

According to the notebook that contained the rules and regulations for the Surveyor General's Office, the different materials—maps, drawing material, paper and surveying instruments—were requested in 1828 to be stored in a room, located on the upper floor of the department. The maps were kept behind a locked door and were organized alphabetically. Only the surveyor-general and the chief draftsman had access to the room.[351] The first twenty-four pages in the notebook give a room-by-room description of how the Survey Department was organized, as well as the particular job requirements of those who worked there.[352] A similar set of rules was composed once the department relocated to MacQuarie Place. In this new location it was stated that in addition to keeping the documents safe they "ought to be also readily accessible when required".[353] We can contrast these ideals to the description about the state of the department, as reported by the commissioners in 1833. Furthermore, we can take note of the additional rules inserted by Mitchell and his deputy Samuel A. Perry (1787–1864) into the notebook. These new additions included a demand that the staff should be present at the department in order to perform their duties, as well as a stipulation that no documents should be taken outside the office.[354] These instances demonstrate that the everyday functioning of the department was entirely different than envisioned by the rulebook in the 1820s, despite the stable surroundings.

The governors aimed to monitor the quality of the work carried out at the survey departments by establishing a regular reporting system. This was meant to function in a similar manner as system whereby governors were required to report on progress that had

[350] "Report of a Board appointed by instructions conveyed in the Honorable the Colonial Secretary's letter of the 14th December 1833 to enquire into the state of the SGO, and to report on the assistance of additional clerks represented to be necessary in that Department. 1 Sep 1834" in Bourke to Stanley 5 October 1834 no. 103, ff. 9-25, CO 201/241, TNA.

[351] Rules and regulations of the Surveyor-Gen. Dep., 4-5, 5/2700 SRANSW. This notebook was a working document, as new memos and notes were added to it yearly. With ninety-five filled pages the notebook commenced in 1828, when Mitchell was appointed Surveyor General, and ran to 1867, when Surveyor General Walker Davidson entered the last note.

[352] Rules and regulations of the Surveyor-Gen. Dep., 1-24, 5/2700 SRANSW.

[353] Rules and regulations of the Surveyor-Gen. Dep., 65-66, 5/2700 SRANSW. See also pp. 67-68.

[354] "Report of a Board appointed by instructions conveyed in the Honorable the Colonial Secretary's letter of the 14th December 1833 to enquire into the state of the SGO, and to report on the assistance of additional clerks represented to be necessary in that Department. 1 Sep 1834" in Bourke to Stanley 5 October 1834 no. 103, ff. 9-25, CO 201/241, TNA; Rules and regulations of the Surveyor-Gen. Dep., 1-24, 5/2700 SRANSW.

been made to London. Tables and uniform report forms were particularly practical when attempting to follow the progress that had been made. The respective governors of New South Wales, for example, required Mitchell to collect information from his assistant surveyors. He enforced this by making them report their progress on a monthly basis with a particular report form. This form required a surveyor to report the distance and the square miles they had surveyed. In addition, surveyors were expected to report their observations about the character of soil, hills, rivers and woods, that is, all the main natural features.[355] The letters that accompanied the one-page forms provided detailed descriptions about the progress of the survey and angle sheets.[356]

In addition to sending monthly reports, the assistant surveyors also sent maps, plans and sketches from the field as records of their work.[357] The preparation of surveys was a means to convey more data than could be simply written.[358] However, drawing maps in the field—just like writing reports—was occasionally difficult as the supply of drawing paper was limited. Assistant surveyor James Ralfe noted that he did not have fresh sheets to draw a map on, for example, when transmitting a map of the area he had been surveying that was located on the coast of New South Wales (from Manning River in the south to Trial Bay in the north). Instead, he drew his observations on a rough reference map he had prepared for himself when departing for the field.[359]

Tables and maps were easy formats with which to examine and draw conclusions for those reviewing the progress that had been made. The maps prepared in the field were transmitted to Sydney for inspection. As the information was presented in a condensed form—either as a figure, a generalization or a layout of the land with place names—it was easy to compare them to the older documents and judge the progress that had been made. This is evident in the case of Ralfe's map. Once the map reached the Survey Department,

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355 See "Monthly Report of the Progress of the Surveying Party" in Ralfe to Mitchell 25 February 1829, DLSGIL3:3, SLNSW. For the instructions given to the surveyors in Western Australian, see General Instructions for Ass. Surveyors detached from head Quarters in Roe to the Colonial Secretary 21 March 1839, vol. 72/24-27, CSR, 2941, SROWA.

356 See Ralfe to Mitchell 25 February 1829, DLSGIL3:3, SLNSW; Ralfe to Mitchell 4 August 1830, DLSGIL3:3, SLNSW; Govitt to Mitchell 1 July 1831, DLSGIL2:2, SLNSW; Hoddle to Mitchell 3 January 1828, DLSGIL2:2, SLNSW; Hoddle to Mitchell 13 November 1828, DLSGIL2:2, SLNSW; Ogilvie to Mitchell 28 March 1829 DLSGIL2:2, SLNSW; Ogilvie to Mitchell 10 May 1829, DLSGIL2:2, SLNSW; Matthew to Mitchell 17 Feb 1831, DLSGIL1:1, SLNSW; Matthew to Mitchell 1 November 1831, DLSGIL1:1, SLNSW; White to Mitchell 9 July 1831, DLSGIL5:5, SLNSW.

357 See Ralfe to Mitchell 31 May 1831, DLSGIL3:3, SLNSW; Ralfe to Mitchel 31 July 1831, DLSGIL3:3, SLNSW; Ralfe to Mitchell 4 November 1831, DLSGIL3:3, SLNSW; Ralfe to Mitchell 30 June 1834, DLSGIL3:3, SLNSW; Govitt to Mitchell 31 October 1831, DLSDIL2:2, SLNSW; Hoddle to Mitchell 3 January 1828, DLSGIL2:2, SLNSW; Ogilvie to Mitchell 15 October 1830, DLSGIL2:2, SLNSW; Ogilvie 23 October 1831, DLSGIL2:2, SLNSW; Matthew to Mitchell 18 October 1831, DLSGIL1:1, SLNSW; Matthew to Mitchell 1 November 1831, DLSGIL1:1, SLNSW; Matthew to Mitchell 19 November 1831, DLSGIL1:1, SLNSW; White to Mitchell 14 May 1833 DLSGIL5:5, SLNSW.

358 Hoddle to Mitchell 9 July 1830, DLSGIL2:2, SLNSW.

359 Ralfe to Mitchell 31 May 1831, DLSGIL3:3, SLNSW. On the demand for fresh material, see also Ogilvie to Mitchell 10 July 1829, DLSGIL2:2, SLNSW; Ogilvie to Mitchell 2 June 1832, DLSGIL2:2, SLNSW; Ogilvie to Mitchell 3 September 1832, DLSGIL2;2, SLNSW; Matthew to Mitchell 17 Feb 1831, DLSGIL1:1, SLNSW; Matthew to Mitchell 20 June 1831, DLSGIL1:1, SLNSW.

deputy surveyor general Samuel Perry noted that the map actually contained less information than what was already known about the area. Perry concluded that Ralfe's record of progress appeared to be "worse than nothing", as he clearly had not been aware of what was already known.[360] On this occasion, the usual practice of inserting new information onto a general map and preparing new improved maps to guide the surveyors in their work was not possible.[361]

On the other side of the continent, surveyor general Roe was in a rather different position. Roe's correspondence with the Colonial Secretary documents the challenges faced at the time, in terms of not only producing maps and plans, but also of maintaining them due to the work environment. In 1839, for example, Roe noted that the building occupied by the department was so weak that he feared the ceiling would fall down "causing very serious mischief to my instruments and charts". In his opinion, it was a necessity to have a safe room for the execution of the work and the preservation of the equipment.[362] Over two decades later Roe made a similar point about the challenges posed by his working environment. He was so concerned about the safety of the maps and plans at the department that he wrote to the colonial secretary and stated that the "Maps and Plans of this Department are suffering so seriously from want of an additional Chart Press for their classification and safekeeping" that urgent action was needed.[363] The different conditions that affected the management of the Survey Department surfaced again a few years later, when governor John Hampton (1810–1869) wrote to London in 1862 in order to suggest substantial reorganization. One part of his plan was to appoint an additional draughtsman, "which is greatly needed to place Maps and other documents in a proper condition" and a record keeper to resolve the arrears the department was then suffering.[364] Consequently, a major hindrance to the management and preservation of the records centered on the material surroundings, or as Roe's examples demonstrate, the lack of them.

How many maps, plans and charts were managed by the survey departments? This is a difficult question to answer comprehensively, but the correspondence between the colonies and the Colonial Office contain many letters that document the character of the map collections. For example, Mitchell himself compiled a table of the maps at the department

[360] A minute by Perry in Ralfe to Mitchell 31 May 1831, DLSGIL3:3, SLNSW.
[361] These practices are explicit in the internal correspondence of The Survey Department. See Hoddle to Mitchell 10 December 1828, DLSGIL2:2, SLNSW; Hoddle to Mitchell 9 July 1830, DLSGIL2:2, SLNSW; Ralfe to Mitchell 30 June 1834, DLSGIL3:3, SLNSW; Ralfe to Mitchell 26 January 1835, DLSGIL3:3, SLNSW. The maps prepared in the field were transmitted to Sydney for inspection, where information was inserted into the general map. In addition, based on the information gained, the draftsmen prepared an improved version of the maps derived from the field. These were sent back to the field to guide the surveyors in their work.
[362] Roe to Colonial Secretary 22 January 1839, 11, CSR vol. 72, series 2941, SROWA. See also the comments regarding the need to provide the surveyors with good working environments. See Roe to the Colonial Secretary 21 March 1839, 24, CSR vol. 72, series 2941, SROWA; Roe to the Colonial Secretary 26 July 1843, 38, CSR vol. 124, series 2941, SROWA.
[363] See Roe to the Colonial Secretary 27 January 1859 no. 1078, 143, CSR vol. 386, series 2941, SROWA.
[364] Hampton to Newcastle11 June 1862 no. 69, 17-20, CO 18/124, TNA.

in a report about his style of management. The table consisted of five different classes of map: cataloged maps, sketches prepared for references, maps of the parishes in Cumberland county, hundreds of maps prepared to accompany the parish maps of Cumberland and maps prepared for public inspection. In total, the office housed 2928 maps, demonstrating the efforts that had been made to translate the country into easily manageable documents.[365] The list contained the maps that had been prepared at the department, but not, for example, the ones that had been acquired elsewhere, such as Mitchell's map of the nineteen counties.

Further perusal of the collection of maps at the survey departments demonstrates that in addition to the maps prepared at the government offices, the survey departments acquired maps that had been prepared, printed and published in the colonies by different individuals. For example, the New South Wales Survey Department purchased a copy of a map that depicted land that had not been surveyed, which had been prepared by William Gardner, and a map of Moreton Bay published by Robert Dixon (1800–1858), Mitchell's assistant surveyor. These maps were sold privately in the colony. Both of the maps had been acquired, as Mitchell wanted to be able to utilize the data they contained.[366] In Gardner's case, most of the information proved rather inaccurate, but this was not the case with Dixon's map. Dixon had compiled it "entirely from Surveys or documents, which came into his hands in his official capacity" and published it without the authorization of the governor.[367]

Furthermore, the collections included maps prepared in Britain, but also elsewhere in Europe. The maps that accumulated at the Survey Department of Western Australia, for example, contained various maps produced by Arrowsmith.[368] In addition to Arrowsmith's maps, the collection of the Survey Department of Western Australia included depictions of Western Australia and New Zealand by the German cartographer Augustus Petermann

365 "Return of the number of maps deposited in the Surveyor General's Office in New South Wales" in Bourke to Stanley 10 October 1834 no. 104, f. 102, CO 201/241, TNA.

366 The acquisition of the map by Gardner is documented in the correspondence with the Colonial Secretary that has been printed with the description of the map prepared by Gardner currently stored at the National Library of Australia. See Gardner, *Description of a map of the five northern districts beyond the boundary of location in New South Wales,* mfm G 6747 -6748, NLA. The acquisition of the map by Dixon is documented in the correspondence of Mitchell and governor Gipps. See Mitchell to the Colonial Secretary 28 April 1842, no. 42/170, 129, 4/5407, SRANSW; Gipps to Stanley 27 October 1842 no. 201, f. 205, CO 201/324, TNA.

367 Gipps to Stanley 27 October 1842 no. 201, f. 205, CO 201/324, TNA.

368 The survey department in New South Wales had at least one map by Arrowsmith and also maps of Australia by the London-based cartographer Joshua Archer. See Sketch books, Reel 2780 vol. 8, fol. 36, 54, SRANSW; Sketch books, Reel 6333, SRANSW; "Report from the Commissioners appointed to inquire into the Surveyor General's Department, with Minutes of Evidence and Appendix. Sydney 1855" in Denison to Newcastle 13 October 1855 no. 163, f. 308, CO 201/486, TNA. For the maps in the collection of the survey department in Western Australia, see, for example, the following: Arrowsmith, *The Colony of Western Australia* [...], 1839, item 124, series 50, SROWA; Arrowsmith, *The Colony of Western Australia* [...], 1839, item 124A, series 50, SROWA; Fragment of John Arrowsmith's map of Australia London 1850 (Eastern and Central Australia), item 160, series 50, SROWA; Arrowsmith, *The Colony of Western Australia* [...] 1862, item 094A, series 50, SROWA; Arrowsmith, *The Colony of Western Australia* [...] 1862, item 094, series 50, SROWA.

among others.[369] The availability of maps prepared overseas, however, did not imply that they were easy to use. In fact, they quickly became outdated as the surveys progressed. For example, Roe documents how he disliked using a French chart depicting Shark's Bay, as they were originally based on surveys carried out by surveyor and naturalist Louis de Freycinet (1779-1842) at the beginning of the century that were very inaccurate. Despite these shortcomings, it was the only map available of the area. Hence, Roe considered it somewhat useful until new maps were prepared.[370]

Consequently, it is evident that the movement of maps was multidirectional, as they traveled to and from London and the colonies. Governors and surveyor-generals requested that the newest published maps of Australia, for example, should be sent to the colonies. These requests stemmed from a desire to have the latest information at hand in the form of a new map. In 1838, Roe asked if the governor could order two distinct maps from Britain: he wanted two copies of "plate 2 of atlas Andies chart of South Coast of Australia" and two copies of "sheet 8 of atlas Kings chart of West Coast of ditto".[371] Similarly, in 1855 he made a request to obtain four copies of the latest maps of Australia and Western Australia by John Arrowsmith for use in the Survey Department.[372] For Roe, Arrowsmith's maps of Western Australia were the most useful maps of the colony. Judging by the three different versions of these maps in the Colonial Office map library, it seems they were also a popular choice among the civil servants in London.[373]

Furthermore, the governors also made requests to the Admiralty regarding the delivery of maps on a larger scale to meet their demands. However, it was not always easy to comply with these requests. In 1855, for example, maps depicting the Gulf of Vincent were transmitted to South Australia. This was over three years after they had initially been requested. This appears to have been due to a misunderstanding regarding the type of map that was needed. In 1855, after the department had been reminded about the request, a specially designed plan of the gulf, replete with the latest data, was forwarded to the colony.[374]

These colonial "archives" gain further significance if they are contrasted with those maintained in London. Indeed, it is interesting to note the attempts that were made, beginning in the late 1840s, to synchronize the contents of the "archives" in the colonies and

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[369] Petermann, *West Australiaen, Tasmania, Neu Seeland*, Gotha, Justus Perthes 1863 item 183, series 50, SROWA.
[370] Roe to the Colonial Secretary 1 July 1851 no. 866, 68-71, vol. 226, CSR, 2941, SROWA. For Freycinet, see Marchant and Reynolds 1966.
[371] Stirling to Glenelg 26 March 1837 no. 192, f. 156, CO 18/18, TNA. For similar examples of Roe's requests, see Roe to the Colonial Secretary 30 March 1852 no. 885, vol. 252/165, CSR, 2941, SROWA.
[372] Roe to the Colonial Secretary 25 August 1855 no. 1018, 199-200, vol. 342, CSR, 2941, SROWA.
[373] The catalog of the map library documents that the civil servants acquired three different versions of the map between 1839 and 1856. See *Catalogue of the maps, plans and charts in the Library of the Colonial Office 1910*, Western Australia 1-2.
[374] See Admiralty to Merivale 29 January 1855, ff. 5-6, CO 13/92, TNA; Draft to the Governor of South Australia 3 February 1855 in Admiralty to Merivale 29 January 1855, ff. 7-8, CO 13/92, TNA; Osborne to Merivale 28 July 1855, f. 9, CO 13/92, TNA; Draft to MacDonnell 4 August 1855 in Osborne to Merivale 28 July 1855, f. 10, CO 13/92, TNA.

London. As the decades passed, the cartographic information stored in the archives in the colonies motivated the civil servants from the government departments in London to instigate a similar system. Thus, they began to systematically collect the maps, instead of simply relying on the ad hoc collection that had accumulated at the Colonial Office. In practice, this meant that the secretaries of state for the colonies sent out multiple circulars requesting the preparation of maps to send to London. These maps were usually collected for recordkeeping and to assist in the more efficient functioning of other government departments.[375] Maps were collected, for example, from the Australian colonies for use by the Commissioners of Colonial Land and Emigration in order for them to have the most up-to-date information regarding the land that had been acquired or leased by the Crown since the late 1840s.[376]

Efforts to systematically collect information about overseas areas in the 1850s became increasingly institutionalized and accelerated. This created a new outlet for cartographical data. In 1855, a topographical department was established at the War Office in order to enhance the systematic collection of topographical data. The Crimean War had revealed grave deficiencies in British geographical intelligence. The department initially functioned in a somewhat stagnant manner, but in 1857 it merged with the Military Depot, thereby creating a topographical and statistical department.[377] These developments reflected the new reliance on informational data that developed during the course of the century.[378] The aim of the department was to collect topographical data from all parts of the world and to gather "the most perfect information which can be obtained".[379] In practice this meant collecting data from the colonies on the character of the surveys that had already been executed or were in progress. It also entailed making requests for information about the amount, scale and price of the surveys, in addition to asking for copies of maps. The colonial administrations were requested to furnish these details with an indexed map of respective colonies in order to enable the location of districts in which particular scales had been applied. In addition to the letters that were sent to Australia, the Imperial administration also assessed whether the principles used by the Ordnance Survey should be extended to the colonies and if a uniform scale could be used in order to adopt a consistent system in the

[375] See Circular 31 October 1848, GRG2/1/8, SROSA; Circular 31 October 1848. NRS 4512, SRANSW; Circular 31 March 1862, GRG2/1/22, SROSA; Circular 1 April 1861, GRG2/1/21, SROSA.
[376] Circular 31 October 1848, GRG2/1/8, SROSA; Circular 31 October 1848. NRS 4512. SRANSW.
[377] Heffernan 1996, 506; Black 2014, 297–98.
[378] Black 2014, 290–311.
[379] Hawes to Secretary of State 31 December 1857 in Circular 27 January 1858, GRG2/1/18, SROSA.

empire.[380] The efforts to systematically collect cartographical data from the colonies were matched with similar efforts in other fields of knowledge: the Colonial Office coordinated the gathering of information about government-funded books and maps, for example, as well as works on natural history that had been published in the colonies in order to gain a comparative view of the Empire.[381]

The work of the topographical department materialized in circulars sent to the colonies by the Colonial Office, who often made requests to the colonial authorities for the production of map copies.[382] The governors were ordered to send maps of the colonies to London at the beginning of 1858, for example, as well as furnishing the War Office with the most accurate information about the topography of the colonies.[383] This circular was sent with two returns that had to be filled: one focused on the existing maps and plans and the other enquired about the state of the surveys that were in progress. The general idea was that by analyzing how the surveys were carried out in different colonies, the same apparatus and methods could be used anywhere to execute surveys.[384] Specific additional requests could be made to have maps sent to the collections of the War Office. Governor Richard MacDonnell in South Australia, for example, was asked to deliver copies of maps that were not available in Britain. The two lists sent to Adelaide contained printed maps that could not be bought, as well as manuscript maps that Lytton wished to obtain. The lists contained five maps in total. Three of the requested maps were special plans of districts and two were general maps. [385]

The requests for the preparation of copies of different maps created extra work for the departments, which were already struggling to function with limited resources. The governors were occasionally instructed to fulfill a request if it did not necessitate "considerable outlay", as in the above example of the maps ordered by the secretary of state for the Colonial Land and Emigration Commission.[386] The governors and the surveyor-generals usually made special arrangements in order to be able to deliver the requested maps, but a

[380] The colonies were informed about the scales that had been adopted at home and encouraged to use a uniform system if possible. For example, Colonel Henry James, the Superintendent of the Ordnance Survey, suggested that the property surveys should be executed on a scale of 25,000 inches to a mile in order to make them useful for any purpose. See "Extract of a letter from Lieut.-Colonel James, R. E. 28 August 1856" in Circular 10 January 1857, GRG2/1/17, SROSA; Hawes to the Secretary of State 31 December 1857 in a circular dated 27 January 1858, GRG2/1/18, SROSA; a circular dated 2 June 1856, 253-254, vol. 3, VPRS 1088, PROV; Circular 10 January 1857, 15, vol. 4, GRG2/1/8, SROSA.
[381] See the circular of 28 June 1860, GRG2/1/20, SROSA; a circular dated 1 April 1861, GRG2/1/21, SROSA; Panizzi to Newcastle March 1861 in a circular from 1 April 1861, GRG2/1/21, SROSA. The British Museum was interested in acquiring a comprehensive list of government-funded publications.
[382] A circular dated 27 January 1858, 313, vol. 4, VPRS 1088, PROV; Circular 27 January 1858, GRG2/1/18, SROSA.
[383] A circular dated 27 January 1858, GRG2/1/18, SROSA.
[384] Hawes to Secretary of State 31 December 1857 in Circular 27 January 1858, GRG2/1/18, SROSA.
[385] Lytton to MacDonnell 20 November 1858 no. 22, GRG2/1/18, SROSA. In a similar manner, the Governor of Victoria was requested to supply London with more copies of the maps that had previously been transferred. For the official response to this request, see Barkly to Lytton 19 February 1859 no. 21, f. 174, CO 309/48, TNA.
[386] Circular 31 October 1848, GRG2/1/8, SROSA. See also the circular of 31 March 1862, GRG2/1/22, SROSA.

great deal depended on the type of work needed to deliver the maps. At times the surveyor-generals admitted that resources made it impossible for them to quickly compile new maps of the colony. For example, Roe reported about the situation in Western Australia in 1849 and noted that "the preparation of a large plan of the territory, such as that now in hand, is a work of great labor and time, and fully occupies every moment that can be given to it". Furthermore, he noted that tracings of the districts that had not yet been forwarded to London would be sent as soon as the "very small means at disposal in the drafting room will admit". He noted, however, that they would not be ready in less than six months without extra staff.[387] Roe was finally able to forward the map of the colony to the colonial secretary in 1850.[388] The fulfillment of later requests was similarly challenging. In August 1862, governor John Hampton explained the situation in his dispatch:

> [A]s a consequence of the insufficiency of the staff of the Survey Department [...] it is not possible, at present to furnish copies of all manuscript plans or maps of the colony without causing serious inconvenience to public business.[389]

Thus, compliance with the request would have to wait until the Survey Department was functioning more efficiently.[390] In the case of Western Australia, a formal request was no guarantee that maps would actually be received.

Diverse information is available regarding the maps and plans that were transmitted to Britain. Some dispatches contain details or lists of the maps that were sent.[391] The replies to the circulars demonstrate how the maps that were transmitted were chosen: for civil servants in the colonies to reply to general requests for maps and plans that already existed or were in the process of being prepared required them to determine what would be interesting for the officials in Britain. In Victoria, for example, this meant leaving out the maps that detailed the everyday work relating to land sales.[392]

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387 Roe to the Colonial Secretary 2 July 1849 in Fitzgerald to Grey 4 July 1849 no. 60, ff. 146-147, CO 18/51, TNA. In a similar manner, civil servants in Adelaide noted that it would be necessary to hire additional staff to complete a request that had been made to furnish the British Museum with copies of the maps that had been published. The transmission of copies of the lithographed maps and plans was easy, but the special preparation of this order required additional manpower. See Annotations in the circular of 1 April 1861, GRG2/1/21, SROSA.

388 Roe to the Colonial Secretary 16 October 1850 no. 642, 80, vol. 208, CSR, 2941, SROWA.

389 Hampton to Newcastle 19 August 1862 no. 102, f. 252, CO 18/124, TNA.

390 Hampton to Newcastle 19 August 1862 no. 102, f. 252, CO 18/124, TNA.

391 For example, no list remains of the maps that were transmitted from Victoria in August 1861. Details are available of the maps Governor Bowen sent to Britain in 1862 from Queensland, for example, and the dispatch from New South Wales that was sent in February 1864 documents that a total of 64 maps were sent in response to a circular of October 1863. See Barkly to Newcastle 23 August 1861 no. 93, f. 82, CO 309/61, TNA; Bowen to Newcastle 2 July 1862 no. 32, f. 293, CO 234/5, TNA; Young to Newcastle 20 February 1864 no. 19, ff. 123-131, CO 201/530, TNA.

392 Barkly to Newcastle 23 August 1861 no. 93, f. 82, CO 309/61, TNA.

The replies also make visible the significance of private map production in the colonies. These maps often accompanied the official maps that were transmitted from the colonies.[393] When replying to requests made in 1848 regarding maps that depicted the lands that had been acquired or leased by the Crown, for example, surveyor general Thomas Mitchell reported that he was not aware of any other published maps besides *Baker's Atlas* of the counties. Mitchell recommended consulting this atlas, which William Baker (1806-1857), a Dublin-born engraver, had first prepared 1843 and updated with regular new editions.[394] Similarly, the maps transmitted from Victoria contained a depiction of the colony that had been published privately, but which had then been amended at the Survey Department. In transmitting copies of the map, governor Henry Barkly (1815–1898) explained that the original version did not contain the details about the trigonometric survey that was then in progress. Instead, they had "been added on the copy [...] by the draftsmen in the Survey Office".[395] Consequently, the maps that were sent (or in the case of Western Australia not sent) in response to the circulars reveal the multifaceted nature of cartographic practices in the colonies. These practices were affected by the resources that were available at the survey department, but also by the work of other individuals, like commercial actors, in the colonies.

The Topographical Department accumulated a systematic collection of maps from across the globe that enabled it to publish maps of its own. A report to the House of Commons in 1862 documented that the department had produced two trace maps of Australia for reference (one of South Australia and one of Western Australia) and a projection of Victoria since its establishment in 1855. These quantities are comparable to maps that depicted other parts of the world, such as general maps of Europe and South America.[396] The systematic collection of maps organized by the Topographical Department seems to have also grown the collections at the Map Library at the Colonial Office. When receiving maps from Victoria in May 1859, for example, the civil servants noted that two copies of each map should be sent to the War Office, with the remainder being stored in the library.[397]

British efforts to gain access to all the topographical information in the world and to produce systematic collections of maps and books are illustrative of instances where the results of these collection efforts were greatly affected by daily practicalities in the colonies. Furthermore, the availability of different types of maps at the use of the surveyor-generals and other officials depended on many mundane aspects. These included, among others, that the government departments in Britain remembered to deliver the maps that

[393] For mention of these maps, see, for example, Barkly to Lytton 19 February 1859 no. 21, f. 173, CO 309/48, TNA; List of plans furnished for the Home Government in Barkly to Lytton 19 February 1859 no. 21, f. 180, CO 309/48, TNA.
[394] Mitchell's letter 26 March 1849 in Fitzroy to Grey 22 June 1849 no. 132, ff. 252-253, CO 201/414, TNA. For the map mentioned, see Baker, W. *Baker's Australian county atlas dedicated by the publisher to Sir T.L. Mitchell ... showing the various parishes, townships, grants, purchases and unlocated lands*, 1843, MAP RaA 8, NLA.
[395] Barkly to Lytton 19 February 1859 no. 21, f. 174, CO 309/48, TNA.
[396] See *A Return of All the Maps, Charts, Plans, Tables, and Diagrams Published by the Topographical and Statistical Department of the War Office, From the Year 1855 to the Present Time*, 1862.
[397] A minute by Smith 23 May 1859 in Barkly to Lytton 19 February 1859 no. 21, f. 174, CO 309/48, TNA.

had been requested as was the case with the Admiralty and the South Australian colony. The character of the material that circulated accumulated was to a certain extent intentional and practical: Barkly's decision not to send copies of the maps in daily use in Victoria reminds us that the maps used in one place were not self-evidently valuable elsewhere. The examples discussed above demonstrate that the limited circulation of material and its consequences for the availability of maps in London and in the colonies depended also on many other factors. Private map publications in New South Wales, by members of the Survey Department, influenced the speed and form of information that became public and available for officials to use. In Western Australia, Roe relied on John Arrowsmith to publish updated maps of the colony based on the data his department produced. This was presumably the result of the limited resources at his disposal. Indeed, no resources existed at the Survey Department to be able to maintain an up-to-date map of the colony.

These instances are demonstrative of the practicalities that affected the movements of materials and thus knowledge circulation. Simultaneously, they bring to the fore how the system of knowing, in spite of its "flaws" continued to work. These points effectively draw attention to the character of the archives of maps that were made and the collections of maps that exist today. As Tony Ballantyne points out, they should not merely be viewed as repositories of colonial records, but as collections of material that accumulated as a result of particular practices of the time. The way in which the Colonial Office and the survey departments in the colonies traded material demonstrates the practice that Ballantyne deems important to recognize: how the porous and fluid nature of the archives of the Empire should be examined and how the archives should be seen as "the products of constant circulation and heavy intertextuality".[398] The archives at the use of different actors were not all-encompassing but the result of many daily efforts to gain particular materials in search for information and preserve them in a right manner.

Chapter Conclusions

In this chapter I have examined the different practices and contexts that affected how geographical and cartographical material accumulated in the government offices in the Australian colonies and in London. The practices of communication served the generation of knowledge that was seeking to understand the continent via geographical means. The communications make clear that the governors and, on many occasions, the civil servants in London, struggled to access the right documents for various reasons. Thus, the networks of communication emerge as somewhat chaotic sites of knowledge making. They constituted "geographical archives" that were the result of a disordered and organic chains of events. The reactions to instances of disarray, missing documents or issues of credibility showcase how the administrators were highly conscious of the flaws in the system. This

[398] Ballantyne 2014, 189.

observation corresponds to Matthew Edney's characterization of the processes leading to the accumulation of a geographic archive in the context of British surveys of India in the late eighteenth and early nineteenth century.[399]

The processes that constituted the evolving comprehension of the continent and its characteristics emerge as something that was conditioned by economic and societal contexts, rather than as a uniform geographical and temporal system of knowing.[400] The way maps were read and discussed in the process of administering the colonies demonstrates the variability of imperial mapping and directs attention to how maps were merely one means of expressing spatial relations. However, I stress that the examples analyzed in the present study do not attempt to be comprehensive, but are rather illustrative of the different situations that affected the circulation of knowledge between the various offices.

As a result of the knowledge-work carried out at the government offices in the Australian colonies and in London, the different types of document were put into perspective. The governors were knowledge-brokers that enhanced the civil servants' accessibility to the knowledge that was evolving in the colonies. They linked the Colonial Office to the colonies by offering them different types of tools for knowing, starting with their dispatches but including all the different enclosures. The civil servants evaluated the credibility of the information that arrived on their desks and examined the claims made in the reports, maps and dispatches. The circuits of communication and the processes of knowledge formation were conditioned to a large extent by different written rules, but also by the simple availability of knowledge that was to be communicated. As a result of the systematic circulation of different material, the civil servants succeeded in establishing geographical conceptualizations and archives of geographical and cartographical knowledge at offices across the globe. The interpretations and the acknowledged value of the documents that circulated and the claims made about the Australian environment depended on the quality and credibility of the information available, as well as on the socio-economic context. Consequently, all of the texts, maps, illustrations and specimens that were sent from the Australian colonies to Britain were potential tools that could be employed to shape colonial governance and policies. Yet, in practice this did not transpire.

By paying attention to the practices of knowledge-work, this chapter has provided us with an understanding of why the information available in different locations varied and, more importantly, what implications this had for the conclusions that were drawn. Simultaneously, it has brought to the fore how interconnected the different locations of knowledge-work across the globe were. Furthermore, the observations made in this chapter can be taken as starting points for an analysis of why particular information became public in one location in a certain form. I will next examine what happened to the different reports, sketches and maps that arrived in London before they were archived in the library and the records department of the Colonial Office.

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[399] Edney 1997, 30.
[400] Compare with Edney 2009, 17-18, 43-44.

2 TWO CIRCUITS OF PUBLISHING GEOGRAPHICAL KNOWLEDGE IN LONDON

As the previous chapter demonstrated, explorers and surveyors, alongside other actors, produced an abundant amount of geographical information that they communicated in different forms—orally, textually, cartographically, visually and through different types of artifacts—to civil servants in London and governors in the Australian colonies. These circuits for transmitting information from the field to government offices constituted a portion of the processes whereby an understanding of the Australian colonies and the continent as a geographical and governable space was established. To continue my examination of the practices contributing to the formation of geographical knowledge, I will now investigate what happened to the different material in London. The consequent movements of information were extremely important in the processes of making knowledge. The ways in which information was shared and made available to others to peruse and use played a vital and foundational role in this process, as it incrementally led to the "filling in of the blanks" that Europeans projected on the continent.

The process of publicizing the knowledge that was produced in the field in different parts of the Australian continent in the colonies, Britain and Europe was multifaceted. Previous scholarship focusing on these processes has identified how the conversion of exploration and survey data into published maps, illustrations and travel accounts during the nineteenth century in Europe occurred as a shared process. Field notes and sketches produced by explorers, which derived from different parts of the world, were converted into finished products that were then relayed to the public. Numerous scholars have examined the processes whereby such field notes and sketches were transformed into published travel accounts and illustrations, thereby materializing the environments that had been encountered. Besides explorers, other professionals, such as engravers, publishers, geographers and cartographers, were also involved in these processes. This scholarship has not only made visible the contingent practices of fieldwork—how things were recorded and knowledge was produced—but also the complex process of transforming material into publishable forms.[401]

[401] See, for example, studies conducted by Bridges 1987; MacLaren 1992; MacLaren 2003; Koivunen 2009; Withers and Keighren 2011; Keighren, Withers, and Bell 2015.

However, the practices of circulation that constituted types of publication other than travel accounts, as well as the intersections between them, has been largely overlooked. The preparation of travel accounts was a lengthy process. Consequently, it was not unusual for information about the expeditions to enter the public domain through other channels. The role of civil servants was crucial, as they transmitted information to different parties. This enabled the publication of the new information in London in different formats. Indeed, the task of circulating new intelligence from "faraway" lands emerges as an important aspect of the "system of knowing" that was managed by civil servants.

In this chapter I examine two distinct channels that civil servants in London used to circulate information from the colonies as part of their daily administrative tasks. More specifically, I scrutinize two channels of communication: the publication of parliamentary papers by the government and the works of the Royal Geographical Society (RGS). Other actors also played a role in these practices of circulation, especially individuals and organizations deemed by civil servants to be suitable transmitters of information about recent developments. Yet, in terms of the systematic processing geographical and cartographical data and in then making it public, the two "routes" outlined above were the most important. This was particularly true when the civil servants engaged in circulating the textual materials received to be communicated to the public. However, it should be noted that these different circuits often intersected and therefore they can be seen as complimentary and intertwined. Consequently, in order to understand what the geographical and cartographical archives that accumulated actually meant, I will next investigate the different practices involved in the circulation of the material in London.

Parliamentary and Public Geographies

The Conglomeration and Compilation of Texts for Parliamentary Papers

> I beg to express to you my acknowledgements for this highly useful and interesting report and I have thought it right to give publicity to it by laying it before Parliament, and by circulating it amongst such Societies as may appreciate it. I shall be glad to receive from time to time reports which may come to inform the Public of the actual state and the prospects of the important Colony under Your Government.[402]

In February 1841, the civil servants at the Colonial Office were pleased. They were surprised to read an interesting dispatch by governor George Gipps regarding the progress of discovery in New South Wales. James Stephen concluded that "the fruit of the admonition conveyed some months ago to Sir G. Gipps to be less dry and more communicative in his

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[402] Draft letter to Gipps 7 April 1841 no. 239 in Gipps to Russell 28 September 1840 no. 139, ff. 167–168, CO 201/299, TNA.

Despatches" had been digested. Indeed, he even suggested that the papers should be communicated to the RGS and John Arrowsmith.[403] Vernon Smith (1800–1873) added the Parliament to the list and noted that Gipps should be encouraged to continue sending reports like this.[404] Consequently, within a month of receiving the dispatch from Gipps, George Mayer, the Colonial Office librarian, who was responsible at the time for preparing the papers to be printed, published the governor's report.[405] Gipps was informed that accounts like this would be appreciated in the future, as they could be used to inform "the Public of the actual state and the prospects of the important colony".[406]

The published papers consisted of Gipps's dispatch, as well as four other texts by the governor and six maps that he had forwarded to London. The additional texts attached to the dispatch were reports compiled by explorers and surveyors detailing the progress of their respective endeavors.[407] Copies of the dispatch were communicated to the RGS after the papers had been prepared and also to the Geological Society and the Statistical Society, judging by the prepared draft.[408] As a result of being printed in the parliamentary papers, Gipps's dispatch received attention in some newspapers: the contents of the dispatch were reported, for example, in *The Times*, as well as in the colonial press.[409]

The printing of these papers provides a fitting example of how civil servants sought to disseminate the geographical information they had received from colonial governors. On this occasion the main motivation for printing stemmed from Gipps's ability to report about the progress that had been made in New South Wales in an eloquent manner, as well as the important subject matter that needed to be communicated. According to Stephen, previous dispatches had lacked these essential qualities. Furthermore, the publication brought before parliament and public alike an array of maps demonstrating the developments that had taken place in New South Wales. John Arrowsmith's cartographical company prepared most of the maps by lithographing the manuscript maps that had been received with Gipps's dispatch. The printed maps showed the relative positions of land in Port Phillip and north of Port Macquarie. Two other maps were printed with the papers. They constituted the results of a survey organized to determine the position of the 141° East longitude on the

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403 A minute by Stephen 19 February 1841 in Gipps to Russell 28 September 1840 no. 139, f. 169, CO 201/299, TNA.
404 A minute by Smith 19 February 1841 in Gipps to Russell 28 September 1840 no. 139, f. 169, CO 201/299, TNA
405 A minute by Mayer s. d. in Gipps to Russell 28 September 1840 no. 139, f. 169, CO 201/299, TNA; *New South Wales* 1841.
406 Draft to Gipps 7 April 1841 in Gipps to Russell 28 September 1840 no. 139, 167-168, CO 201/299, TNA.
407 The reports that were printed as an appendix to the despatch were: "Report by the Deputy Surveyor-General on the Clarence River; June 1839", "Report of the Progress of the Survey at Moreton Bay", "Report by Count Streleski" and "Report of an Expedition to ascertain the Position of the 141st Degree of East Longitude, being the Boundary Line between New South Wales and South Australia, by Order of Sir G. Gipps, Knight, Governor and Captain-General of New South Wales;—by C. J. Tyers, Surveyor". See *New South Wales* 1841, 8-32.
408 Draft to the secretary of the Royal Geographical Society 21 April 1841 in Gipps to Russell 28 September 1840 no. 139, f. 168, CO 201/299, TNA.
409 "Late Discoveries in Australia", *Australasian Chronicle*, 17 July 1841, 2; "News From England by the 'John Campbell'", *Port Phillip Patriot and Melbourne Advertiser,* 23 August 1841, 1.

ground, as well as one based on a map published by Robert Dixon, the colony's assistant surveyor.[410]

The preparation of such parliamentary papers was the official and primary way that civil servants at the Colonial Office communicated information they received to the public. Tens of thousands of pages relating to the Australian colonies, replete with text and tables, were printed in the parliamentary papers. In general, parliamentary papers included all the official records of parliament. They can be divided into papers relating to parliamentary business and those that informed parliament about matters related to state affairs. Papers dealing with matters of administration and policy were prepared either as so-called house papers at Parliament, or as papers produced by other government departments and Royal Commissions. House papers included bills, returns, acts of parliament and reports from House Committees. Papers from outside parliament, such as those that were prepared at the Colonial Office discussed here, were reports on particular matters that were prepared to inform both houses of parliament. They were presented either to the commission, the department's supervisory board, or by command to parliament. These two groups of papers from outside parliament can be distinguished from the papers that contained information about the proceedings of the House of Commons.[411]

In general, the printed papers communicated information about the British colonies to both houses of parliament and to the public. Parliamentary papers were sold in a similar manner as parliamentary proceedings, which documented the discussions that had taken place. In addition to being a period of parliamentary reform, the 1830s marked a general change in the way information was made available outside parliament. In 1835, Blue Books began to be sold to the public. Almost simultaneously the same strategy was adopted with the proceedings and some other papers.[412] The price of the papers that were sold at Her Majesty's Stationary Office varied, as did the amount that were printed. Some papers relating to the Australian colonies, for example, were sold for a shilling and sixpence, whilst others sold at three shillings and sixpence.[413]

The decision to sell the different types of papers was linked to the steady growth of public interest in parliamentary proceedings since the eighteenth century, alongside changes in how the publicity of popular institutions was understood. Furthermore, these developments were part of other changes in the management of official information.[414] Rix

[410] The maps that were printed were as follows: Arrowsmith, J. "Sketch shewing the relative positions of the lands under survey to the northward of Port Macquarie", 1841; Dixon, R. "A trigonometrical survey of the country at Moreton Bay", 1841; Streleski, E. 1840, "Route from Yass Plains by the Australian Alps and Gipps Land, to Port Phillip"; Arrowsmith, J. 1840, "Map shewing the surveyed lands at Port Phillip from the Government Surveys made in 1840"; Tyers, C. J. "Survey of the lower part of the River Glenelg", 1839; Tyers, C. J. 1840, "Trigonometrical survey of part of the country between Melbourne and the River Glenelg", 1840. All in *New South Wales* 1841.
[411] O'Neill 1968, 5; Bowman 2004, 118.
[412] Bowman 2004, 118; Rix 2014, 454.
[413] See, for example, the prices mentioned in *New South Wales* 1841, 120; *Port Essington* 1843, 149.
[414] Rix 2014, 453–56.

notes that the 1830s, in particular, marked a period of transition, whereby parliamentary proceedings were opened up to public scrutiny. Consequently, by the 1840s the public had many ways of accessing information relating to parliament through different channels.[415]

In general, the parliamentary papers relating to the colonies resulted from transoceanic correspondence. Consequently, not only were the dispatches made public, but also many of their enclosures.[416] The staff at the Colonial Office only chose a portion of these materials to be printed.[417] The papers that the civil servants selected for publication are discernible from the original correspondence, as the practice was to mark their front page with a stamp that identified the time and context in which the papers were printed. Furthermore, the civil servants usually made annotations to the papers, which enables us to trace how portions were extracted in order to compile the papers.[418] In practice, George C. Mayer, the Colonial Office librarian, prepared the papers for printing in the 1830s and 1840s. Young notes that Mayer's role was so important that it led him to neglect his general management duties for the library when the printing demands for the papers increased.[419] In 1852, the position of parliamentary paper clerk was established in order to handle the task of preparing the papers for printing. In 1856, this duty was assigned to a regular clerk at the office.[420]

In addition to the stamps and markings, the annotations and minutes testify how civil servants debated what should be printed and in what form. At times the minutes are suggestive, as they document how civil servants wondered "that [it] might be worth while to lay the despatches" before parliament. In other minutes, one can discern clear directions relating to how a portion of the materials received should be added to the papers during preparation. These comments also demonstrate the differing opinion of civil servants vis-à-vis the necessity to print something, or if they had learned that the materials at hand were not suitable to print. In addition, they document the times when it was not considered

415 Rix 2014, 454, 474.
416 Bowman 2004, 119-120.
417 Temperley and Penson 1938, vii–x.
418 See, for example, Grey to Russell 16 Jan 1842 no 3, f. 82, CO 13/24, TNA; Grey to Stanley 5 July 1842 no. 68, f. 238, CO 13/26, TNA; Young to Grey 30 December 1848 no. 62, f. 571, CO 13/60, TNA; Young to Grey 13 February 1849 no 21, f. 154, CO 13/62, TNA; Young to Newcastle 15 October 1853 no. 54, f. 143, CO 13/82, TNA; MacDonnell to Newcastle 24 August 1861 no. 512, ff. 43-46, CO 13/106, TNA; Daly to Newcastle 19 September 1863 no. 49, ff. 54-81, CO 13/112, TNA; Fitzroy to Grey 6 April 1848 no. 88, ff. 158-159, CO 201/396, TNA; Fitzroy to Grey 1 March 1849 no. 40, ff. 3-8, CO 201/412, TNA; Denison to Labouchere 13 October 1855 no. 163, ff. 292-297, CO 201/486, TNA.
419 Young 1961, 138, 140.
420 Sainty 1976, 6.

necessary to prepare something for printing.[421] Furthermore, the comments explicitly outline the routine of printing particular papers.[422] Consequently, the minutes document the processes of selection and discussion, which simultaneously reveal many aspects of the character of knowledge that the civil servants preferred to communicate through these papers.

Two points become apparent if one peruses the papers that were printed regarding the Australian colonies, as well as the documents relating to the discussions of the civil servants. First, it was rare that papers exclusively focused on exploration. Indeed, only two such papers—regarding the North Australian Expedition (NAE) and the Victorian Exploring Expedition—were published during the period studied. However, the outcome of other expeditions can be studied in thematically-labeled papers that deal with topics that include emigration to the colonies, the management of the crown lands, as well as general descriptions of the colonies. The second feature is that papers detailing the development of the British colonies were often accompanied by a wealth of maps, which helped to document the results and the progress of the surveys from different perspectives.

With this in mind, it is important to consider why particular papers were printed, as well as examining the decision-making process regarding the selection of content and the utilization of maps. In the remainder of this section I will examine the reasons underpinning why the two papers about the above-mentioned expeditions were printed in reference to the other papers that included material on surveys and exploration. In the next section, I will undertake an examination of how maps were prepared and selected in order to accompany the papers. I will also investigate the different types of maps that were used. Both sections will consider the practices of printing parliamentary papers from the perspective of communicating and establishing geographical and cartographical knowledge.

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[421] See the minute by Elliot 6 February 1854 in Young to Newcastle 15 October 1853 no. 54, f. 151, CO 13/82, TNA; a minute by Hall 20 March 1862 in Bowen to Newcastle 12 January 1862 no. 5, f. 54, CO 234/6, TNA; a minute by Fortescue 21 March 1862 in Bowen to Newcastle 12 January 1862 no. 5, f. 54, CO 234/6, TNA. For similar examples see, for example, the minute by Gairdner 29 January 1858 in MacDonnell to Labouchere 15 October 1857 no. 186, f. 71, CO 13/96, TNA. Gairdner's minute in 1858 documents that the governor of South Australia, Richard MacDonnell, requested that the duplicate, not the original, of his dispatch should be used when preparing the papers reporting the Blue Book for 1856. Apparently, MacDonnell had prepared the original in a hurry, which had resulted in the introduction of multiple alterations to the duplicate. See the Minute by Gairdner 3 March 1858 in MacDonnell to Labouchere 15 October 1857 no. 186, f. 69, CO 13/96, TNA.

[422] For example, the Blue Books and the governors' analyses of them were regularly reported to Parliament. The minutes documenting the need to print them are often factual rather than suggestive. The Blue Books were manuscript books that were filled with statistical data in the colonies and then transmitted to London on an annual basis from approximately 1828. The governor was expected to write a report covering the different areas of the book and was expected to extract the most important information. Consequently, nothing needed to be done to the books themselves when preparing the information that was to be published. See Laidlaw 2005, 171–175. For examples, see the minute by Gairdner 24 December 1859 in MacDonnell to Newcastle 10 October 1859 no. 358, f. 391, CO 13/100, TNA; The minute by Dealtry 20 November 1863 in Daly to Newcastle 19 September 1863 no. 49, f. 81, CO 13/112, TNA.

As mentioned, most of the accounts regarding explorations and the reports of surveys were printed in papers that dealt with a particular administrative issue, such as the management of lands, emigration, or the state of particular settlements. These papers contained data from some of the explorations and surveys. They were published either as text-based accounts, or were accompanied by maps. Thus, for example, the reports and observations of Paul E. Strzelecki (1797–1873), Edward J. Eyre and the geological surveyors William Stuchbury and W. B. Clarke were circulated.[423] However, most of the results, were reported via the governor's dispatches.[424] The results of explorations and surveys that were printed in these papers were primarily intended to be read as instances and constitutive parts of colonial administration. It is difficult to estimate how many people read these accounts, but it can be presumed that it was perceived to be a valuable form of official acknowledgment for the explorers who had their reports and accounts printed in this manner. For example, the forthcoming publication of Strzelecki, a geologist, entitled *Physical Description of New South Wales and Van Diemen's Land,* was advertised in 1845 as a work by an individual whose "labours have been noticed in various Parliamentary Papers" in addition to being mentioned in a speech by the president of the RGS.[425]

In practice, the composition of these papers involved the merger of data in order to form comprehensive papers. The data for papers was often gathered over a period of years, although relevant papers were noted as they arrived and could be earmarked for publication with other material.[426] The length of the papers varied from less than ten pages to several thousand pages, with lengthier papers being more common. The conflation of different material in the published papers gave readers the chance to access a wealth of information that the civil servants deemed to be relevant for an understanding of the matter at hand.

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[423] For examples of these reports, see *New South Wales*, 1841, 8-32. For papers dealing with Edward Eyre's expeditions see despatches nos. 26, 53 and 13, and "Map of the Southern Coast of Australia From Encounter Bay to King George's Sound" in *Papers relative to South Australia*, 1843. Compare with Grey to Russell 3 September 1841 no. 26, CO 13/21, TNA; Grey to Russell 11 February 1842 no. 13, CO 13/24, TNA. For examples of exploring expeditions and the progress of surveys in Western Australia see for example "Enclosure in no 20" and "Enclosure in no 24" in *Papers relative to Crown Lands in the Australian Colonies,* 1853. For examples relating to geological surveys printed, see "Enclosure in no 1", "Enclosure 2 in no 1." in *Correspondence relative to the recent discovery of gold in Australia,* 1852; "Enclosure 1 in No. 2.", "Report of the Surveyor General on the Gold Fields of Barthurst, Wellington & c.", "Correspondence with Mr. Hargraves" and "Instructions to, and Report from the Rev. W. B. Clarke" in *Further Papers relative to the recent discovery of gold in Australia*, 1853; "Enclosure 3 in No. 1", "Enclosure 3 in No. 1", "Sub-Enclosure in Enclosure 4", "Enclosure 3 in No. 5" in *Further papers relative to the discovery of Gold in Australia*, 1854.

[424] See the different announcements of discoveries made in *Papers relative to Crown Lands in the Australian Colonies,* 1853.

[425] *The Quaterly Review,* no CL March 1845, 8.

[426] These points are evident from the minutes that note how some papers should or were considered to be added to the papers that were being prepared. See, for example, the minute by Smith 14 March 1843 in Gipps to Stanley 3 September 1842 no. 155, f. 36, CO 201/323, TNA; the minute by Cox 20 March 1862 in Bowen to Newcastle 12 January 1862 no.5, f. 54, CO 234/6, TNA.

The motives underpinning the selection of particular papers for publication can be efficiently analyzed by perusing how material was selected and prepared for print regarding the NAE of 1855-1857 that was led by Augustus C. Gregory. Gregory, an experienced surveyor from the colony of Western Australia, led the expedition that set out to examine the northern coast of the continent. The expedition was well planned and successfully executed by Gregory, who was accompanied by a number of scientific specialists.[427]

In June 1857, the civil servants in the Colonial Office began to consider the need to report the results of the Gregory's expedition to the public on receiving governor William Denison's dispatch, which announced that the party had returned to Sydney. Gordon Gairdner, Henry Merivale and Henry Labouchere, the secretary of state, started to discuss the necessity of publishing some information about the expedition for Parliament. Gairdner oversaw the material that was to be used. In addition to the material they had recently received—a letter from Gregory, a journal and report by Thomas Baines, the official artist on the expedition, and some other letters—they were already in possession of an abundance of letters, reports and tracings that Gregory had sent to England via Singapore and

[427] Kennedy 2013, 69. Geologist James Wilson, botanist Ferdinand von Mueller, naturalist and surgeon J. R. Elsey, collector and preserver J. Flood and artist Thomas Baines accompanied Gregory.

governor Denison had conveyed from New South Wales.[428] All these materials could be employed to compile an account of the expedition. Furthermore, Gairdner had the option to wait for the arrival of the full reports, which the expedition members were in the process of preparing. In Gairdner's view, this latter option was troublesome, as these reports were unlikely to arrive in time to be printed in the present session of Parliament. Furthermore, they would be "naturally far too voluminous to be included in a Parliamentary paper, considering the limited interest which will attach to them".[429] Consequently, he concluded that the material that had already been received was sufficient in terms of communicating "the general outline" of the expedition. Detailed descriptions would reach the public later via different scientific societies. Thus, Gairdner ended up suggesting that the preparation of the papers could be postponed. If the reports arrived they could be used; if not, then Denison's dispatches and the other materials should be printed.[430] On reading Gairdner's ideas, Merivale and Labouchere reflected on how Parliament would be interested in the expedition. Merivale thought that they already had sufficient data to report "the material facts"

[428] The materials at the Colonial Office consisted of at least five dispatches, twenty-five letters/reports and one map. The material arriving at the Colonial Office straight from Gregory were copies of his reports to the governor of New South Wales. See e. g. Denison to Labouchere 20 March 1856 no. 52, f. 417, CO 201/493, TNA; "North Australian Expedition" in Denison to Labouchere 20 March 1856 no. 52, f. 421, CO 201/493, TNA; Denison to Labouchere 20 March 1856 no. 53, f. 422, CO 201/493, TNA; "North Australian Expedition" in Denison to Labouchere 20 march 1856 no 53, ff. 423-424, CO 201/493, TNA; Denison to Labouchere 24 November 1856 no. 181, ff. 357-359, CO 201/495, TNA; "Camp Victoria River" in Denison to Labouchere 24 November 1856 no. 181, ff. 361-362, CO 201/495, TNA; Denison to Labouchere 10 December 1856 no. 188, f. 403, CO 201/495, TNA; "8th October 1856" in Denison to Labouchere 10 December 1856 no. 188, ff. 404-415, CO 201/495, TNA; Report by Baines 20 July 1856 in Denison to Labouchere 10 December 1856 no. 188, ff. 418-419, CO 201/495, TNA; Baines to Chimmo7 August 1856 in Denison to Labouchere 10 December 1856 no. 188, ff. 422-423, CO 201/495, TNA; Gregory to the Secretary of State 20 June 1856, f. 171, CO 201/497, TNA; Gregory to the Governor General 14 June 1856 in Gregory to the Secretary of State 20 June 1856, ff. 177-182, CO 201/497, TNA; Gregory to the Governor General 20 June 1857 in Gregory to the Secretary of State 20 June 1856, ff. 183-184, CO 201/497, TNA; Wilson to Gregory 1 January 1856 in Gregory to the Secretary of State 20 June 1856, f. 185, CO 201/497, TNA; Gregory to Wilson 1 January 1856 in Gregory to the Secretary of State 20 June 1856, f. 186, CO 201/497, TNA; Wilson to Gregory 15 June 1856 in Gregory to the Secretary of State 20 June 1856, ff. 187-188, CO 201/497, TNA; Gregory to Wilson 16 June 1856 in Gregory to the Secretary of State 20 June 1856, f. 189, CO 201/497, TNA; Wilson to Gregory 17 June 1856 in Gregory to the Secretary of State 20 June 1856, f. 190, CO 201/497, TNA; Gregory to Wilson 17 June 1856 in Gregory to the Secretary of State 20 June 1856, f. 191, CO 201/497, TNA; Wilson to Gregory 18 June 1856 in Gregory to the Secretary of State 20 June 1856, f. 192, CO 201/497, TNA; Gregory to Wilson 20 June 1856 in Gregory to the Secretary of State 20 June 1856, f. 193, CO 201/497, TNA; Gregory to the Secretary of State 24 September 1856, f. 152, CO 201/497, TNA; Gregory to the Governor General 24 September 1856 in Gregory to the Secretary of State 24 September 1856, ff. 156-158, CO 201/497, TNA; Denison to Labouchere 19 January 1857 no. 11, ff. 76-78, CO 201/498, TNA; "North Australian Expedition" in Denison to Labouchere 19 January 1857 no. 11, ff. 88-93, CO 201/498, TNA; Gregory to the Colonial Secretary 2 April 1857 in Denison to Labouchere 4 April 1857 no. 65, f. 490, CO 201/498, TNA; Baines to Gregory 31 March 1857 in Gregory to the Colonial Secretary 2 April 1857 in Denison to Labouchere 4 April 1857 no. 65, ff. 491-506, CO 201/498, TNA; Baines to Devine 23 October 1856 in Gregory to the Colonial Secretary 2 April 1857 in Denison to Labouchere 4 April 1857 no. 65, ff. 507-509, CO 201/498, TNA; Baines to Flood 28 October 1856 in Gregory to the Colonial Secretary 2 April 1857 in Denison to Labouchere 4 April 1857 no. 65, ff. 510-511, CO 201/498, TNA; Devine to Gregory 4 April 1857 in Gregory to the Colonial Secretary 2 April 1857 in Denison to Labouchere 4 April 1857 no. 65, ff. 512-515, CO 201/498, TNA; MFQ 257, TNA.

[429] Minute by Gairdner 15 June 1857 in Denison to Labouchere 4 April 1857 no. 65, f. 488, CO 201/498, TNA.

[430] A minute by Gairdner 15 June 1857 in Denison to Labouchere 4 April 1857 no. 65, ff. 488-489, CO 201/498, TNA.

about its proceedings.[431] However, Labouchere pointed out that he did not think "Parliament cares much for the subject", although he nevertheless thought it was important to print a small selection of papers.[432]

The task of communicating the results of the expedition to the public begun to look increasingly challenging as further papers and reports arrived in Britain. In October 1857, Gairdner contemplated what should be done "with these broken fragments of the result of N. Aust. Expedition". It appeared that Gregory would not publish an account of the expedition as "the field of Australian discovery has been fairly worne bare".[433] Furthermore, the meteorological data was not coherent and Gairdner worried that "[i]f the corrected and the uncorrected register were to find their way before the public they would contradict each other and throw doubt on the accuracy of each". [434]As a result, the civil servants decided to ask Charles Sturt to review the papers. Sturt, who had been intimately connected with the planning of the expedition and was well acquainted with Australian geography, as a former explorer, agreed to undertake the task.[435] Thus, the level of interest and suitability the civil servants attached to the data from the expedition—vis-à-vis the potential to publish the material—were important factors when making choices about what should be printed.

The final reports by Gregory and other members of the expedition arrived in London whilst Sturt was undertaking his review. The information gathered using the previously received material were deemed unnecessary, as Gregory's report seemed to cover all the matters that the correspondence of the preceding three years had dealt with.[436] After considering which of the reports should be printed, they decided to only print Gregory's account, alongside a summary of the proceedings of the expedition and its results. The surviving traces of this process reveal that decisions concerning what should be printed focused on the forum in which the materials were to be printed. In December 1857, for example, Gairdner advised a parliamentary clerk that William Hooker's review of the report by Ferdinand Mueller, the expedition's botanist, should be printed in the papers. Gairdner explained that the review would be a good addition to the papers as Gregory refers to the report. At the same time he recognized that it was not entirely pertinent.[437] However, Henry Merivale did not agree with Gairdner and stated:

[431] A minute by Merivale 15 June 1857 in Denison to Labouchere 4 April 1857 no. 65, f. 489, CO 201/498, TNA.
[432] A minute by Labouchere 18 June 1857 in Denison to Labouchere 4 April 1857 no. 65, f. 489, CO 201/498, TNA.
[433] A minute by Gairdner 6 October 1857 in Denison to Labouchere 22 June 1857 no. 93, f. 4-5, CO 210/499, TNA.
[434] A minute by Gairdner 6 October 1857 in Denison to Labouchere 22 June 1857 no. 93, f. 5, CO 210/499, TNA.
[435] A minute by Gairdner 6 October 1857 and a minute by Merivale 6 October 1857 in Denison to Labouchere 22 June 1857 no. 93, f. 5, CO 210/499, TNA.
[436] A minute by Lewis 19 December 1857 in Denison to Labouchere no. 119 29 August 1857 no. 119, ff. 162-163, CO 201/499, TNA.
[437] Minute by Gairdner 21 December 1857 in Hooker to the First Secretary of State 19 December 1857, f. 358, CO 201/500, TNA.

> I do not think this should be printed. It seems to me scarcely a proper use to make of a Parliamentary report on the subject of an exploring expedition, to add a panegyric on one of the members of it, reviewing his whole scientific labours, & in great measure unconnected with the expedition.[438]

Consequently, Hooker's review was not included in the papers. This decision can be contrasted with the discussion that took place among the civil servants of the Colonial Office after they received Sturt's review of the results of the expedition. After reading Sturt's letter, Gairdner concluded that printing the report for Parliament "would perhaps scarcely be considered necessary".[439] On this occasion Merivale thought that the letter could be included as an appendix as a means of communicating important insights about the expedition to the public. Some amendments needed to be made to Sturt's letter, as the last few pages commented on the possibility of establishing a new convict settlement in North Australia. This idea had already been rejected at the time, as it had been decided that transportation to Western Australia would continue. Consequently, the officers did not want to convey such an idea to the public.[440] Hence, the text was edited into a form deemed suitable by the relevant civil servants and the secretary of state. The latter concluded that "[n]othing relative to the possible formation of a new Penal Settlement in Australia ought to appear in our printed papers.[441]

As a result, papers on the NAE were printed for Parliament. They contained five dispatches, two of which contained Gregory's report on the results of the expedition, as well as Sturt's report. The reports and letters by Gregory were printed in full, as were the dispatches and other letters. Sturt's letter was printed in an edited form.[442] This published compilation of papers succinctly communicated the scientific results of the expedition.[443]

However, the printed papers did not aim to be a comprehensive account of all of the results of the expedition. Instead, they were merely part of a wider network of communication that sought convey the results of the expedition to different actors. This position

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[438] A minute by Merivale 26 December 1857 in Hooker to the First Secretary of State 19 December 1857, f. 358, CO 201/500, TNA.
[439] A minute by Gairdner 27 January 1858 in Sturt to Labouchere 19 January 1858, f. 588, CO 201/507, TNA; Sturt to Labouchere 19 January 1858, ff. 570-587, CO 201/507, TNA; MPG 1/668, TNA.
[440] Minute by Merivale 29 January 1858 in Sturt to Labouchere 19 January 1858, f. 588, CO 201/507, TNA; Draft letter to Sturt 25 February 1858 in Sturt to Labouchere 19 January 1858, ff. 589-590, CO 201/507.
[441] Minute by Stanley 8 March 1858 in Sturt to Labouchere 2 March 1858, f. 592, CO 201/507, TNA. See also Annotations in Sturt to Labouchere 19 January 1858, ff. 582, 584, 586–587, CO 201/507, TNA; Minutes by Gairdner, Lewis and Stanley in Sturt to Merivale 2 March 1858, f. 592, CO 201/507, TNA; Sturt to Merivale 2 March 1858, f. 592, CO 201/507, TNA.
[442] Compare "North Australian Expedition. 26 August 1857" in Denison to Labouchere 29 August 1857 no. 119, ff. 164-260, CO 201/499, TNA; "North Australian Expedition. 29 August 1857" in Denison to Labouchere 7 September 1857 no. 127, ff. 396-398, CO 201/499, TNA; X to Gregory 3 September 1857 in Denison to Labouchere 7 September 1857 no. 127, ff. 399-400, CO 201/499, TNA and *Papers relating to an expedition recently undertaken for the purpose of exploring the northern portion of Australia*, 1857.
[443] See Gairdner's minute, dated 18 July 1857, regarding the availability of the papers to be purchased once published in Maclure to Labouchere 16 July 1857, CO 201/501, TNA.

was summarized by Lord Stanley in 1858, when answering a request made to him regarding the availability of the results of the expedition in a discussion in the House of Commons:

> [T]he narrative of the proceedings of the North Australian Expedition had already been printed. The geographical notes had been communicated to the Geographical Society, by whom he believed they had been published. The notes on botany had been sent to Sir W. Hooker; those on geology to Sir. R. I. Murchison; and those on natural history to the Natural History Department of the British Museum; but he was not aware that any arrangements had been made for their publication. [444]

This process of deciding how and what to communicate to Parliament and the public about the results of the NAE can be compared to the printing of papers relating to the expedition by Robert O'Hara Burke (1821–1861) and William Wills (1834–1861). The colony of Victoria organized the expedition by Burke and Wills in order to win the race across the continent. The feat ended disastrously in 1861, with Burke, Wills and all but one of the other members of the expedition perishing in the desert.[445] The premature ending of this expedition ensured that the amount and type of documents communicated to London were somewhat different in comparison to the ones supplied by the members of the NAE. On learning that Burke and Wills had gone missing governor Barkly sent newspaper cuttings to Britain that documented the dispatches sent by the explorers whilst travelling, as well as a tracing by Wills.[446] When reporting about the unfortunate developments and the measures that he and the governors of the other colonies had taken, governor Barkly attached two newspaper cuttings that contained information about Burke's latest reports to the colony and a tracing of the route received from Wills.[447] Much work still had to be carried out after the members of the expedition had been discovered in order to construct a map of the route they had taken and to piece together the fragments of information they had collected.[448]

The discussions relating to the preparation of these papers differed greatly from the ones centered on the NAE. In general, the stamps on the front pages of the different dispatches and other materials received from the colonies constitute the only surviving evidence about the preparation of the papers. However, some shorter thoughts about the need to publicize the information they had received regarding the expedition were made.[449] It appears that a key factor that influenced the printing of the papers was a motion made at the House of Commons in February 1862, which called for the printing of all the

444 HC Deb 23 April 1858 vol. 149 c1584, Historic Hansard 1803-2004.
445 John King was the sole survivor of the expedition. For the expedition see, for example, Bonyhady 1991; Kennedy 2013, 105–8; Cathcart 2013.
446 Barkly to Newcastle 20 July 1861 no. 64, ff. 264-277, CO 309/43, TNA.
447 The newspaper cuttings remain, but the tracing appears to be missing. See "Enclosure A" in Barkly to Newcastle 20 July 1861 no. 64, f. 270, CO 309/56, TNA; "Tracing of the route pursued by Mr. Burke in Expedition to explore the interior of the Continent" in Barkly to Newcastle 20 July 1861 no. 64, f. 275, CO 309/56, TNA; "Enclosure C" in Barkly to Newcastle 20 July 1861 no. 64, f. 277, CO 309/56, TNA.
448 Barkly to Newcastle 20 November 1861 no. 92, ff. 164-167, CO 309/57, TNA.
449 See a minute by Cox 24 January 1862 in Barkly to Newcastle 20 November 1861 no. 92, f. 168, CO 309/57, TNA; a minute by Cox 20 March 1862 in Bowen to Newcastle 12 January 1862 no.5, f. 54, CO 234/6, TNA.

dispatches relating to the expedition. The motion was made by Hugh Childers (1827-1896), who had only recently returned from Victoria to pursue a parliamentary career. He was evidently keen to disseminate information about the capabilities of the Australian continent as a site for further settlements. Chichester Fortescue (1823–1898), the under-secretary of state at the time, agreed with the motion.[450]

The papers compiled and printed in March 1862 mainly consisted of the dispatches that Childers had longed for. They included the dispatches sent by the governors of Victoria, South Australia and Queensland, as well as the official replies from London. The papers also included letters sent by the explorers, newspaper articles, a pamphlet printed in Melbourne that consisted of the diaries of different members of the expedition, as well as transcribed versions of the letters they had written in Melbourne.[451] The papers were accompanied by two maps: one depicting the route taken by Burke and Wills and the other the route taken by John McKinlay (1819–1872) from South Australia in search of the members of the Burke-Wills expedition in 1861.[452]

Three conclusions can be drawn when comparing the printing of the papers relating to the two expeditions. First, on both occasions the civil servants in London had the need to communicate information about the expeditions to Parliament and to the public. In the cases examined, the reasoning of the civil servants stemmed from somewhat different starting points: in the case of Gregory's expedition, it was thought to be right to officially convey the results of a government-funded expedition to the public in Britain. In the case of the Victorian Exploring Expedition, the motivation underpinning the publication of data was somewhat similar, but the request came from outside.

Secondly, the two cases demonstrate the different material that was employed to compose good and comprehensive accounts. In Gregory's case, this meant waiting for the final reports, which communicated the results effectively and were easy to use. In the case of the Burke-Wills expedition, this entailed compiling a selection of papers from the different material that the governor had sent to London. This data provided insights into overall developments and the results of the expedition. The preparation of these accounts, as well as the other papers that contained accounts and surveys relating to the progress of the expeditions, also point to an important aspect in the process of printing: the papers were usually printed with only slight changes, which mainly related to issues concerned with the layout.

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[450] Motion for Despatches, HC Deb 18 February 1862 vol. 165 cc448-51, Historic Hansard 1803-2004. For Childers, see Hall 1969.

[451] *Australian exploring expedition,* 1862. For the original materials see e. g. the following dispatches and their enclosures Barkly to Newcastle 21 August 1860 no. 75, CO 309/52; Barkly to Newcastle 20 July 1861 no. 64, CO 309/56, TNA; Barkly to Newcastle 20 November 1861 nos. 92, 164-185, CO 309/57, TNA; MacDonnell to Newcastle 24 August 1861 no. 512, CO 13/106, TNA; MacDonnell to Newcastle 27 September 1861 no 522, CO 13/106, TNA; MacDonnell to Newcastle 25 November 1861 no. 534, CO 13/107, TNA; Bowen to Newcastle 5 September 1861 no. 51, CO 234/4, TNA.

[452] "Map of the Eastern part of Australia" in *Australian exploring expedition*, 1862; "McKinlay's route, reduced from the original" in *Australian exploring expedition*, 1862.

This notion contrasts with the hypotheses that Bowman has made about the process of preparing papers for publication. She assumes that the papers were edited and rewritten before being printed.[453] However, the evidence left by the civil servants in the papers examined in the present study in regard to the Australian colonies, suggest a different approach. Extensive editing was rare. Instead, much of the material that accumulated at the Colonial Office was printed verbatim. Editing was only resorted to if it was absolutely necessary in order to alter the informational content of the papers. This is understandable considering the large number of papers that were prepared for print on an annual basis.

Thirdly, it is evident from the material studied in this work that maps were regularly printed with the papers. Maps acted as visual aids for those reading the texts at hand, and simply were part of the reporting process. They provided readers with a generalized and simplified means to analyze the data, whether this be on the progress of an exploration, a mineral survey or the division of a colony into administrative areas. The preparation of maps for printing differed from the preparation of the texts. With this in mind, I will now turn to examining these practices in more detail.

Maps of Australia in the Parliamentary Papers

Most of the cartographical illustrations included in the parliamentary papers on Australia were based on the tracings, sketches and maps that the civil servants received within the correspondence from the colonies. In practice, the cartographical illustrations that accompanied the papers were usually prepared by lithographing maps that arrived from the colony. They were printed with colors. In the case of the papers that related to the Australian colonies, most of the maps that were printed in the parliamentary papers were lithographed by the Arrowsmith map company. The firm prepared maps of different parts of the world to accompany the papers. Alexander McGechaen and Coolie Verner have identified that the Arrowsmith map company produced a total of 462 maps for the parliamentary papers, including fifty-one relating to Australia. Most of these maps were the work of John Arrowsmith, who specialized in producing cartographical illustrations of foreign countries.[454]

Samuel Arrowsmith (1805–1839), the cousin of John, and the lithographer James Basire (1796–1869) also produced lithographed maps for the parliamentary papers, especially in the late 1820s and the 1830s. At times, maps lithographed by these three individuals were

[453] Bowman 2004.
[454] This amount can be contrasted with the finding aids prepared regarding the nineteenth-century maps of Australia in the British Parliamentary Papers. This collection, compiled by Irish University Press, contains 76 maps. See *A Collection of Nineteenth Century Maps of Australia, from the British Parliamentary Papers, 1817–1888* 1976. Also see McGechaen and Verner 1973a; McGechaen and Verner 1973b; Baigent 2004a.

printed side by side.[455] However, it is evident that John Arrowsmith became the principal lithographer from the 1840s, at least in regard to the Australian colonies. This can be discerned from the catalog compiled by McGechaen and Verner and when perusing the maps printed in the parliamentary papers.[456]

The civil servants in London have left some traces in their official minutes about the practices of preparing and selecting maps for printing. Often these are short notes documenting if a particular map should be printed with the papers, but they rarely contain extensive information about how this should be done. For instance, in the case of papers relating to captain Owen Stanley's (1811–1851) survey of the northeast coast of Australia, carried out in 1847, the civil servants noted that the tracing of the area, alongside the duplicate dispatch, could be put to two distinct uses on arrival in London. First, it should be sent to the Admiralty, and secondly it should be lithographed and printed with the dispatch as part of the parliamentary papers on emigration, which were then being prepared.[457] Consequently, in August 1848 a tracing that contained hydrographic and topographic information and possible sites for settlement was printed alongside the corresponding dispatch.[458]

On this occasion, the context of printing is particularly interesting as it demonstrates the practice of bringing together various data sources: the dispatch and the tracing were printed with an extensive amount of papers relating to emigration to the Australian colonies. The dispatch actually dealt with a survey of the northeast coast, which captain Stanley had undertaken following the preliminary exploration of the area by colonel George Barney (1792–1862), who was seeking a suitable site for the establishment of the new colony of North Australia. The colony had been disbanded by an order from London. However, the area had nonetheless been surveyed by Stanley, who had been conveniently present in order to communicate information that enabled the formation a plan to take possession of the adjacent country for the British crown. Stanley's report and map, alongside his dispatch,

[455] For maps lithographed by J. Basire see, for example, "Chart of Swan River from the Survey by Captn. James Stirling RN 1827" in *Swan River Settlement*, 1829; "Map of Australia" in *Report from the select committee on transportation*, 1837; "Plan of Sydney with Pyrmont, New South Wales" in *Report from the select committee on transportation* 1837; "Nepean Bay, Kangaroo Island" in *Second annual report of the Colonization Commissioners for South Australia*, 1838. For maps lithographed by S. Arrowsmith, see, for example, "Sketch of the coast from Darling Harbour to Elizabeth Bay [...]" in *New South Wales and Van Diemen's Land*,1832; "Untitled map depicting the tract of country ceded to John Batman by the aboriginal chiefs" in *Report from the select committee* [...], 1836; "Part of Southern Australia from the 131s to 141st degree to East latitude" in *First Annual Report of the Colonization Commissioners of South Australia*, 1836; "Map of New South Wales" in *Report from the select committee on transportation*,1837; "South Australia" in *Second annual report of the Colonization Commissioners for South Australia*, 1838.
[456] McGechaen and Verner 1973a; McGechaen and Verner 1973b.
[457] See, for example, the annotation by Grey 13 June 1848 in Fitzroy to Grey 14 January 1848 no. 14, f. 160, CO 201/393, TNA.
For other references relating to preparing the maps, see, for example, the minute by Gairdner 20 January 1858, f. 15, CO 201/506, TNA; the minute by Lewis 19 December 1857 in Denison to Labouchere 29 August 1857 no. 119, f. 162, CO 201/499, TNA; the minute by Merivale 21 December 1858 in Denison to Labouchere 29 August 1857 no. 119, f. 162, CO 201/499, TNA; the minute by Gairdner 20 January1858 in Murchison to Labouchere 19 January 1858, CO 201/506, TNA; the minute by Lewis 5 March 1858 in Sturt to Labouchere 2 March 1858, f. 592, CO 201/507, TNA.
[458] *Emigration*, 1848, 74-75; "Plan of Port Curtis" in *Emigration*, 1848.

were probably printed with the papers dealing with emigration in order to provide information about the character of the harbor. It is also likely they were included in order to report to parliament about the developments in the region. The movements of settlers on the northeast coast, in particular, was interesting to the authorities in London, as the area had previously been earmarked as a site of settlement.[459]

The civil servants of the Colonial Office in London communicated through the parliamentary papers to the other government departments and also the public many of the maps that had arrived in Britain from Australia. A comparison between the maps that were received with the dispatches and the ones that were printed with the parliamentary papers shows that a majority of the maps sent as enclosures were printed. Thus, in a similar manner as the civil servants had been able to visualize colonial developments by consulting maps, these cartographical illustrations also informed Parliament and the public. As the same maps were used, the informational content of the communications did not alter in a similar manner as when using general maps. In the 1858 papers, for example, maps were printed that depicted the separation of Moreton Bay from New South Wales. The papers consisted of correspondence between the governor of New South Wales and the secretary of state. When the process of separation had proceeded to the stage when a decision was necessary regarding the boundary separating the colonies, the governor furnished his textual description with a map. This map had been compiled at the surveyor-general's Office and it was lithographed to accompany the papers.[460]

This is significant, as the maps that had been circulating between civil servants in the colonies and in Britain in manuscript form and as tracings were transformed into printed maps that could reach a wider audience. This contrasts with the practices Matthew Edney has identified regarding the use, publication and circulation of the regional maps of the North American colonies in Britain in the late eighteenth century. Edney notes that most of the maps sent to London as manuscripts never became public in any form whatsoever. It was decided that the maps should be archived with the correspondence or stored in a separate map collection in a very similar manner as described in the previous chapter. The major difference, however, is that the maps constantly remained "within an institutional and archival setting" and it was not customary for the administrators to seek to publish

[459] Fitzroy to Grey 14 January 1848 no. 14, f. 159, CO 201/393, TNA. Captain Stanley's report contained few references to the fact that he had been observing whether settlers were moving in the area he surveyed. See Stanley to Thompson 28 November 1848 in Fitzroy to Grey 14 January 1848 no. 14, ff. 161-162, CO 201/393, TNA; Johnston and Gregory 1989, 249.

[460] See MR 44, TNA and "Map shewing the proposed boundary between NSW and the Moreton Bay Colony and the proposed division of that colony into electoral districts" in *Papers relative to the separation of the Moreton Bay District from NSW* [...],1858.

For similar examples see, for example, the following papers and the original maps enclosed in the correspondence: MPG 198, MPG 199, MPG 200, MPG 201, MPG 204, MPG 205 and *New South Wales*, 1841. Compare also "Chart of a portion of Spencer's Gulf" and "South Australia" in *Further papers relative to crown lands in the Australian Colonies*, 1854; MPG 745, TNA; Young to Newcastle 27 May 1853 no. 6, ff. 206-209, CO 13/81, TNA.

these documents. As a result, the contents of these manuscripts were gradually incorporated into commercial maps, as they increasingly began to circulate in the public sphere.[461] It thus becomes evident that practices in the nineteenth century were drastically different. These were fueled by the faster and cheaper technologies that could be employed to reproduce maps.[462] The extensive use of lithography can be seen as one response to the increased interests in parliamentary activities that emerged in the 1830s.[463] The circuits of the administrative records were more extensive and the communication of cartographical data to the public was much wider.

Based on an examination of maps printed in the parliamentary papers, Susan Gole has noted that a majority of them were specifically prepared for publication. Indeed, after being printed they could potentially be published commercially and sold individually.[464] However, at times the Australian papers were accompanied by maps already published in Britain.[465] Most of these maps were the work of John Arrowsmith, who utilized cartographical and geographical data arriving from the colonies.[466] Arrowsmith's maps also accompanied papers relating to other geographical regions.[467] I will discuss the processes and practices established between the Colonial Office and Arrowsmith in the next chapter, which enabled the cartographer to access the data, as well as his methods of constructing the maps. For now, I will draw attention to the type of knowledge represented in the parliamentary papers, and then undertake an examination of the reasons why they were printed in the papers.

The reasons for printing particular maps in the papers were usually not mentioned in the Parliamentary Papers. As noted, there was a specific connection between the tracings and manuscript maps sent from the colonies and papers that were printed. The published maps, which compiled information from different sources, did not typically have such a

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[461] Edney 2008b, 68–69.
[462] Ristow 1975, 78; Foliard 2017, 71.
[463] Ristow 1975, 101.
[464] Gole 1995, 65.
[465] For example, Arrowsmith, J. "The District of Adelaide, South Australia", [1838] in *Third annual report of the Colonization Commissioners for South Australia*, 1839; Arrowsmith, J. "Discoveries in Western Australia" [1838] in *Western Australia*, 1838; Arrowsmith, J. "The District of Adelaide, South Australia", [1840] in *Second report from the select committee on South Australia*, 1841; Arrowsmith, J. "Map shewing the surveyed lands at Port Phillip from the Government Surveys made in 1840" [1841] in *New South Wales*, 1841; Arrowsmith, J. "South Australia shewing the division into counties [...]" [1843] in *Papers relative to South Australia*, 1843; Arrowsmith, J. "Map shewing the Surveyed lands at Port Phillip from the Government Surveys made in 1840" [1843] in *Colonial lands and emigration,* 1843; Arrowsmith, J. "Western Australia from the Government Surveys" in *Aborigines. Australian colonies*, 1844; Arrowsmith, J. "The South Eastern Portion of Australia" [1852] in *Correspondence relative to the recent discovery of gold in Australia*, 1852; Arrowsmith, J. "The South Eastern Portion of Australia" [1853] in *Further Papers relative to the recent discovery of gold in Australia*, 1853.
[466] In the 1830s some were also the work of Aaron Arrowsmith Jr. See, for example, "Australia" in *Colonial Revenue*, 1830. On rare occasions the maps were copies of Arrowsmith's work. See, for example, "Map of the South East Portion of Australia [...] Copied from John Arrowsmith's Map 35 Essex Str. 1837" in *Report from the select committee on transportation*, 1837.
[467] Liebenberg 2008.

direct link to the printed papers: the manuscript versions did not arrive in Britain as enclosures. This leads to the conclusion that they served a different purpose when printed as part of the papers. They could be included for practical reasons and function as substitutes if a map originally accompanying a dispatch had not arrived in Britain in time to be printed with the papers. This was the case when the papers relating to the statistical returns of Western Australia were in the process of being printed in 1838. One of the dispatches received from governor James Stirling referred to a general plan that was attached to exhibit "the several districts which have been occupied or examined, the routes and discoveries of exploring parties, and the direction of the larger streams".[468] However, the civil servants in London had to find a substitute in the absence of the plan. Consequently, a general map of the colony, which had been prepared and published by John Arrowsmith in London just a few months previously, was printed with the papers. The dispatch was accompanied with a note in the margin explaining why the map had been replaced.[469]

These maps often accompanied the dispatches in order to communicate general geographical knowledge and functioned as reference material for the papers and the larger scale maps in question. For example, the papers that communicated information on the discovery of gold in Australia in 1852 and 1853 were accompanied by Arrowsmith's maps, which charted the southeastern portion of the continent. Compared to similar maps of the same area that Arrowsmith had published in the 1840s, these works contained new information about the locations of the recent gold fields.[470] Thus the maps, which were prepared using the same plate, compiled the data on the gold fields in New South Wales and Victoria, the colony that had only recently come into existence. Thus, the new Arrowsmith maps helped readers to put the data into perspective.[471] This function was noted in the later papers in an annotation to a dispatch from Victoria. The annotation informed readers that the data transmitted on separate plans regarding the relative locations of the goldfields of Ballarat, Mount Alexander and Bendigo was "included in the General Map".[472] The appearance of the 1852 papers, for example, was commented on in the British press, with attention being directed to Arrowsmith's map. This served as a starting point for analyzing the new information and the discussion that was taking place regarding the implications of the discoveries.[473]

Consequently, the papers can be understood as important nodes in the network that constituted the circulation of cartographical knowledge. It is important to note that as the

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468 *Western Australia*, 1838.
469 See the note in *Western Australia*, 1838, 151.
470 Prescott 2012r.
471 See Arrowsmith, J. "The South Eastern Portion of Australia" [1852] in *Correspondence relative to the recent discovery of gold in Australia*, 1852; Arrowsmith, J. "The South Eastern Portion of Australia" [1853] in *Further Papers relative to the recent discovery of gold in Australia*, 1853.
472 "No. 28, Latrobe to Pakington 8 October 1852 no. 140" in *Further Papers relative to the recent discovery of gold in Australia*, 1853, 259.
473 "The Australian Gold Fields", *Morning Chronicle*, 24 March 1853; "The Mineral Riches of New South Wales", *Western Times*, 9 April 1853, 5; "The Mineral Riches of New South Wales." *The Times*, 29 March 1853, 8.

Colonial Office allowed Arrowsmith's maps to be made accessible to the public, it was done with an attempt to direct how the colonies as spaces were understood. In the case of the papers dealing with the discovery of gold, the maps promoted the colony as a space of mineralogical possibilities.

The repeated use of a map prepared from the same plate was not limited to illustrating the newly discovered goldfields in Australia. Arrowsmith's map of the district of Adelaide was used on two occasions, for example, to illustrate the papers reporting the progress of colonization in South Australia. The maps were printed in the third annual report of the colonization commissioners, which was published in 1839, as well as in a report of 1841, prepared by a select committee that had been established to examine the state of the colony. However, the printed maps were not identical: the first had been published in 1839 and the second in 1840. The later incorporated the latest information available regarding the country.[474] The map was printed alongside other published Arrowsmith works in the report of the select committee. It depicted the geography and the state of surveys in South Australia and a plan of the district of Adelaide showing the application of a running survey by Robert Dawson.[475] As companion pieces, these maps demonstrated the alterations in the system of surveying that had been implemented in the colony. The strict trigonometric surveys of William Light had been replaced by the quicker and cheaper technique introduced by Dawson.[476]

Some of the maps were specifically prepared for the occasion. This occurred, for example, when the civil servants needed a map to illustrate the North Australian Expedition papers. The discussions relating to the preparation of the map are exceptionally well documented, which perhaps underlines the fact that preparing cartographical illustrations in this manner was not common. On this occasion, John Arrowsmith was asked to furnish the account with a map that would be a lot smaller than the one delivered by Gregory to the Colonial Office. The tracings of the final maps that were prepared by Gregory arrived in Britain in order to be consulted and utilized (the originals had been retained by the Survey Department in New South Wales for the possible needs of the colony or of Moreton Bay).[477] The civil servants in London decided to print the papers for parliament with an accompanying map. Consequently, the tracings were forwarded to Arrowsmith, as it was considered important to print a general reference map with the texts.[478]

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[474] See Arrowsmith, J. "The District of Adelaide, South Australia" [1839] in *Third annual report of the Colonization Commissioners for South Australia*, 1839; Arrowsmith, J. "The District of Adelaide, South Australia" [1840] in *Second report from the select committee on South Australia*, 1841.

[475] The maps are the following: Arrowsmith, J. "Maritime portion of South Australia", [1840]; Arrowsmith, J. (1841) "Map shewing the special surveys in South Australia" [1841]; Dawson, R. "Plan of the district of Adelaide" [s. a.]. All in *Second report from the select committee on South Australia*, 1841.

[476] Kain and Baigent 1992, 314–317.

[477] Denison to Labouchere 29 August 1857 no. 119, ff. 160-161, CO 201/499, TNA.

[478] A minute by Lewis 19 December 1857 in Denison to Labouchere 29 August 1857. no. 119, ff. 162-163, CO 201/499, TNA.

The discussion relating to the preparation of the map is of special interest here. W. J. Lewis, clerk of the parliamentary papers, suggested using Arrowsmith in order to compile a general map showing the cartographical information from the different tracings that had arrived in Britain. This idea met with the approval of permanent under-secretary Henry Merivale and senior clerk Gordon Gairdner. However, Merivale, in particular, was skeptical of Arrowsmith's ability to prepare the maps in time. He therefore suggested that Arrowsmith should be given a definite deadline, after which the papers would be printed with or without the maps. If Arrowsmith had not delivered the maps on time, it was decided that they could be printed later. Indeed, they hinted that they would find an alternative cartographer if Arrowsmith could not deliver the goods.[479] In Gairdner's view, however, a delay was not likely "as a sketch on a reduced scale was sent home which he can correct from the present tracings without much trouble I should suppose".[480] Gairdner's assessment was correct, as the papers were accompanied by a map prepared by Arrowsmith that depicted the route of the North Australian Expedition on two sheets.[481]

The acquisition of commercially-published maps that could act as substitutes in order to illustrate the papers, or the commission of entirely new maps are explicit instances when the information in circulation became reframed. Consequently, the context in which it could be read was redesigned. This point is particularly evident if we consider the roles of the four different maps that were printed with correspondence relating to the indigenous peoples of the Australian continent. The papers were printed in order to inform parliament about the "condition of the aborigines" and consisted of governors' dispatches, reports and other papers describing interactions between the settlers and indigenous people, as well as the progress of missionary work and the work of the "protectors of the aborigines" in the different colonies. Two of the maps printed were general depictions of the colonies: one was a map of New South Wales and South Australia, lithographed by Arrowsmith, which had been printed in the papers to show "the Principal Sites referred to in the Correspondence relative to the Aborigines".[482] The other map depicted Western Australia and had already been published by Arrowsmith.[483] A third map exhibited the geographical locations of the southern dialects of the indigenous peoples. This document arrived in Lon-

[479] A minute by Merivale 21 December 1857 and a minute by Gairdner 22 December 1857 in Denison to Labouchere 29 August 1857 no. 119, f. 163, CO 201/499, TNA.
[480] A minute by Gairdner 22 December 1857 in Denison to Labouchere 29 August 1857 no. 119, f. 163, CO 201/499, TNA.
[481] See "Map of Part of Australia Shewing the Route of the North Australian Expedition in 1855 & 1856"in *Papers relating to an Expedition Recently Undertaken for the purpose of Exploring the Northern Portion of Australia*, 1857-1858, 35, 36.
[482] "Map of New South Wales & South Australia Shewing the Principal Sites referred to in the Correspondence relative to the aborigines" in *Aborigines. Australian colonies*, 1844.
[483] Arrowsmith, J. "Western Australia" [1841] in *Aborigines. Australian colonies*, 1844.

don from South Australia with a vocabulary of the indigenous peoples that had been compiled by a German missionary.[484] The fourth map showed the county of Wellington in Western Australia. It accompanied a dispatch that discussed the site for a mission in the colony and had been prepared at the local Surveyor-General's Office.[485] In combination, these maps created a cartographically-grounded framework for reading about the indigenous peoples in the Australian colonies. The small-scale maps helped put into perspective the issues depicted on the large-scale maps. Without them, reading the numerous accounts referring to different locations would not have been intelligible.

This occasion also demonstrates how maps that arrived from the colonies could be employed in different contexts in the papers than the ones they originally related to. The map of New South Wales, which was printed with the papers to illustrate the different sites referred to, was printed in a slightly different form the following year with papers that dealt with emigration to the Australian colonies. The basis of the map is the same, but its title was altered and it contains more detail, especially quantitative data regarding the districts that the map exhibited.[486] To function as reference map its title was altered to fit the occasion.

To conclude, I would like to draw attention to the reframing of the maps that occurred when printing the parliamentary papers. Suitable maps were reused when needed, or were used as substitutes to those that were missing. In a way, the compilation of small and large-scale maps hints at how the civil servants thought that the information they contained should be framed in order to be comprehensible. The papers that were prepared and the maps that were selected to accompany them, then, mark instances of knowledge-brokering on the part of the civil servants. They managed the large amount of documents that arrived and enabled individuals interested in the Australian colonies to access portions of the official information in circulation. Consequently, the maps printed in the parliamentary papers demonstrate how cartographic documentation about colonial affairs was a vital part of communicating information beyond the walls of the Colonial Office. In other words, maps enabled conceptualizing the themes the papers related to within a cartographical framework.

All-in-all, the parliamentary papers mark an important instance of synthesis and demonstrate an occasion when the enormous amount of geographical and cartographical material from the Australian colonies was filtered for further use in London. Significantly, the process of compilation and conglomeration demonstrates how the availability of the

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484 "Map shewing the Range of the Southern Dialects of Australia" in *Aborigines. Australian colonies*,1844.

485 "Part of the county of Wellington" in *Aborigines. Australian colonies*,1844.

486 The map had arrived in London in 1844 as part of Governor Gipps's dispatch discussing the need to alter the existing land policies beyond the limits of location as a similar map has substituted the original in the volume of dispatches. See MPG 1/406, TNA. Also see "Sketch showing the Squatting Districts in New South Wales 1844" in *Copies or Extracts of any Correspondence relative to Crown Lands and Emigration in New South Wales*, 1845. Compare with "Map of New South Wales & South Australia Shewing the Principal Sites referred to in the Correspondence relative to the aborigines" in *Aborigines. Australian colonies*,1844.

right kind of material conditioned, to a large extent, what was printed and when. This is in spite of the fact that the civil servants influenced what was printed and in what form. Consequently, the parliamentary papers acted as a channel of communication that was very dependent on the character of the communications that were received from the colonies and their perceived usefulness.

Furthermore, the examples discussed in this chapter demonstrate that maps were more likely to be altered and changed than texts. Most maps arriving from the colonies were printed in London using lithographic techniques. However, there are instances when the information contained on small-scale maps was compiled with data on large-scale maps. This occurred, for example, when the papers discussing the discovery of gold were printed. These instances enforced the epistemological status of the small-scale maps used: in the case of the Australian papers these maps were most often by John Arrowsmith. These types of examples illustrate instances of analysis and generalization. This contrasts with the general practice of preparing the texts for print. These processes most often included simply omitting papers, rather than compiling synthetic accounts. Consequently, the task of connecting the pieces of information and determining their significance was left to the consumer of the papers.

The RGS as an Outlet for Geographical Knowledge

Supplying Information and Loaning Maps

As the majority of the parliamentary papers addressed issues other than exploration and geographical discovery, it is evident that the Colonial Office had other channels for making this information public. The Royal Geographical Society, with its evening meetings and its publications, was a particularly important outlet in the Colonial Office's measured attempt to communicate geographical knowledge to the public. This practice was part of the overall system of providing scientists and scientific societies in London with information about newly-acquired knowledge from the British colonies. The correspondence between the Colonial Office and the different actors exemplifies how the different types of enclosures received from the colonies—reports, extracts from dispatches, vocabularies, maps, statistics, and specimens, for example—were put into circulation in order to reach scientists in different fields. These circuits of forwarding material to different organizations such as the RGS but also the Ethnographic Society, the Geological Society, the Royal Botanic Gardens in Kew, and the Meteorological Society are most noticeable when new information from expeditions of discovery were received. After the return of large-scale, government-funded expeditions of discovery, such as those led by George Grey and Frederick Lushington in north-west Australia in the late 1830s, as well as Sturt's Central Australia Expedition in

1844–46 and Gregory's North Australian Expedition in 1855–56, a variety of data, including travel accounts, botanical specimens, and meteorological and geological data, were forwarded to the different institutions in order to be added to their collections, discussed in their meetings and potentially published in their respective journals.[487]

The practices of communication with the scientific societies were so well established that information was generally transmitted without the societies even having to ask for it. However, it was common for the secretaries of the different societies to make enquiries to the Colonial Office. This often occurred if they had heard that interesting collections of specimens or other interesting material had arrived at the Colonial Office, or if they were anxiously waiting for the results of particular expeditions. If possible, the Colonial Office usually complied with the requests and forwarded the material if it was available.[488] In addition, the Colonial Office also forwarded letters and other material to the relatives of individuals involved in the expeditions in Australia and occasionally to people who had helped to plan them.[489]

The close communication between government departments and scientific societies had long roots. Before the establishment of specialized scientific societies at the turn of the nineteenth century, government officials mainly worked with the Royal Society, which

[487] The correspondence relating to the Australian colonies contains a number of communications to and from different scientific societies, institutions and libraries, such as the Bodleian Library, the British Museum, the Ethnological Society, the Geological Society, the Royal Geographical Society, the University College of London. See, for example, Washington to Stephen 6 February 1840, f. 108, CO 13/19 TNA; Forshall to Russell 19 May 1841, f. 141, CO 13/23, TNA; Secretary of The Geological Society to Stephen 22 April 1841, f. 568, CO 201/313, TNA; Jackson to Stephen 22 April 1841, f. 570, CO 201/313, TNA; Jackson to Hawes 12 November 1846, f. 455, CO 13/51, TNA; Forshall to Grey 18 November 1846, f. 460, CO 13/51, TNA; Power to Grey 18 November 1846, f. 463, CO 13/51, TNA; Hamilton to Hawes 18 November 1846, f. 465, CO 13/51, TNA; Atkinson to Hawes 27 November 1846, f. 467, CO 13/51, TNA; Bandinil to Hawes s. d., f. 469, CO 13/51, TNA; Forshall to Grey 16 December 1846, f. 471, CO 13/51, TNA; Humble to Stephen 14 June 1847, f. 406, CO 201/388, TNA; Humble to Stephen 15 June 1847, f. 408, CO 201/388, TNA; Shaw to Hawes 15 February 1849, f. 495, CO 201/420, TNA; Shaw to Elliot 13 September 1849, f. 511, CO 201/420, TNA; Shaw to Hawes 6 October 1849, f. 514, CO 201/420, TNA; Draft to De La Beche 18 February 1852 in Fitzroy to Grey 30 August 1851 nos. 157, f. 345, CO 201/444, TNA; Draft letter to the Secretary of the RGS 8 July 1852 in Fitzroy to Grey 29 January 1852 nos. 22, f. 346, CO 201/450, TNA; Shaw to Earl of Desart 10 July 1852, f. 386, CO 201/458, TNA; Shaw to Peel 7 April 1853, CO 201/468, ff. 476-477, TNA; Draft letters to Hooker and De La Beche 4 March 1854 in Latrobe to Newcastle 24 November 1853 no. 187. CO 309/19, ff. 195–196, TNA; Draft letters to Hooker and the Royal Geographical Society 24 May 1855 in Hotham to Grey 31 January 1855 no. 22. CO 309/31, f. 206, TNA; Shaw to Merivale 15 October 1857. CO 13/96, f. 493, TNA; Shaw to Merivale 1 March 1858, f. 106, CO 13/98, 106, TNA; Annotations by Dealtry 2 November 1859 and s. d. in Kennedy to the Secretary of State for the Colonies 15 August 1859 no. 84, ff. 272-273, CO 18/109, TNA; Shaw to Rogers 29 November 1861, f. 50, CO 13/108, TNA; Draft to the Secretary of the RGS 6 May 1862 in Kennedy to Newcastle 18 February 1862 no. 27, f. 125, CO 18/123, TNA; Draft to the Ethnological Society 6 May 1862 in Kennedy to Newcastle 18 February 1862 no. 27, f. 126, CO 18/123, TNA; Draft to Airy 6 May 1862 in Kennedy to Newcastle 18 February 1862 no. 27, f. 127, CO 18/123, TNA.

[488] For example, Barlo to Glenelg 27 December 1838, f. 83, CO 201/280, TNA; Archer to Stephen 12 March 1838, f. 10, CO 201/280, TNA; Secretary of the RGS to Hope 17 March 1843, f. 306, CO 201/338, TNA; Jackson to Stephen 1 November 1845, f. 532, CO 201/361, TNA; Secretary of RGS to Hawes 11 February 1847, f. 204, CO 13/57, TNA; Jackson to Hawes 7 April 1847, f. 377, CO 201/388 TNA; Draft to Shaw 4 November 1856, f. 321, CO 201/496, TNA.

[489] E. g. Burke to Rogers 17 February 1862, f. 524, CO 13/110, TNA; Minute by Merivale 21 July 1856 in Denison to Labouchere 20 March 1856 no. 52, f. 418, CO 201/493, TNA.

was established in 1660. During the nineteenth-century, scientific societies and scientists became intimately involved with the processes of colonization. They worked with the information they received through government offices, and were instrumental in instigating, planning and preparing planning and preparing expeditions of discovery. Members of these societies also played crucial roles in the innovation of new practices, instruments and medicines that could be used in the new environments.[490] By communicating information about the colonies via different routes to be published the civil servants influenced public discussion and perceptions about the newly explored British domains.

When examining the minutes of the civil servants, as well as the correspondence received from different scientific societies, it is evident that the RGS was by far the most important outlet for geographical knowledge deriving from the Australian colonies. The RGS, which was founded in 1830 (only the third such society in the world at the time), was active in promoting exploration in all regions around the globe and aimed to establish itself as the center of geographical research in Britain.[491] By organizing regular meetings and publishing accounts of explorations and articles relating to geographical science, in the *Journal of the Royal Geographical Society* and *Proceedings of the Royal Geographical Society*, the RGS wished to communicate geographical knowledge to a wider audience. In short, the RGS aimed to function as a public forum for discussions on exploration. At the same time, the RGS worked to more precisely define the scope of geographical research and professionalize the field.[492]

As Livingstone summarizes, the members of the RGS were men of high social standing.[493] The society functioned as a mixture of a gentlemen's social club, an arena for scientific discussion and a platform for the expression of imperial endeavors. Thus, from its establishment the RGS was a heterogeneous meeting place for men with differing interests.[494] Indeed, the RGS is often described as the heir of the African Association[495]

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[490] Headrick 1981, 58–79; Stafford 1989; Livingstone 1992, 155–57; Cameron 1995; Stafford 1999; Driver 2001, 29, 36–37.

[491] Driver 2001, 36. Before the RGS was founded, geographical societies had been established in Paris and Berlin. During the nineteenth century similar geographical societies were established in Edinburgh, Liverpool, Manchester and Newcastle. See Withers 2001, 80, 91.

[492] See, for example, Ryan 1996, 33; Driver 2001, 27-37; Butlin 2005, 18-22. These goals were defined in the prospectus of the society, printed in *Journal* in 1831. See "Prospectus of the Royal Geographical Society of London", *JRGS*, 1831, vol. 1.

[493] Livingstone 1992, 158.

[494] Livingstone 1992, 158-160; Cameron 1995, 17; Driver 2001, 36; Butlin 2005, 16.

[495] The African Association (Association for Promoting the Discovery of the Interior Parts of Africa) was formed in 1788 under the leadership of Joseph Banks. This London-based association was devoted to exploration in Western Africa. Its goals included determining the course of the River Niger and locating the lost city of Timbuctoo. In general, it was concerned with creating commercial opportunities in Africa. The African Association merged with the RGS in 1831. See Pratt 2008, 67-68; "Union of the African Association with the RGS", *JRGS,* 1831, vol. 1.

(founded in 1788) and the Raleigh Club[496] (established in 1826).[497] The multifaceted nature of the RGS is perhaps the main reason why it long remained outside the scope of extensive research by historians of science.[498] The society promoted the cause of exploration as an important duty of Great Britain in the name of progress. Indeed, the presidents of the RGS frequently articulated the material benefits likely to be gained from the proper organization of expeditions devoted to exploration. Thus, the society was a natural meeting place for those interested in exploration and scientific discovery, but also in the expansion of the British Empire and those simply seeking economic opportunities.[499]

As an organization, the society sought to collect an extensive collection of printed books, maps and charts, in addition to manuscript material and specimens of different kinds. The society accumulated maps from many actors, such as the Colonial Office, the Foreign Office, the Hydrographical Office, as well as individual cartographers, including James Wyld and Augustus Petermann, the Royal House and a vast network of domestic and foreign correspondents. Maps were also purchased by the Map Committee and by members of the RGS council when they traveled abroad.[500] Consequently, its library and map collections were often consulted by its members, but also by individuals from other institutions and organizations, such as the government departments. Depending on the case in question, the society also loaned out its books, maps and sometimes even its map plates.[501]

The RGS played an active role in the organization of expeditions to different parts of the world. The RGS provided material support to explorers by loaning them equipment. The society also sought to educate explorers in the art of discovery by printing instructions in regard to the observation and collection of data in its journals and in separate publications.[502] Despite its nuanced sponsorship of scientific exploration, the influence of the RGS on British society remained small during the first decades of its existence: the collection of

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[496] The Raleigh Travellers' Club was established in 1826 and it functioned as a dining club with approximately forty members. These members were esteemed travelers. See Cameron 1980, 16.

[497] Markham, *JRGS,* 1880, vol. 50, 11-12; Stoddart 1986, 60; Livingstone 1992, 158; Butlin 2005, 16-17.

[498] Compare Driver 2001, 25.

[499] Ryan 1995, 54; Driver 2001, 37.

[500] Crone 1955; Crone and Day 1960. The accumulations are documented in the Council Minute Books, see e. g. Council Minute Book, October 1830-July 1841, 154, 281, 285, 292, 310, passim., RGS; Council Minute Book November 1841 – March 1853, 15, 42, 52, 66; 101, 134, 252, passim., RGS; Council Minute Book April 1853 – January 1859, 58, 280, passim., RGS; Council Minute Book January 1859-February 1867, 9, 12, 23, 27, 32, 52, 62, 63, 90, 95, 146, 239, 240, 254 passim., RGS. The society also announced the new acquisitions made to the library at its evening meetings and in its *Journal* and *Proceedings*.

[501] The requests to loan or consult the materials are documented in the Council Minute Books. See e. g. Council Minute Book, October 1830-July 1841, 49, 51, 54, 84-85, 148, RGS; Council Minute Book November 1841 – March 1853, 33, 157, 198-200 RGS; Council Minute Book April 1853 – January 1859, 129, 293, 303 RGS; Council Minute Book January 1859-February 1867, 23, 24, 27, 29, 34, 35, 46, 54, 77, 91, 131, RGS. See also Foliard 2017, 50.

[502] See, for example, Raper & Fitzroy, *JRGS,* 1854, vol. 14, 328-358. Also see Driver 2001, 49–67; Koivunen 2009, 28, 35–36, 81; Withers 2013, 167–79.

information and different material, such as maps, was a slow process. Moreover, the publishing endeavors of the society were somewhat sporadic and the RGS did not even possess its own venue for meetings. The society started to grow in size and influence only after 1850 and only acquired its own permanent headquarters at 1 Savile Row in London in 1871.[503] As Daniel Foliard puts it, the RGS in the mid-nineteenth century was not the "imperial hub" it would later become.[504]

Connections between state departments and the RGS were strong. The founders of the RGS were government officials from the Colonial Office, the Admiralty and the Foreign Office. They were also members of other scientific societies, such as the Geological Society and the Royal Society and were well respected travelers.[505] The close relationship between the RGS and the Colonial Office staff is evident from notes made in the dispatches, which demonstrate that the civil servants were aware of the meeting times of the society.[506] Indeed, many civil servants working in London were members of the society. Moreover, some secretaries of state even served as presidents of the RGS. The permanent under-secretary Herman Merivale, for example, was a fellow of the RGS and served on the council of the society. Many other individuals who held positions at the Colonial Office also became fellows.[507] Similarly, some governors and surveyor-generals of the Australian colonies were members.[508] These fellows had good connections with the presidents and secretaries of the society and were able to discuss matters relating to the colonies.[509] The RGS was also

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503 Crone 1955, 27; Crone and Day 1960, 12; Cameron 1980, 203; Driver 2001, 36–37; Butlin 2005, 18. During its first decades the RGS had to meet in the quarters of the Horticultural Society and in other rented locations. The discussions regarding the needs for an own space and pleas for public support for the cause are evident from the reports of the council meetings, annual meetings and presidential speeches published in the *Journal.* See e.g. Hamilton, *JRGS,* 1838, vol. 8, lviii–lix; "At the Annual General Meeting, May 27, 1839", *JRGS,* 1839, vol. 9 vi; "At the Annual General Meeting, 25 th May, 1840", *JRGS,* 1840, vol. 10, vi; "Report of the Council", *JRGS,* 1842, vol. 12, v; "Report of the Council", *JRGS,* 1845, vol. 15, vii; "Report of the Council", *JRGS,* 1847, vol. 17, v, viii; "Report of the Council",, *JRGS,* 1849, vol. 19, viii–ix; "Report of the Council", *JRGS,* 1850, viii–ix; "Report of the Council", *JRGS,* 1851, vol. 21, vii–viii; "Report of the Council", *JRGS,* 1853, vol. 23, ix–x; "Report of the Council", *JRGS,* 1855, vol. 25, v–vii; "Report of the Council" 1857, vol. 27, vi; "Report of the Council", *JRGS,* 1858, vol. 28, xiii; "Report of the Council", *JRGS,* 1859, vol. 29, viii; "Report of the Council", *JRGS,* 1860, vol. 30, vii; Murchison, *JRGS,* 1869, vol. 39, cxxxvi; Murchison, *JRGS,* 1870, vol. 40, cxxxiii.

504 Foliard 2017, 50.

505 Cameron 1995, 17; Driver 2001, 34; Butlin 2005, 16.

506 See, for example, Annotation by Gairdner 19 November 1858 in Clarke to the Secretary of State for the Colonies 9 September 1858, f. 152, CO 201/507, TNA; Annotation by Newcastle 25 September 1859 in MacDonnell to Lytton 16 July 1859 no. 334, f. 82, CO 13/100, TNA; Annotation by Hall in draft to MacDonnell 26 January 1861 in MacDonnell to Newcastle 26 October 1860 no. 436, f. 690, CO 13/102, TNA.

507 In addition to Merivale, for example Chichester Fortescue, John Ball Earl of Carnavaron, Lord John Russell and Henry Labouchere were fellows of the RGS.

508 For example, the following governors were fellows: Henry Barkly, William Denison, Colonel George Gawler, Richard McDonnell. The following surveyor-generals were fellows: Thomas Mitchell, John S. Roe.

509 The council minute books document some of this correspondence between the governors and the RGS. See, for example, Council Minute Book, October 1830-July 1841, 285, RGS. Roderick Murchison fostered close contacts with many governors during their periods of service and after. See for example George Bowen's and Dominick Daly's correspondence with Roderick Murchison in the 1860s. Murchison Papers, vol. 1 f. 197, 199, BL; Murchison Papers, vol. 2, f. 1, f. 298, BL. Also see, Stafford 1988, 72, 82.

the place to continue discussing matters relating to the geography of the continent when colonial officials returned to Britain. Indeed, George Gawler (1795–1869), the governor of South Australia from 1838 to 1841, actively corresponded with secretary Norton Shaw, as well as attended the RGS's evening meetings on his return to London.[510] In a similar manner, the surveyor-generals and the explorers of Australia occasionally took part in the meetings of the society.[511]

A multitude of different material relating to exploration and geographical discovery in Australia was transmitted to the RGS from the Colonial Office. This data could be readily consulted by the council members, as well as be read out in meetings or used in the society's publications. Most of these instances are documented within the original correspondence as draft letters and annotations, which enables researchers today identify what was forwarded and when.[512] The practice presumably began almost immediately after the establishment of the society. In 1832, Robert Hay, the permanent under-secretary of state, forwarded an article (accompanied by a map) to the society's secretary, captain Alexander Manocchie, which had been written by Allan Cunningham (1791–1839) and was based on material housed at the Colonial Department. The secretary of state, Viscount Goderich (1782–1859), who served as the first president of the RGS, wished to make the latest findings public and the newly-established geographical society was a prime vehicle for this.[513]

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[510] In addition to Gawler, Richard MacDonnell and Arthur Kennedy also attended the meetings. Gawler's active presence at the society's meetings in the late 1850s and the early 1860s is documented in the *Proceedings (PRGS)*, in which summaries of the discussions that took place were printed. See, for example, *PRGS*, 1857, vol. 2 no. 1, 28–30; *PRGS*, 1857, vol. 2 no. 3, 191–193; *PRGS*, 1859, vol. 4 no. 3, 1859, 77–79; *PRGS,* 1859, vol. 4 no. 3, 84; *PRGS,* 1860, vol. 5 no. 1, 9–10; *PRGS*, 1860, vol. 5 no. 2, 57–58; *PRGS*, 1861, vol. 6 no. 1, 13–15. For Gawler's correspondence with the RGS, which related to personal news and the exploration of the interior, see, for example, RGS/CB2/212, RGS; RGS/CB3/314, RGS; RGS/CB4/686, RGS. Kennedy and MacDonnell participated a meeting in July 1862. See *PRGS*, 1862, vol. 7 no. 1, 10–18.

[511] These visits are visible from the *Proceedings*, in which summaries of the discussions that took place were printed. See, for example, *PRGS*, 1858, vol. 3, no. 1, 18–34; *PRGS*, 1858, vol. 3, no. 4, 151–160; *PRGS*, 1859, vol. 4, no. 3, 79–86; *PRGS*, 1860, vol. 5, no. 1, 8–10; *PRGS*, 1860, vol. 5, no. 2, 55–60; *PRGS*, 1862, vol. 7 no. 3, 111–116.

[512] See, for example, an annotation in Darling to Goderich 17 March 1832 no. 37, f. 41, CO 201/226, TNA; Annotation in Fitzroy to Grey 2 January 1847 no. 3, f. 20, CO 201/379, TNA; Annotation in Fitzroy to Grey 9 January 1847 no. 13, f. 295, 297, CO 201/379, TNA; Annotation in Fitzroy to Grey 26 September 1847 no. 192, f. 141, CO 201/384, TNA; Draft to the Secretary of the RGS 18 March 1848 in Fitzroy to Grey 21 October 1847 no. 211, f. 402, CO 201/394, TNA; Draft to Shaw 11 February 1850 in Fitzroy to Grey 27 August 1849 no. 184, f. 261, CO 201/415; Annotation in Young to Newcastle 15 October 1853 no 53, f. 142, CO 13/82, TNA; Annotation in Fitzgerald to Grey 20 July 1855, f. 250, CO 18/88, TNA; Draft to Shaw 4 November 1856, f. 321, CO 201/496, TNA; Draft to the RGS in MacDonnell to Labouchere 11 July 1857 no. 112, f. 306, CO 13/95, TNA; Annotations in MacDonnell to Labouchere 30 November 1857 no. 203, f. 285, 287, CO 13/96, TNA; Annotations by Gairdner 9 April 1858 and Stanley 13 April 1858 in MacDonnell to Labouchere 11 February 1858 no. 223, f. 110, CO 13/97, TNA; Annotation by Dealtry 23 October 1858 in Kennedy to Stanley 13 August 1858 no. 97, f. 153, CO 18/106, TNA; Draft to the Royal Geographical Society 6 November 1858 in Kennedy to Stanley 13 August 1858 no. 100, f. 172, CO 18/106, TNA; Minute by Dealtry 2 November 1861 in MacDonnell to Lytton 24 August 1861 no. 512, f. 49, CO 13/106, TNA. Draft to the Secretary of the RGS 25 November 1861 in MacDonnell to Lytton 24 August 1861 no. 512, f. 94 CO 13/106, TNA; Annotation in Barkly to Newcastle 20 July 1861 no. 64, f. 264, CO 309/56, TNA; Annotation in Barkly to Newcastle 20 November 1861 no 92, f. 164, CO 309/57, TNA; Annotation in Barkly to Newcastle 19 February 1862 no. 24, f. 141, CO 309/59, TNA.

[513] 4 February 1832, Council Minute Book, October 1830-July 1841, 49, RGS.

In addition to the Colonial Office, the RGS accumulated material from other state departments. The lists of incoming correspondence documented in the council minute books demonstrate how the Foreign Office and the Admiralty forwarded material to the council.[514] They further document that a decision was made at the Foreign Office in 1851 to systematically forward all geographical communications to the RGS.[515] The practice of loaning material to be used and copied was reciprocal: the secretary of the RGS sent material to the civil servants of the Foreign Office or sent out maps from the society's collections to be used in the departments of state.[516]

Generally, when news about explorations arrived at the Colonial Office, the civil servants working in the department usually quickly assessed how the information should be communicated to the RGS. In 1850, Gordon Gairdner summarized the practice of communicating with the RGS in notes relating to the returns of land sales, the advances in geographical knowledge in Australia and reports of exploration received from the Survey Department in Western Australia: "With regard to the reports of exploration, when they contain matter of general interest, they are commonly sent with the accompanying maps to the Geographical Society". However, Gairdner continued by noting that the reports that were being dispatched to Britain now "add something it would appear, to the previous geographical knowledge of the country, but the information which they convey is more of a local and practical nature and would probably be more available for useful purposes if sent to the land board". This was an important point to note because, according to him, "the Geographical society are commonly very slow in returning any maps or reports lent to them".[517]

Gairdner's analysis reveals three points that are of particular interest. First, it highlights that even though the practice of sending material to the RGS was "common", it was considered on a case-by-case approach. Secondly, Gairdner's wording reveals that the material received had been perused in detail, as he was able to argue that the information therein was of a "local and practical nature" and not of "general interest". Thirdly, Gairdner's minute demonstrates the importance of convenience and practicability in determining the extent of the circulation of the material. In Gairdner's view the RGS was slow in returning the material loaned to it. Consequently, he considered it easier to send such data to the Land Board.

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[514] Council Minute Book October 1830-July 1841, 310, RGS; Council Minute Book November 1841–March 1853, 29, 101, 134, 252, 264, RGS; Council Minute Book April 1853-January 1859, 58, 72, 99-101, 142, RGS; Council Minute Book January 1859–February 1867, 2, 22, 23, 27, 29, 45, 52, 80, 90, 106, 151, 254, RGS. See also Crone and Day 1960, 12.

[515] 13 January 1851, Council Minute Book November 1841–March 1853, 264, RGS.

[516] Washington to Grey 21 October 1837, 309-317, CO 201/265, TNA; Webb to Stephen 20 September 1838, f. 69, CO 201/280, TNA. Decisions to loan maps and their return from the state departments are also documented in the council minute books. See, for example, 14 April 1856, Council Minute Book April 1853-January 1859, 129, RGS; 14 June 1858, Council Minute Book April 1853-January 1859, 293, RGS; 8 November 1858, Council Minute Book April 1853-January 1859, 303, RGS; 24 January 1859, Council Minute Book January 1859-February 1867, 2, RGS.

[517] Annotation by Gairdner in Fitzgerald to Grey 23 August 1850 no. 67, f. 324, CO 18/54, TNA.

Gairdner classified the information at hand as something that was interesting on the local level and therefore would not interest the RGS. This is important as it draws our attention to the notion about maps of different scales and their usefulness to the civil servants in the Colonial Office. The way Gairdner contrasted the local and practical with the general, in the context of the RGS, highlights how interest in geographical information was different in different places. Consequently, Gairdner's minute makes visible is that numerous factors were considered when deciding what was worthy of circulation in London, as well as in what form, to whom and on what grounds, even though the practice of communication with the RGS was well established. Thus, many factors had a role to play when the material and information received from the colonies was disseminated, in addition to simply having close connections to the society. On many occasions, more than one of these factors influenced the outcome. In what follows, I will examine all these factors in more detail. All in all, the examination that follows makes explicit that an abundance of geographical and cartographical knowledge relating to Australia became available to the RGS for perusal.[518]

First, ownership was a general factor affecting the movement of material. No restrictions usually existed in regard to the circulation of material that the governor transmitted with his dispatches. Consequently, in general information was distributed to different parties in a very efficient manner from the Colonial Office. However, individuals could try to limit what was done with the tracings and sketches once they reached London. Some of the authors expressed the hope that the maps, plans, illustrations and sketches that were conveyed to London should be kept away from the usual publishers and actors who utilized the material sent to the Colonial Office for their own work. As mentioned in chapter 2 Thomas Mitchell was one such individual, who sought to limit the use in Britain of the three-sheet map he had produced in Australia. In 1834 Mitchell made a strict requested via governor Richard Bourke that the civil servants in London "give directions at the Colonial Office that the copies of the map now transmitted be kept out of the hands of any Printers or Publishers of maps or other persons likely to anticipate the Surveyor General's design". Mitchell wished to sell his work in London as the official map of the colony and wanted to prohibit cartographers, including John Arrowsmith and James Wyld, from accessing it before it would be published.[519] Mitchell sent the box containing his map directly to Robert Hay, the under-secretary of state, "for the sake of greater safety" in order to be transmitted to his agent in London who was organizing the publication.[520] A request like this was not

[518] I emphasize this in reference to Kennedy's notion regarding the accessibility of armchair explorers in Britain in regard to the data produced by Australian explorers, as they were often retained in colonial institutions. I suggest that their accessibility to this data can be re-evaluated by contemplating the abundance of data flowing to the RGS from the Colonial Office. See Kennedy 2013, 46.

[519] Bourke to Stanley 5 May 1834 no. 45, f. 90-91, CO 201/239, TNA. For a similar example, see Minute by Hampton in "Progress [...] during the half year ending in 30th day June 1864" in Hampton to Cardwell 10 July 1864 no. 66, f. 35, CO 18/136, TNA.

[520] Mitchell to Hay 23 September 1834, f. 185, CO 323/173, TNA. See also, Mitchell to Hay 23 September 1834, f. 187, CO 323/173, TNA.

common and clearly altered the well-established practice of transmitting the material as the civil servants in the Colonial Office saw fit.

Secondly, the decisions made about where the material should be transmitted were sometimes influenced by explicit requests from governors. It was often suggested that the papers should be communicated to different scientific societies and institutions: the RGS, the Geological Society, or the Royal Botanic Gardens and so on. Motives varied, depending on the situation, between publicizing the results, to demanding that the quality of the knowledge be evaluated. Forwarding the material to different societies was deemed the best way to disseminate the most up-to-date information about the character of the continent. For example, in 1847 governor Robe wished to have Thomas Burr's (1814–1866) "report, plans and geological specimens forwarded to the Geological Society, by which their merits be tested, and publicity given to them". Usually these requests were fulfilled.[521]

Thirdly, the choice of material sent to the RGS appears to have been influenced by two somewhat conflicting, yet simultaneously applied, principles. At times the data was precisely allocated to different experts, according to the nature of the knowledge in question. In 1862, for example, the results of an expedition in north-western Australia were divided between professor George Airy (1801–1892) at Greenwich Observatory, the Ethnological Society and the RGS.[522] On the other hand, the results from the expeditions were also distributed based on established practice. In the 1840s, for example, Benjamin Hawes (1797-1862), the under secretary of state, suggested that the results of the Central Australian Expedition should be communicated to the Geological Society, rather than the RGS, as it would be of "immediate interest to the geologist" and as the "geographical facts are

[521] Robe to Grey 28 April 1847 no. 44, f. 461, CO 13/53, TNA. For similar examples see e. g. Grey to Stanley 25 June 1844 no. 69, f. 141, CO 13/38, TNA; Robe to Grey 15 January 1848 no. 5, ff. 39–41, CO 13/58, TNA; Hotham to Grey 31 January 1855 no. 22, f. 200, CO 309/31, TNA; MacDonnell to Lytton 11 November 1858 no. 271, f. 449, CO 13/97, TNA; Bowen to Newcastle 6 January 1860 no 11, f. 74, CO 234/1, TNA; Bowen to Newcastle 6 January 1860 no 12, f. 90, CO 234/1, TNA; Bowen to Newcastle 10 February 1859 no 21, f. 169, CO 234/1, TNA; MacDonnell to Lytton 18 April 1859 no 312, f. 223, CO 13/99, f. 223, TNA; Bowen to Newcastle 10 July 1860 no. 54, f. 565, CO 234/1, TNA; Bowen to Newcastle 8 December 1860 no 92, ff. 405-406, CO 234/2, TNA; Bowen to Newcastle 14 January 1861 no 6, ff. 44-46, CO 234/3, TNA; Bowen to Newcastle 8 June 1861 no 28, f. 215, CO 234/3, TNA; Bowen to Newcastle 5 September 1861 no. 51, f. 117, CO 234/4, TNA; Barkly to Newcastle 19 February 1862 no 24, f. 141, CO 309/59, TNA. For instances when a governor requests that the material should be transmitted to the RGS, but no visible traces of this exists, see, for example, Bowen to Newcastle 6 January 1861 no. 11, ff. 61-75, CO 234/1, TNA; Bowen to Newcastle 6 January 1861 no. 12, ff. 78-91, CO 234/1, TNA.

[522] A minute by Dealtry 23 April 1862 in Kennedy to Newcastle 18 February 1862 no. 27, ff. 123-124, CO 18/123, TNA; A minute by Elliot 24 April 1862 in Kennedy to Newcastle 18 February 1862 no. 27, f. 124, CO 18/123, TNA. See also Draft to the Secretary of the Royal Geographical Society 6 May 1862 in Kennedy to Newcastle 18 February 1862 no. 27, f. 125, CO 18/123, TNA; Draft to the Ethnological Society 6 May 1862 in Kennedy to Newcastle 18 February 1862 no. 27, f. 126, CO 18/123, TNA; Draft to Airy 6 May 1862 in Kennedy to Newcastle 18 February 1862 no. 27, f. 127, CO 18/123, TNA. For similar examples of deciding to distribute the material to different parties see, for example, a minute by Gairdner 12 May 1855 in Hotham to Grey 31 January 1855 no. 22, f. 200, CO 309/31, TNA; Annotation in Barkly to Newcastle 19 February 1862 no. 24, f. 141, CO 309/59, TNA; A minute by Gairdner 15 September 1860 in Bowen to Newcastle 10 July 1860 no. 54, f. 566, CO 234/1, TNA; Minute by Cox 25 February 1861 in Bowen to Newcastle 8 December 1860 no. 92, ff. 417-418, CO 234/2, TNA.

few".[523] However, secretary of state Earl Grey (1802–1894) concluded that the material should be sent to the RGS, as this was common practice at the time. He thought that it was "very immaterial to which Society they are sent first as in all probability they will be printed".[524]

Fourthly, the contents and form of the material affected how they were transferred. When the civil servants concluded that the material should be sent to the RGS (and to other parties as well) they also decided which parts of the material they had received should be transmitted. Different solutions existed depending on the material in question. The civil servants discussed these issues in their minutes: the dispatches or the enclosures could be forwarded as they were, or it could be decided to edit the data and only send out a portion of the material. Consequently, copies of the dispatches were usually composed to be circulated: on these occasions, the information was passed on without altering the content of the dispatch in any way.[525] Portions of the dispatches were sometimes redacted when preparing the material to be sent. The Colonial Office staff took this course when they wanted to leave out sections they did not want to circulate. This was often the case when governors made negative comments about the attributes of individuals.[526] In 1857, for example, when governor Richard MacDonnell reported to London about the results of an expedition

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[523] A minute by Hawes s. d. in Robe to Gladstone 11 June 1846 no. 68, f. 260, CO 13/49, TNA.
[524] A minute by Grey s. d. in Robe to Gladstone 11 June 1846 no. 68, f. 260, CO 13/49, TNA.
[525] This principle is visible from the annotations, minutes and draft letters addressed to the RGS. See, for example, the annotation in Lindesay to Goderich 23 November 1831 no. 7, f. 331, CO 201/221, TNA; Draft to the Secretary of the RGS 21 October 1843 in Grey to Stanley 26 May 1843 no. 84, f. 48, CO 13/33, TNA; Annotation in Grey to Stanley 16 September 1843 no. 131, f. 157, CO 13/34, TNA; Annotation in Grey to Stanley 19 November 1843 no 170, f. 542, CO 13/34, TNA; Annotation in Grey to Stanley 18 May 1844 no. 54, f. 209, CO 13/37, TNA; Draft to Jackson 3 February 1845 in Grey to Stanley 25 June 1844 no. 69, f. 145, CO 13/38, TNA; Annotation in Grey to Stanley 10 August 1844 no. 90, f. 334, CO 13/38, TNA; Annotation in Grey to Stanley 25 March 1845 no. 31, f. 300, CO 13/43, TNA; Annotation in Gipps to Stanley 29 March 1846 no 72, 173, CO 201/366, TNA; Draft to the Secretary of the RGS 10 October 1846 in Robe to Gladstone 11 June 1846 no. 68, f. 260, CO 13/49, TNA; Draft to Shaw 11 February 1856 in Fitzroy to Grey 27 August 1849 no. 184, f. 261, CO 201/415, TNA; Annotation in Young to Newcastle 15 October 1853 no. 54, f. 143, CO 13/82, TNA; Annotation in Fitzgerald to Grey 20 July 1855 no. 80, f. 250, CO 18/88, TNA; Draft to the Secretary of the RGS 19 August 1856 in Denison to Labouchere 20 March 1856 no. 52, f. 419, CO 201/493, TNA; Annotation in MacDonnell to Labouchere 11 February 1858 no. 223, f. 109, CO 13/97, TNA; Annotation in Bowen to Newcastle 10 February 1860 no. 21, f. 164, CO 234/1, TNA; Minute by Gairdner 14 May 1860 in Bowen to Newcastle 10 February 1860 no. 21, f. 169, CO 234/1, TNA; Minute by Hall 25 January 1861 in Kennedy to Newcastle 25 November 1860 no. 109, f. 208, CO 18/119, TNA; Draft to the Secretary of the RGS 7 February 1861 in Kennedy to Newcastle 25 November 1860 no. 109, f. 208, CO 18/119, TNA. On rare occasions the original dispatch or its duplicate was sent. See, for example, the annotation in Grey to Stanley 22 June 1844 no. 67, f. 96, CO 13/38, TNA; Annotation in Young to Newcastle 15 October 1853 no. 53, f. 142, CO 13/82, TNA.
[526] See, for example, the annotation in Fitzroy to Grey 9 January 1847 no. 13, f. 297, CO 201/379, TNA; the annotation in Fitzroy to Grey 26 September 1847 no. 192, f. 141, CO 201/384, TNA; the annotation by Merivale 15 October 1856 in Gregory to Labouchere 20 June 1855, f. 175, CO 201/497, TNA Annotation by Gairdner in Fitzgerald to Grey 20 July 1855 no. 80, f. 254, CO 18/88, TNA; Annotations by Gairdner and Merivale 14 January 1859 and 17 January 1859 in MacDonnell to Lytton 11 November 1858 no. 271, ff. 453-454, CO 13/97, TNA; Draft to Murchison 4 February 1859 in MacDonnell to Lytton 11 November 1858 no. 271, f. 455, CO 13/97, TNA; the annotation by Gairdner 18 February 1859 in MacDonnell to Lytton 11 December 1858 no. 281, f. 513, CO 13/97, TNA; Annotation by Gairdner and Carnavon 14 April and 19 April 1859 in MacDonnell to Lytton 21 January 1859 no. 296, f. 110, CO 13/99, TNA.

led by captain Arthur Freeling, the civil servants discussed the best way to communicate this information to the RGS. A problem arose as MacDonnell had made some personal notes about Freeling in which he expressed his dissatisfaction about the way he had chosen to quit the expedition earlier than planned. Furthermore, Freeling's report was so extensive that Gairdner noted that getting it back from the RGS would take a long time and be inconvenient. Consequently, Merivale thought that the report could be sent without the dispatch and the tracing. This was subsequently the manner in which the report was transmitted.[527]

Extracts were also prepared when civil servants considered that some portions of a dispatch were not relevant to the interest of RGS.[528] On these occasions it is evident that the preference of the person scrutinizing the material was the principal deciding factor on what was ultimately sent. For example, in 1860 Gairdner noted that the portion of governor MacDonnell's dispatch that discussed the value of mines in South Australia, which he had inspected on his tour, could be left out as the "subject is not immediately connected with the objects of the Society".[529] However, no extract was prepared as Gairdner's superior thought that it was not necessary.[530]

These examples demonstrate some aspects of what was taken into consideration when transmitting information from the colonies: what was deemed necessary to send and how this should be carried out. In the case of Freeling, the best option was considered to be leaving out the delicate texts and the tracing and waiting for the duplicates before transmitting the information. The practice of preparing extracts was a way of controlling the dissemination of information. If all the material had been communicated to the RGS, it would have created an inconvenience for the Colonial Office in terms of the need to further control the publishing process.[531]

The civil servants also considered if transmitting the papers of the explorers was appropriate, as they were not always certain if a particular explorer in question was contemplating publishing an account himself. In the 1840s, for example, the RGS requested details about Edward J. Eyre's research. James Stephen, the permanent under-secretary of state,

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[527] Annotations by Gairdner 11 December 1857 and Merivale 17 December 1857 in MacDonnell to Labouchere 6 October 1857 no. 184, ff. 5-6, CO 13/96, TNA; Draft to the Sec. of RGS 8 January 1858 in in MacDonnell to Labouchere 6 October 1857 no. 184, ff. 7-8, CO 13/96, TNA. For similar examples, see the annotations in Daly to Newcastle 25 September 1862 no. 45, f. 128, CO 13/110, TNA.

[528] This was also done with some enclosures. See, for example, the draft to Jackson 24 January 1845 in Grey to Stanley 10 August 1844 no. 90, ff. 339-340, CO 13/38, TNA.

[529] A minute by Gairdner 17 March 1860 in MacDonnell to Newcastle 10 January 1860 no. 360, ff. 7-8, CO 13/102, TNA.

[530] A minute by Fortescue in MacDonnell to Newcastle 10 January 1860 no. 360, f. 8, CO 13/102, TNA Annotation in MacDonnell to Newcastle 10 January 1860 no. 360, f. 3, CO 13/102, TNA; Draft to the Secretary of the RGS 13 April 1860 in MacDonnell to Newcastle 10 January 1860 no. 360, f. 12, CO 13/102, TNA.

[531] This becomes clearly visible in the context of Robert Schomburgk's (an explorer of British Guyana) papers and the notes on the correspondence documented in the Council Minute Book in 1843. See 13 March 1843, 42, Council Meeting Minute Book Nov 1841-March 1853, RGS; 1 May 1843, 49, Council Meeting Minute Book, Nov 1841-March 1853, RGS; 13 November 1843, 57, Council Meeting Minute Book, Nov 1841-March 1853, RGS.

read Eyre's papers and contemplated that there was no way of knowing if he was planning on publishing any of the reports of "journies [sic] of the most formidable kind" that were stored at the Colonial Office.[532] However, on this occasion Gordon Gairdner stated that the society would only use the data to discuss whether Eyre should be awarded the Gold Medal by the RGS.[533]

Furthermore, the annotations attached to the dispatches make explicit (at least on most occasions) which of the enclosures were to be transmitted. The evaluation of what should be communicated was based on their likely availability via other channels. The civil servants wrote down if they were aware that the RGS already possessed the material they had received. This was the case, for example, regarding John McDouall Stuart's maps and journal, and therefore there was no need to make them available to the society.[534] Similarly, the expediency of forwarding newspaper articles or other published material that might be available to the RGS via other routes was discussed. At times, it was concluded that the need to communicate them did not exist. On other occasions, material was forwarded "for form's sake".[535]

The enclosures, such as maps or journals, were typically transmitted in the original. The civil servants habitually requested that these documents should be returned to the Colonial Office after they had been consulted. Making copies of maps would have been too slow

532 A minute by Stephen 28 March 1843 in RGS to CO 17 March 1843, f. 306, CO 201/238, TNA.

533 A minute by Gairdner 24 March 1843 in RGS to CO 17 March 1843, f. 306, CO 201/238, TNA; Minute by Stanley in RGS to CO 17 March 1843, f. 306, CO 201/238, TNA. The reply received from the RGS later confirmed this. See Jackson to Hope 5 April 1843, f. 334, CO 201/238, TNA. A similar instance occurred with the papers relating to the North Australian Expedition led by A. C. Gregory. Before sending the papers relating to the expedition the civil servants contemplated whether Gregory was planning to publish a separate travel account. See the minute by Merivale 20 January 1858 in Murchison to Labouchere 19 January 1858, f. 16, CO 201/506; the minute by Gairdner 21 January 1858 in Murchison to Labouchere 19 January 1858, ff. 16-17, CO 201/506; the minute by Merivale 21 January 1858 in Murchison to Labouchere 19 January 1858, f. 17, CO 201/506.

534 A minute by Cox 28 February 1861 in MacDonnell to Newcastle 26 December 1860 no. 469, f. 421, CO 13/103, TNA. For a similar example see, for example, the minute by Stephen 2 May 1840 in Hutt to Glenelg 2 December 1839 no. 77, f. 228, CO 18/23, TNA; Minute by Elliot 31 May 1859 in Kennedy to Lytton 15 March 1859 no. 30, f. 87, CO 18/109, TNA.

535 A minute by Gairdner in MacDonnell to Lytton 16 July 1859 no. 334, ff. 81-82, CO 13/100, TNA. Also see the annotation in Fitzroy to Grey 26 September 1847 no. 192, f. 142, CO 201/384, TNA; the minute by Gairdner in Fitzroy to Grey 21 October 1847 no. 211, f. 401, CO 201/394, TNA; A minute by Gairdner 21 March 1853 in Fitzroy to Pakington 25 November 1852 no. 185, f. 102, CO 201/455, TNA; A minute by Cox 25 February 1861 in MacDonnell to Newcastle 26 December 1860 no. 470, f. 434, CO 13/103, TNA.

and expensive a process.[536] When the expedition journals were printed and when spare copies existed, they could be given to interested parties. Governors were also asked to furnish the Colonial Office with extra copies on occasions to ensure the wide circulation of the results of expeditions. On these occasions, no requests were made to have the material returned to the Colonial Office, as the civil servants in this department usually retained multiple copies.[537]

The transmission of particular enclosures was also one way of disposing of them if their use to the Colonial Office was called into question. In May 1843, for example, five drawings representing the point of intersection between Lake Torrens and Spencer's Gulf, which were described as "scenes in the neighbourhood of one of the most interesting geographical points in this continent", was sent to the Colonial Office by George Grey, the governor of South Australia. Lake Torrens was considered a highly interesting geographical feature at the time as its shape and extent were still unknown in many places. Grey thought that the drawings by deputy surveyor general Thomas Burr would be of probable interest to the RGS. In addition, Grey transmitted a manuscript that outlined the dialect spoken by the indigenous people of Port Lincoln. He considered that this would be a good addition to the library of the Colonial Office, or, it could alternatively also be transmitted to the RGS.[538] The civil servants were keen on viewing the drawings, but Gordon Gairdner deemed them to be of no interest. Hence, the most important issue related to how the drawings and the vocabulary should be disposed of. It seems that Lord Stanley recommended that the material

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[536] For the transmittance of maps in their original form, see, for example, the annotation in Stirling to Goderich 2 April 1832 no. 12, f. 42, CO 18/10, TNA; the annotation in Grey to Stanley 16 September 1843 no. 131, f. 157, CO 13/34, TNA; Draft to Jackson 20 march 1844 in Grey to Stanley 16 September 1843 no. 131, f. 160, CO 13/34, TNA; Draft to Jackson 4 February 1845 in Grey to Stanley 22 June 1844 no. 67, ff. 106-107, CO 13/38, TNA; Annotation in Robe to Gladstone 11 June 1846 no. 68, f. 254, CO 13/49, TNA; Draft to the Secretary of the RGS 23 August 1848 in Fitzroy to Grey 18 March 1848 no 62, ff. 122-123, CO 201/395, TNA; Draft to Murchison 4 January 1859 in MacDonnell to Lytton 11 November 1858 no. 271, ff. 455-456, CO 13/97, TNA. For the transmittance of enclosures other than maps in their original form, see, for example, Draft to Jackson 14 April 1846 in Grey to Stanley 7 September 1845 no. 106, f. 470, CO 13/44, TNA; Annotation in Robe to Gladstone 11 June 1846 no. 68, f. 254, CO 13/49, TNA; Draft to the Secretary of the RGS 12 September 1849 in Fitzgerald to Grey 17 May 1849 no. 34, f. 302, CO 18/50, TNA; Draft to Murchison 6 November 1858 in Kennedy to Stanley 13 August 1858 no. 100, f. 172, CO 18/106, TNA; Draft to Murchison 29 April 1861 in Kennedy to Newcastle 26 January 1861 no. 24, f. 149, CO 18/118, TNA; Draft to the Secretary of the RGS 25 November 1861 in MacDonnell to Lytton 24 August 1861 no. 512, f. 94, CO 13/106, TNA; Draft to the Secretary of the RGS 28 November 1861 in MacDonnell to Lytton 27 September 1861 no. 522, f. 240, CO 13/106, TNA; Draft to the Secretary of the RGS 12 December 1861 in Kennedy to Newcastle 25 September 1861 no. 94, f. 150, CO 18/119, TNA.

[537] For example, the annotation by Gairdner s. d. in Fitzgerald to Grey 20 July 1855 no. 80, f. 255, CO 18/88, TNA; the annotation by Merivale 10 November 1855 in Fitzgerald to Grey 20 July 1855 no. 80, f. 255, CO 18/88, TNA; Draft to Kennedy 3 December 1855 in Fitzgerald to Grey 20 July 1855 no. 80, ff. 256-257, CO 18/88, TNA; Draft to Grey 4 December 1855 in Fitzgerald to Grey 20 July 1855 no. 80, ff. 258-259, CO 18/88, TNA, Draft to the Secretary of the RGS 19 August 1856 in Denison to Labouchere 20 March 1856 no. 52, f. 419, CO 201/493, TNA; the minute by Gairdner 11 December 1857 in MacDonnell to Labouchere 6 October 1857 no. 184, ff. 5-6, CO 13/96, TNA; Draft to the Secretary of the RGS 7 February 1861 in Kennedy to Newcastle 25 November 1860 no. 109, f. 208, CO 18/119, TNA; Draft to the Secretary of the RGS 5 December 1861 in MacDonnell to Lytton 27 September 1861 no. 523, f. 265, CO 13/106, TNA; Annotation in Barkly to Newcastle 19 February 1862 no. 24, f. 141, CO 309/59, TNA.

[538] Grey to Stanley 5 January 1843 no. 3, ff. 24-27, CO 13/31, TNA.

should be forwarded to the RGS, just as Grey had suggested.[539] Consequently, it is evident that decisions about what should be done with the material that landed on the desks of the civil servants were not always straightforward.

The civil servants had to bear in mind practical consequences when contemplating if particular material should be sent to the RGS. A particularly noteworthy aspect was the fact that material that was loaned out to the society was usually away from the Colonial Office for a long time. Consequently, when governor George Bowen, for example, sent a map of Queensland to the department and asked that it be sent to the RGS, the civil servants noted that it was better to wait for a copy of the map to arrive and not to lend the copy in their possession as the RGS "was so slow in returning anything which is lent to them, if they ever return the loans".[540] The minutes explicitly state how the civil servants discussed how the society's shabbiness in returning the material should be addressed. Gairdner's minutes emphasize this point. He sometimes urged that the society should be reminded about how the material was expected to be returned promptly. He also suggested that the material should be first circulated via other bodies and only then communicated to the RGS, as they were notoriously slow at returning loans.[541]

At times Gairdner also argued that it was not worth sending the papers at all to the RGS, as it was so tardy in returning items. This was the case in June 1857, when he noted that the papers received from Joseph R. Elsey (1834–1857), the surgeon and naturalist of the North Australian Expedition led by Gregory, contained little information of interest. Therefore, it would not be worth making a copy for the RGS at the Colonial Office. Nor did he think it would be a good idea to let the society carry out the copying as "[t]hey are so dilatory in returning papers lent to them in original, that there might be an inconvenience in posting these papers in that way". On this occasion, for the sake of convenience and because the papers were not important, the material was not shared with the society.[542]

On the rare occasions when civil servants had to contemplate if some material should be permanently stored with the RGS, Gairdner took measures to ensure that the material would be well preserved. This was most explicit regarding the disposal of Thomas Baines's paintings, which related to the North Australian Expedition. The RGS asked for permission

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539 Annotation by Stephen 9 May 1843 in Grey to Stanley 5 January 1843 no. 3, f. 27, CO 13/31, TNA; the annotation by Stephen 10 May 1843 in Grey to Stanley 5 January 1843 nos. 3, 27, CO 13/31, TNA; the annotation by Gairdner 10 May 1843 in Grey to Stanley 5 January 1843 no. 3, f. 27, CO 13/31, TNA; Annotation by Stanley 12 May 1843 Grey to Stanley 5 January 1843 no. 3, f. 27, CO 13/31, TNA.

540 The minute by Gairdner 26 December 1860 in Bowen to Newcastle 29 September 1860 no. 78, f. 82, CO 234/2, TNA. Also see the minute by Dealtry 24 December 1860 in Bowen to Newcastle 29 September 1860 no. 78, ff. 81-82, CO 234/2, TNA.

541 See, for example, the minute by Gairdner in Fitzroy to Grey 18 March 1848 no. 62, f. 112, CO 201/395, TNA; the minute by Gairdner 21 December 1848 in Fitzgerald to Grey 3 September 1848 no. 3, f. 162, CO 18/48, TNA; annotations by Unwin and Elliot in Shaw to Elliot 13 September 1849, f. 512, CO 201/420, TNA.

542 The minute by Gairdner in Denison to Labouchere 25 February 1857 no. 38, ff. 483, 488-498, CO 201/498, TNA. For a similar example, see the minute by Gairdner 21 December 1848 in Fitzgerald to Grey 3 September 1848 no. 3, f. 162, CO 18/48, TNA; the minute by Hawes in Fitzgerald to Grey 3 September 1848 no. 3, f. 162, CO 18/48, TNA.

to keep them. Gairdner noted that the RGS was a natural option for some of the paintings, but it transpired that the society did not possess an adequate space to exhibit them. He had also learned that Baines's paintings from South Africa, which had been given to the society, "have not since been seen and that their existence is scarcely known". Gairdner suggested that they could be given to the Royal Gardens in Kew in order to keep the paintings safe. His suggestion was influenced by the fact that the paintings were not really connected to geography. He reasoned that the paintings that depicted vegetation would be of interest to the thousands of annual visitors to the botanical garden. William Hooker (1785–1865) had already expressed interest in exhibiting them.[543] Considering the matter, Merivale agreed, and eventually the civil servants recommended that Murchison and Hooker could share the paintings and were permitted to agree about their disposal by themselves.[544] This particular instance demonstrates how the limited quarters that the RGS occupied were taken into account, alongside the content of the material in question.

In general, the minutes of Gairdner's colleagues and their draft letters document the outcome of his suggestions. For example, sentences were sometimes added to the letters sent to the RGS expressing hopes that the papers would be returned as early as possible. In a draft letter and a minute that were used as the basis of a letter addressed to the secretary of the RGS in October 1849, the civil servants hoped that the documents would be returned quickly "in order to keep the Public Records complete". It was also noted, in a polite note, that this should not interfere with the publishing work of the society.[545]

It appears that the loaning of maps was deemed particularly troublesome. The RGS's inability to return maps promptly to the Colonial Office was an inconvenience that the civil servants noted and consequently wanted to avoid.[546]The civil servants sometimes chose to initially circulate documents within the government departments and only afterwards were these documents communicated to the RGS.[547] This point highlights the fact that the circulation of material had to be performed in a practical manner. Choices about where the material should be transmitted were intertwined with questions relating to the significance

[543] A minute by Gairdner 16 November 1857 in Murchison to Labouchere 12 November 1857, ff. 372-373, CO 201/500, TNA.

[544] Minute by Merivale 16 November 1857 in Murchison to Labouchere 12 November 1857, f. 373, CO 201/500, TNA. Also see the annotation by Fortescue 17 November 1857 in Murchison to Labouchere 12 November 1857, f. 373, CO 201/500, TNA; A minute by Labouchere 26 November 1857 in Murchison to Labouchere 12 November 1857, f. 373, CO 201/500, TNA; Draft to Hooker 12 December 1857 in Murchison to Labouchere 12 November 1857, f. 374, CO 201/500, TNA; Draft to Murchison 5 December 1857 in Murchison to Labouchere 12 November 1857, ff. 375-376, CO 201/500, TNA.

[545] Draft to the Secretary of the RGS 5 October 1849 in Fitzroy to Grey 25 April 1849 no. 55, ff. 184-185, CO 201/412, TNA.

[546] Annotation by anon. in Gregory's report to Governor Denison 14 June 1856, f. 181, CO 201/498, TNA; Annotation by Gairdner 7 May 1857 in Shaw to Merivale 6 May 1857, ff. 272-273, CO 201/500, TNA.

[547] See, for example, the minute by Gairdner 25 May 1848 in Irwin to Grey 15 Feb 1848 no. 20, f. 159, CO 18/47, TNA; the minute by Elliot 25 May 1848 in Irwin to Grey 15 Feb 1848 no. 20, f. 159, CO 18/47, TNA; the annotation by Gairdner 21 December 1848 in Irwin to Grey 2 August 1848 no. 58, f. 124, CO 18/48, TNA; the annotation by Gairdner in Fitzgerald to Grey 4 September 1848 no. 3, f. 162, CO 18/48, TNA.

of the information at hand and for what other purposes, such as parliamentary papers or for simple reference, the material might be used at the Colonial Office.

The circulation of enclosures, therefore, came with the risk of them getting lost and not being available for use at the Colonial Office when needed. Thus, the civil servants also contemplated introducing measures to control the rate at which maps were loaned outside the department. In May 1857, Gairdner, who was clearly annoyed by the uncertainty of when maps and papers would be returned, noted in an annotation that it might be better to issue a small threat to the society. He explained that the tracings relating to the North Australian Expedition, which were borrowed by the RGS, had been needed at the department on numerous occasions when the results of the expedition had been discussed. This was especially the case when the idea of establishing a convict settlement in North Australia had been considered. In fact, Gairdner had learned from John Arrowsmith that the maps had already been copied. Thus, in actual fact they had merely not been returned to the department, despite a request being sent to the society that they be sent back at their "earliest convenience". Therefore, Gairdner noted that this occasion reminded him of the old "complaint against the Geographical Society" that maybe it would be possible to reprimand it and express "a fear that it may be found difficult in future to supply the Society with original maps from this Dep.t unless they are returned with greater punctuality?"[548] These terms, however, were not communicated to the society, as it seems that Henry Merivale thought it unnecessary and as the society returned the tracings a few days later anyway after a loan of half a year.[549]

The threats issued by Gairdner and the frequent insinuation that the RGS was lax in returning material demonstrates that even though communications between the organizations was regular, the civil servants sought to actively control these processes. Simultaneously, the well-established rhythm of communications makes explicit that the RGS was an important partner for the Colonial Office when it came to circulating information received from the colonies. Consequently, the civil servants could simultaneously enable and constrain the access to the different pieces of data.

These chains of communication highlight two particular aspects. First, they historicize a portion of the collections housed today by the RGS. These practices of communication constituted one part in accumulating the archive of geographical and cartographical knowledge that the RGS hoped to form. The different measures that the civil servants adopted when transmitting the material demonstrates that what accumulated at the RGS was not identical with what the civil servants had at their disposal. What the RGS received from the Colonial Office was based on multiple decisions regarding what should be communicated, as well as when and why. Second, they are a starting point to examining and

548 The minute by Gairdner 7 May 1857 in Shaw to Merivale 6 May 1857, ff. 272-273, CO 201/500, TNA. Hints about the discussion can be found in the minutes written on the backside of lieutenant Chimmo's report on the settlement possibilities of North Australia, which were communicated to the Colonial Office in January 1857. See Chimmo to Undersecretary of State 20 January 1857, f. 78, CO 201/501, TNA.
549 The minute by Merivale 7 May 1857 in Shaw to Merivale 6 May 1857, f. 273, CO 201/500, TNA.

explaining the character of knowledge that the society was able to communicate to the public in various forms. This is the topic of the following section.

Communicating Geographical Knowledge

The close relationship of the RGS and the Colonial Office and the lines of communication were very beneficial for the former. In practice, it usually meant quick access to the latest information from the colonies. As the secretary of the RGS received the different types of material from the civil servants, the next step was to contemplate what should be done with the information he received. Documentation about what was done with the papers that were received by the RGS can be gathered from the minutes of the council meetings of the society, as well as from the markings on the material that were received. During the council meetings, the members went through the correspondence they had received, as well as appraising papers that had to be reviewed. They also carried out a ballot in regard to the printing of the papers that had already been reviewed and decided on the papers that were to be read at upcoming evening meetings.

At these evening meetings, which were held between November and August, new members were presented to the society, papers were read and important issues and news were announced. In addition, the meetings often had small "exhibitions", in which maps, charts, plans, photographs, pictures, paintings, specimens, models of different types of articles and ethnographic objects were laid out for those present to view.[550]

The printing of the papers occurred in two different publications during the period studied in the present work. The first was the *Journal of the Royal Geographical Society of London,* which had been published since 1831. In 1855, the society established another publication, the *Proceedings of the Royal Geographical Society of London.* The *Proceedings* was meant to facilitate the speedier communication of geographical knowledge than the *Journal*. With six issues published annually, the *Proceedings* consisted of short announcements, minutes of those presented at the society and elected fellows, reports and summaries of the papers read at the evening meetings and documentation of the discussions that had taken place.[551]

The different papers that were considered for reading, reviewing and to be published consisted of the thousands of different types of communications the RGS received every year. As already noted, the communications came from a variety of actors, in addition to the departments of state. Individual scientists and explorers provided the society with new

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[550] Passim., Evening Meeting Minute Book November 1834-June 1840, RGS; Passim., Evening Meeting Minute Book 9 November-26 April 1856; Passim., Evening Meeting Minute Book June 1856-May 1865, RGS. See also Koivunen 2009, 106.
[551] Middleton 1978, 99.

information, alongside the expanding network of foreign correspondents that reported developments in their countries and provided the society with copies of local geographical publications.[552] The explorers setting out to the field or their patrons had direct connections with the RGS and other scientific societies, even if the expeditions were not organized by the society in question. Many deemed the communication of knowledge to the RGS to be an important task, as it was a way to earn a name within the field of exploration and enhance their social mobility. Many explorers donated the specimens they had collected and the materials they had produced to the different institutions according to their interests.[553] In general, explorers returning from the field were often invited to read a paper. Leila Koivunen notes that the presentations of those who had explored Africa "were subsequently published in the journal of the Society, and were often viewed as the official expedition report".[554] Consequently, the RGS functioned as a primary conduit for publicizing new knowledge in Britain that had been gleaned from explorations.

The latest accounts received from these different sources regarding Australian exploration were read at the evening meetings. This can be gleaned from the records of the evening meeting books. In contrast to the invited speeches mentioned by Koivunen, the reading of the papers was not undertaken by the person who had written them.[555] The evening meetings served as a platform for speedily distributing data to those in the audience. The discussions that took place mark an important step in the analysis of the information that had been received. They can be partly addressed by referring to the record of the discussions that occurred after the presentation of the papers, which were printed in the *Proceedings*. These discussions serve as traces, for example, of how the results of "one of the most frenetic and concentrated periods" of Australian exploration in the late 1850s and early 1860s were debated at the society.[556]

The discussions at the RGS after the reports had been read in relation to the discoveries of John McDouall Stuart, Robert O'Hara Burke and William Wills, for example, and the many expeditions that followed in their wake, reveal how the geography of the interior of the continent was constantly debated. Colonel George Gawler, the former governor of South Australia, was a strong supporter of the theory that the interior could be traversed and

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[552] The communications received are documented in the Council Minute Books. See Council Minute Book, October 1830-July 1841, RGS; Council Minute Book November 1841-March 1853, RGS; Council Minute Book April 1853-January 1859, RGS, IBG; Council Minute Book January 1859-February 1867, RGS. Most of the letters received can be located within Journal Manuscript Archives and the Correspondence Block of the Royal Geographical Society.
[553] Ryan 1996, 33–34; Koivunen 2009, 28, 106; Kennedy 2013, 37–38.
[554] Koivunen 2009, 106.
[555] See for example the following minutes: 12 June 1837, 195-199, Evening Meeting Minute Book November 1834–June 1840, RGS; 14 March 1842, 43, Evening Meeting Minute Book 9 November 1840-26 April 1856, RGS; 10 June 1844, 100, Evening Meeting Minute Book 9 November 1840-26 April 1856, RGS; 9 June 1845, 123-124, Evening Meeting Minute Book 9 November 1840–26 April 1856, RGS; 27 April 1847, 159, Evening Meeting Minute Book 9 November 1840–26 April 1856, RGS; 8 February 1847, 159, Evening Meeting Minute Book 9 November 1840-26 April 1856, RGS; 22 February 1847, 159-165, Evening Meeting Minute Book 9 November 1840-26 April 1856, RGS.
[556] Middleton 1978, 99; Kennedy 2013, 98.

routes of communication could be established from the south to the north. Some, like Paul Edmund Strzelecki, the explorer and geologist who had experience of Australian exploration, and geologist and many times president of the RGS Roderick Murchison (1792–1871), entertained the idea of the interior as a desert. However, their views were softened as a result of Stuart's discoveries. All parties appear to have hoped that a colony could be established in the north.[557] Gawler, for example, emphasized that communications across Australia would enable the formation of a "compact empire" on the continent.[558]

Determining what happened after these meetings is not straightforward. It appears that the council considered what to do with the material sent from the Colonial Office and from the different individuals on a case-by-case basis. The reading of a paper was sometimes followed by a review process, which concluded in a final decision being made about whether it would be printed in the *Journal* or the *Proceedings*. This process was affected by practical considerations: if information arrived bit-by-bit, as was the case regarding longer expeditions, such as Sturt's Central Australian Expedition, papers were often read soon after they arrived. However, they were not always printed, as it was deemed that their knowledge value was not significant.[559] The RGS received hundreds of papers from all over the world. Hence, it is natural that not every paper could be read or printed. In attempting to understand the motives behind the practices of disseminating information, it is necessary to further examine how the material that was received was made public: what factors played a role in ensuring that a paper was printed? Similar questions have been raised in the context of travel writing.[560] In undertaking such a study, I aim to expand our knowledge of the RGS as a center for knowledge, in which the material that was received was not

[557] See the discussions as recorded in the *Proceedings*: *PRGS*, 1857, vol. 2, no. 1, 16–30; *PRGS,* 1857. vol. 2, no. 3, 185–193; *PRGS*, 1858, vol. 3, no. 4, 151–160; *PRGS*, 1859, vol. 4, no. 3, 77–79; *PRGS*, 1859, vol. 4, no. 3, 79–86; *PRGS*, 1859, vol. 4, no. 3, 94–97; *PRGS*, 1860, vol. 5, no. 1, 8–10; *PRGS*, 1860, vol. 5, no. 2, 55–60; *PRGS*, 1860, vol. 5, no. 3, 104–106; *PRGS,* 1860, vol. 5, no. 3, 124–127; *PRGS,* 1861, vol. 6, no. 1, 13–15. For Strzelecki, see Heney 1967; for Murchison see Stafford 1989; Driver 2001, 39, 42–46.

[558] *PRGS*, 1860, vol. 5, no. 2, 57.

[559] For example, material relating to Sturt's expedition, which arrived in January 1845, was not read instantly. It was quickly decided that dispatches by Sturt, that had been received in 9 June 1845, should be read and reviewed by John Barrow. At the next meeting it was decided that they would not be printed. See 9 June 1845,107–108, Council Minute Book November 1841-March 1853, RGS; 23 June 1845, 109, Council Minute Book November 1841-March 1853, RGS. Also see Barrow's letter to the RGS 12 June 1845, RGS/CB3/52, RGS. Further material relating to Sturt's expedition was read on 10 November 1845. See 10 November 1845, 110–112, Council Minute Book November 1841-March 1853, RGS. These further papers presumably arrived in March and December 1846 and were read, reviewed and balloted. A portion of the papers were finally printed in the *JRGS*, vol. 17. This edited collection included Sturt's journal and the dispatches that he had sent from the field to Adelaide. See JMS/13/51, JMS/13/52, RGS; Sturt 1847. For a note explaining the composition of the article, see page 114. Compare to the processes of reading and printing in relation to Eyre's, Grey's and Gregory's accounts, for example, in the 1840s and 1850s. Grey's account was read immediately and at the next meeting it was decided that it should be printed. Eyre's account was only read after a decision had been reached. See 10 February 1845, 95–97, Council Minute Book November 1841-March 1853, RGS; 10 March 1845, 100, Council Minute Book November 1841-March 1853, RGS; 14 April 1845, 101, Council Minute Book November 1841-March 1853, RGS; 9 June 1845, 107–108, Council Minute Book November 1841-March 1853, RGS.

[560] Authoritative examples are Koivunen 2009; Withers and Keighren 2011; Keighren, Withers, and Bell 2015. Also see MacLaren 1992; MacLaren 2003; Pettit 2014.

simply made available, but actually went through a process of selection, editing, compilation and then dissemination. It is likely that this process had a significant effect on its meanings.[561]

A key to understanding how articles were considered for publication is to examine the referee system used by the RGS. The different material that arrived at the society—manuscripts, journals, articles, newspaper cuttings, and maps—were initially read by the secretary and, on certain occasions, by the council. Subsequently, the material that was deemed sufficiently interesting was referred to different individuals for review. The society employed a wide array of referees, but the men that were selected usually had close ties with the society. In addition, the reviewers normally had some link to the Australian continent, or other expertise on the subject of the material in question. Reviewers included former explorers, such as count Pawel Edmund Strzelecki and John Lort Stokes, as well as former governors, such as George Gawler. Reviewers deemed to possess relevant expertise, despite no direct experience from the Australian colonies, included John Barrow, the former governor of Cape Colony and the second secretary of the Admiralty, as well as the colonial administrator Henry Bartle Frere (1815–1884), the cartographer John Arrowsmith, and men of science, such as Charles Darwin (1809–1882) and the geologist George Bellas Greenough (1778–1855). All these individuals participated in the selection process that earmarked articles for publication.[562]

The reports offer insights into the principles that underpinned the selection process used by the RGS in relation to the publication of articles. The RGS sought to have a standard process for the review of articles. Hence, the referees were given a list of questions, or, alternatively, particular forms to complete in order to provide a framework for their reviews. Most of these completed reviews have been archived, alongside the texts being reviewed. However, some referee reports are stored in the RGS archives without the text under review. The principal questions the council wished the referees to consider concerned the originality of the material, as well as how it could be used in the preparation of an article. The council also wanted to know whether the text would benefit from being

[561] Compare with Clare Pettit's argument regarding the significance of how the form of travel writing texts might have "altered and affected its meanings for different readership groups". See Pettit 2014, 88.
[562] See, for example, the referee reports of the following manuscripts: Report by Darwin, JMS/13/33, RGS; Report by Barrow, JMS/13/38, RGS; Report by Frere, JMS/13/51, RGS; Report by Frere, JMS/13/52, RGS; Report by Greenough JMS/13/53, RGS; Report by Stokes, JMS/13/73, RGS; Report by Stokes, JMS/13/76, RGS; Report by Arrowsmith, JMS/13/88, RGS; Report by Strzelecki, JMS/13/98, RGS; Report by Gawler, JMS/13/104, RGS. Information about the referees used is available also in the Council Minute Books, see, for example, 25 May 1835, 154, Council Minute Book, October 1830-July 1841, RGS; Council Minute Book November 1841-March 1853, RGS; 26 April 1858, 280, Council Minute Book April 1853-January 1859, RGS, IBG; 9 May 1859, 27, Council Minute Book January 1859-February 1867, RGS; 12 March 1860, 76, Council Minute Book January 1859-February 1867, RGS; 14 January 1861, 119, Council Minute Book January 1859-February 1867, RGS.

accompanied by visual images.[563] The review process seems to have functioned in a more informal manner until the 1840s, when it became far more structured.[564]

The editing and publication procedures for each article varied, depending on the material that had been received. On several occasions, articles that dealt with Australian exploration and geography were based on manuscripts received from explorers themselves.[565] However, on multiple occasions they consisted of a combination of different textual sources. As mentioned, the material received from the Colonial Office was usually diverse: extracts from dispatches, tracings, maps, tables, newspaper cuttings, expedition reports and sometimes even whole journals.[566] When the secretary of the RGS, who was also the editor of the journal, combined information from this varied material into one article, he had to select what he deemed to be the most important information and had to ensure that it was communicated in a readable form.[567] Consequently, the editor synthesized the information into a new form. He transformed what could be an abundance of snippets of data into an article that communicated an account about the research that had taken place.

In the case of the articles that were assembled using only a portion of the available material, one can examine whose accounts and interpretations was published. When leafing through the *Journal* or the *Proceedings* of the period, one thing soon becomes crystal clear: the different texts that were published by the society were often composed by the civil servants working in the colonies, dependencies and dominions. This highlights the role of civil servants as important knowledge repositories and communicators. The RGS often used governor dispatches when compiling articles. They could form the basis of an article, or they could be combined with a longer travel account or report. For instance, when considering Thomas Burr's manuscript journal for publication, John Barrow, who acted as the referee on the occasion, thought that governor Grey's letter could be used as it was, in conjunction with some particulars being taken from Burr's journal in order to elucidate the letter.[568] The dispatch and the journal described an expedition led by Grey in the southeast coastal region of South Australia in April 1844. The twenty-five-page article was published in the *Journal* in 1845 and it consisted of Grey's dispatch and extracts from Burr's

[563] See the referee reports with the following manuscripts: Report by Arrowsmith, JMS/13/65, RGS; Report by Murchison, JMS/13/66, RGS; Report by Arrowsmith, JMS/13/84, RGS.
[564] In 1846, the council made a decision to forward printed instructions for the referees with every article. See 18 May 1846, 134, Council Minute Book, RGS.
[565] For examples of these see, JMS/13/6, RGS; JMS/13/11, RGS; JMS/13/20, RGS; JMS/13/30, RGS; JMS/13/46, RGS; JMS/13/56, RGS; JMS/13/62, RGS.
[566] See, for example, JMS/13/3, RGS; JMS/13/34; JMS/13/36, RGS; JMS/13/38, RGS; JMS/13/40, RGS; JMS/13/43, RGS; JMS/13/44, RGS; JMS13/51, RGS; JMS/13/52, RGS; JMS/13/76, RGS.
[567] The *Journal* was edited by different individuals during the decades examined in the present work. Editing was the job of one person, except for a short period between 1841 and 1843, when two people were assigned this task. See "At the annual meeting, May 24, 1841" *JRGS* 1841, vol. 11, v; "Report of the Council", *JRGS,* 1844, vol. 14, v.
[568] JMS/13/40, RGS.

journal.[569] The article was illustrated with a map depicting the route that was illustrated with landscape views and plans of mountains.[570]

Similarly, the printed articles were often based on official reports that the explorers and surveyors had send to the administrators in the colonial settlements and vice versa.[571] In the *Proceedings*, dispatches and short letters written by the surveyors were often published as separate pieces. The style of printing varied from direct quotations and extracts from the dispatches to rephrasing and summarizing the content.[572] A particular instance is the work undertaken by African explorer and geographer Francis Galton (1822-1911) in 1858. Upon receiving multiple communications from South Australia, Galton was asked to summarize the extensive amount of information resulting from the expeditions by Herschel Babbage, surveyor-general Arthur Freeling and Stephen Hack, who had journeyed through the northern areas of the colony. The eight-page abstract that was printed in the *Proceedings* was a compilation of Galton's own phrases and quotations from the *South Australian Register.* This abstract summarized the previous expeditions that had taken place in 1856, as well as portions of recent reports that had been received.[573] The discussions that occurred at the Colonial Office in December 1857 and February 1858 resulted in a decision to

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569 Grey & Burr, *JRGS,* 1845, vol. 15, 160-184. Traces of the editing process are visible in the manuscript material. See Copy of Journal of Burr, JMS/13/40, RGS. For other examples of printing dispatches in the *Journal* see, Grey, *JRGS*, 1845, vol. 15, 365-367; Sturt, *JRGS*, 1847, vol. 17, 85-129; Dalrymple, *JRGS*, 1863, vol. 33, 3-5; Barkly, *JRGS,* 1863, vol. 33, 150-151.

570 "S. E. Extremity of South Australia to illustrate Governor G. Grey's Expedition 1844", *JRGS,* 1845, vol. 15.

571 See, for example, Mitchell, *JRGS*, 1836, vol. 6, 433-439; Orr, *JRGS,* 1841, vol. 11, 192-195; Gregory & Madden, *JRGS,* 1852, vol. 22, 57-71.

572 Compare the pieces printed with the original documents received from the colonies. See, for example, Dalrymple, *PRGS*, 1860, vol. 5, no. 1, 4-7, compare to Bowen to Newcastle 12 April 1859 no. 34, ff. 411-416, CO 234/1, TNA; McDonnell & Warburton, *PRGS*, vol. 5, no. 3, 1860, pp. 124-127, compare to MacDonnell to Newcastle 10 January 1860 no. 360, ff. 3-7, CO 13/102, TNA; "The Governor-In-Chief's Northern Trip" in MacDonnell to Newcastle 10 January 1860 no. 360, ff. 8-11, CO 13/102, TNA; MacDonnell to Newcastle 26 December 1860 no. 470, ff. 433-434, CO 13/103, TNA; Barkly, *PRGS*, 1861, vol. 6, no. 2, 68-71, compare to Barkly to Newcastle 20 November 1861 no. 92, ff. 164-167, CO 309/57, TNA; Bowen, *PRGS*, 1862, vol. 7, no. 1, 3-5, compare to Bowen to Newcastle 15 March 1862 no. 12, ff. 94-103, CO 234/6, TNA; Bowen, *PRGS*, 1862, vol. 7, no. 1, 5-6, compare to Bowen to Newcastle 12 April 1862 no. 17, ff. 133-137, CO 234/6, TNA and Enclosure no 2 in Bowen to Newcastle 12 April 1862 no. 17, ff. 138-141, CO 234/6, TNA; Barkly, *PRGS*, 1862, vol. 7, no. 1, 6-8, compare to Barkly to Newcastle 23 April 1862 no. 45, ff. 430-431, CO 309/59, TNA; Bowen, *PRGS*, 1862, vol. 7, no. 1, 8-18, compare to Bowen to Newcastle 8 July 1862 no 33, ff. 296-305, CO 234/6, TNA; Bowen, *PRGS*, 1862, vol. 7, no. 3, 110-111, compare to Bowen to Newcastle 8 January 1863 no. 2, ff. 4-5, CO 234/8, TNA.

573 F. G. (Galton), *PRGS*, 1857, vol. 2, no. 3, 185-193. The portion deriving from the newspaper is clearly distinguished by date. Compare page 186 of the article and "Water in the North", *South Australian Register*, 7 November 1856, 2.

furnish the RGS with a portion of the material. A tracing and a dispatch were omitted, as they contained criticism of Freeling.[574]

As condensed accounts and summaries of the explorations, the dispatches were a useful resource in terms of the composition of articles and for communicating the latest developments in Australia to the public. In contrast to the reports and journals of the explorers, which could easily span hundreds of pages, the dispatches or their extracts were usually compact presentations. This was noted by the referees used to evaluate if the material received by the RGS should be printed in the journal.[575] To ensure the effective communication of substantive matter the society preferred shorter accounts in its publications. The preferred length of the journal as a whole was also a question of finance.[576] Printing dispatches in the *Proceedings* was deemed an appropriate forum, as they suited the general idea of printing shorter pieces and notices more frequently.

The style of the articles composed from this type of material is different than those penned by explorers that were deliberately aimed for inclusion in the journal. The publication of official dispatches, especially when printed without any forewords or rephrasing, represented minimal editorial work by the society. This contrasts to the editorial work often involved when editing the explorers' papers for the *Journal*, or in general the editing of travel accounts. Innes Keighren and Charles Withers have brought to the fore how the alterations that the secretaries/editors made to the manuscripts could cause discomfort in the explorers as the papers were published as the contents were altered by translating names for example.[577]

Furthermore, publishing dispatches and reports—either in their entirety or partially—can be understood as a way of enforcing and exhibiting government connections to the public. In a similar manner as printing the original accounts from expeditions, they served as testimonies to the authenticity and novelty of the information that had been printed. These points accord with the characterization made by Felix Driver about the role of society as a place of information exchange, rather than as a "centre of calculation" that controlled and coordinated the production of geographical data. The control the RGS was able to exert

[574] See the minute by Gairdner 11 December 1857 in MacDonnell to Labouchere 6 October 1857 no. 184, ff. 5-6, CO 13/96, TNA; Minute by Merivale 17 December 1857 in MacDonnell to Labouchere 6 October 1857 no. 184, f. 6, CO 13/96, TNA; Draft to the RGS 8 January 1858 in MacDonnell to Labouchere 6 October 1857 no. 184, f. 7, CO 13/96, TNA; Minute by Gairdner 10 February 1858 in MacDonnell to Labouchere 30 November 1857 no. 203, ff. 286-287, CO 13/96, TNA; Minute by Elliot 11 February 1858 in MacDonnell to Labouchere 30 November 1857 no. 203, f. 287, CO 13/96, TNA; Draft to the Secretary of the RGS 25 February 1858 in MacDonnell to Labouchere 30 November 1857 no. 203, ff. 288-289, CO 13/96, TNA.

[575] See, for example, the referee reports in JMS/13/40, RGS; JMS/13/51; JMS/13/98, RGS.

[576] The length of the volumes of the *Journal* varied from 200 to 600 pages. In 1847–1849 the *Journal* was published in its shortest form as a 200-page periodical with a minimized amount of illustrations due to the need to cut down printing expenses. "Report of the Council", *JRGS*, 1846, vol. 16, v-ix; "Report of the Council", *JRGS,* 1847, vol. 17, v-x; "Report of the Council", *JRGS,* 1848, vol. 18, v-vii; "Report of the Council", *JRGS,* 1849, vol. 19, vi.

[577] Withers and Keighren 2011, 565.

on the production of geographical data was not as extensive as the society sought to represent. The different papers that were read, reviewed and published highlight the heterogeneous character of geographical knowledge that was collected, discussed and pursued at the RGS,[578] but which also characterized nineteenth-century geography in general.[579]

These points are further strengthened if considered in relation to the criteria employed by the RGS when selecting articles to be printed. In general, it is clear that the society wanted to publish new information and thereby contribute in an original manner to geographical discussions that were taking place. What was considered new, however, depended on the situation. As noted in the previous chapter, most of the information received from the field by governors, other patrons and family members of expedition members was published in local newspapers. These articles were utilized by the RGS, but only in cases when nothing else was ready to be published, if the matter was particularly pressing for one reason or another or if the use of the article was simply convenient as in Galton's abstract discussed above. In the 1840s, for example, the society printed an article about the explorations of Ludwig Leichardt, a German scientist who succeeded in conducting explorations in New South Wales until he vanished without trace in the Outback with his party in 1848. The only information the RGS received about the proceedings of an expedition he had conducted in 1845 in order to try and find an overland route to Port Essington were in the form of newspaper articles. Yet, in spite of the fact that this information had already been published in Australia, the council decided to print the data in its *Journal*.[580] This represented an extraordinary way to proceed, as the council did not usually decide to print papers that had been published elsewhere. Indeed, in 1841 the council concurred with the recommendation of a referee that a noteworthy article by Paul E. Strzelecki should not be printed in the *Journal* as it had been published elsewhere.[581] Thus, the case of Leichardt entailed special measures and indeed the council decided to attach an editorial note in order to explain the matter.[582]

The RGS adopted a discrete policy towards the publication of papers it received. At times the Colonial Office was consulted in order to ensure that the papers could be disseminated in a fitting manner and could be read at the society's meetings. In January 1845, for example, papers and letters relating to the planning of the Central Australian Expedition,

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578 Driver 2001, 36–37.
579 Livingstone 1992, 155-174.
580 9 November 1846, 145, Council Minute Book November 1841-March 1853, RGS. For the published account, see Leichardt, *JRGS,* 1846, vol. 16, 212–238.
581 26 April 1841, 304, Council Minute Book October 1830-July 1841, 304, RGS. For a similar decision see e. g. 13, Council Minute Book October 1830-July 1841, RGS.
582 9 November 1846, 145, Council Minute Book November 1841-March 1853, RGS. For the editorial, see Leichardt, *JRGS*, 1846, vol. 16, 212.

including Sturt's proposals and the instructions that were given to him, as well as memoranda by Barrow and Stanley, were transmitted to the society.[583] The officers of the Colonial Office continuously transmitted papers of interest to the RGS and the society subsequently prepared some of them for publication without special instructions. However, in the case of these papers, colonel Julian Jackson, the society's secretary, was uncertain as to whether the Colonial Office had reservations regarding them being made public as they had been marked "Private". He therefore specifically enquired if people outside the council could read the material.[584]

Jackson was told that there were no restrictions in place regarding the publication of the papers that were read. However, he was also informed that the publication of many of the documents would not be encouraged, as many were of a provisional nature, particularly the instructions given to Sturt.[585] One can glean from the annotations made by the civil servants that it was deemed to be more appropriate to read the preliminary results of the expeditions at the evening meetings and to share them with other members of the society, rather than to publish them more widely.[586]

At times the papers the RGS received were presumably revised in order to be published in the *Journal*. When the final drafts of articles were finished, they were then sent to the officers at the Colonial Office for their approval. For instance, when the secretary of the RGS, captain Washington, edited and compiled an account about the expedition led by George Grey and Lushington between 1837 and 1838 on the north-western coast of Australia, he sent the article to Gordon Gairdner for his opinion on the piece. Gairdner, who had supplied extracts to the RGS from the few documents and reports that had arrived in London in the fall of 1838, suggested that the "papers might serve as the material for you to give a notice if you 'judged' it good, of the proceedings of the Expedition".[587] After reading the article, Gairdner responded that he was satisfied with it as it placed "the operations of the Expeditions in the most favorable point of view". In addition, he pointed out that the article also afforded "the generous countenance of the Society to an expedition formed

[583] See the materials in JMS/13/43, RGS. Also see draft to Jackson 24 January 1845 in Grey to Stanley 10 August 1845 no. 90, ff. 339-340, CO 13/38, TNA.
[584] Jackson to Hope 25 January 1845, f. 313, CO 13/46, TNA; Jackson to Hope 28 January 1845, f. 315, CO 13/46, TNA.
[585] To the Secretary of the RGS 6 February 1845 CB3/169, RGS.
[586] See the annotations in Jackson to Hope 25 January 1845, f. 313, CO 13/46, TNA. Also see the draft letter to Jackson 6 February 1845 in Jackson to Hope 28 January 1845, f. 316, CO 13/46, TNA. Asking for permission to publish the information received from the department was somewhat common. For example, the director of Kew Gardens, William Hooker, sought permission from the officers in order to publish general information about the botanical specimens transmitted to Britain from the North Australian Expedition. Furthermore, explorers who had led a government-funded expedition made similar enquiries to the Secretary of State in regard to the publication of their accounts. See Hooker to Ball 12 January 1856, f. 206, CO 201/496, TNA; Grey to Russell 9 December 1840, ff. 272-273, CO 201/304, TNA.
[587] Gairdner to Washington 18 September 1838. CB2/209, RGS.

independently of it".[588] The RGS had been initially involved in the planning of the expedition, but eventually the government had taken over the project.[589]

On a more detailed level, Gairdner made a few remarks about the layout of the text. He noted, for example, that the title of the text should contain "the word 'principally' or some such qualification in the heading between 'extracts' and 'from documents' to demonstrate that portions of the text derived from other documents than the ones the Society had received from the Colonial Office".[590] Gairdner's precision in identifying the sources of the article derived from the fact that the RGS had, in fact, received letters directly from Grey and Lushington (dated 3 and 30 June) reporting the failed results of the expedition: the expedition party failed to proceed as planned and was rescued on two separate occasions, mainly due to Grey's incompetence.[591] Washington had already prepared an article that outlined the information contained, which was published in *The Times*.[592] Thus, in constructing the article for the *Journal*, he merged data gained from different sources.

This example displays how the identification of the sources of the material that was printed was important. The origins of the information that was printed was explicitly stated in the articles: the material derived from the Colonial Office was clearly identified on the front page of the article.[593] This added to the authenticity and official nature of the information that was printed, in a manner as with the publication of dispatches.

The RGS was very eager to receive all maps of newly-explored areas. The society usually made copies of the maps they received in order that they could be consulted at a later date by members and visitors to the society.[594] Cartographic images formed an important part of the articles that were published. Maps played an essential role in helping readers to comprehend the accounts of new territory presented in the society's publications. Maps depicting newly-discovered territory were typically accompanied with textual descriptions. This was especially the case when the map focused on illustrating the routes taken by explorers. The text provided accurate and detailed information about the observations the explorers had made. Indeed, they functioned as a tool to comprehend the account of the expedition. The narrative character of the maps was pivotal in making the account comprehendible, as they provided a spatial dimension to the exploration accounts. As Daniel Foliard notes in reference to Victorian reading of travelogues, generally "maps resonated

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[588] Gairdner to Washington 5 November 1838. CB2/209, RGS.
[589] Cameron 1995, 12, 15–19, 24–28.
[590] Gairdner to Washington 5 November 1838. CB2/209, RGS.
[591] See Cameron 1995, 32. For the preparations and execution of the expedition, see Cameron's informative account, Cameron 1995, 13–32.
[592] Failure Of The Expedition Of Discovery To The North-West Coast Of Australia, *The Times,* 22 September 1838.
[593] See the information on the front pages in, for example, the following articles: Wedge, *JRGS*, 1836, vol. 6, 419; Kennedy, *JRGS*, 1849, vol. 19, 193; Roe, *JRGS*, 1852, vol. 22, 1; Randell, *JRGS*, 1861, vol. 31, 145.
[594] This is documented in the correspondence with the Colonial Office. See, for example, Jackson to Hope 2 September 1843, f. 361, CO 13/35, TNA; Jackson to Stephen 24 October 1843, f. 364, CO 13/35, TNA; Jackson to Hope 11 February 1845, f. 319, CO 13/46, TNA.

with the text, not to control a territory, but to foster the reader's imagination in his immobile travel".[595]

Referees were requested to offer an opinion on the suitability of printing an accompanying map or other visual image when reviewing texts for inclusion in the *Journal*. Maps were rarely included in the *Proceedings*.[596] Referees usually had access to the tracings when writing their reviews. This gave reviewers the chance to assess whether a text was comprehendible without a map. Indeed, reading an account without a visual aid that depicted the route made the task of reviewing articles difficult and required additional consideration.[597] If the account contained new discoveries, a map was seen as being essential. If a map did not add anything the reading of an account, it was often deemed as unnecessary. In addition, on some occasions it was thought better to wait for accurate information when producing new maps. Furthermore, the use of maps was a means to animate the accounts if they proved to be very "monotonous" or "dull".[598]

The maps could be specially made for the article in question or the route of the explorer could be engraved onto an already existing plate, depending on circumstances. For example, Frere suggested that Sturt's route could be added to the map depicting Thomas Mitchell's routes, when he reviewed the material relating to the former's expedition into central Australia. This would not only be less expensive, but also had "the additional advantage of giving a more general view of the bearings of Capt. Sturt's explorations upon preceding discoveries".[599] However, on this occasion a new map was eventually prepared for the article, based on the maps drawn by Sturt and communicated to London with the dispatches. The map was prepared by engraver and geographer William Hughes (1818–1876), who the RGS at times employed to engrave plates.[600]

The preparation of specific maps for articles was usually entrusted to John Arrowsmith. A similar delegation of responsibility usually took place as when civil servants oversaw the publication of the parliamentary papers. On most occasions, Arrowsmith urged the RGS to use copper engravings for printing, instead of lithography. The society officially adopted this policy in 1836.[601] The minutes of council meetings in 1843 document that Arrowsmith was entrusted with the majority of map plates owned by the society. As the years passed

[595] Foliard 2017, 27.
[596] Verner 1971a, 30.
[597] Referee report by Back, 2 February 1849, JMS/13/56, RGS. See also referee report by Murchison, JMS/13/121, RGS.
[598] See, for example, the following referee reports: Barrow 27 February 1845, JMS/13/38; Frere, n. d., JMS/13/51, RGS; Arrowsmith 26 April 1852, JMS/13/58, RGS; Arrowsmith n.d., JMS/13/65, RGS; Murchison 17 March 1857, JMS/13/66; Stokes December 1856, JMS/13/76, RGS; Arrowsmith JMS/13/84, RGS; Murchison n.d., JMS/13/92, RGS; Strzelecki 8 April 1859 JMS/13/98, RGS; Gawler 5 August 1861, JMS/13/108, RGS; Gawler 8 March 1861, JMS/13/110, RGS; Arrowsmith 16 June 1862, JMS/13/115, RGS; Murchison, JMS/13/121, RGS; Strzelecki 25 February 1862, JMS/13/124, RGS; Arrowsmith 14 April 1862, JMS/13/124, RGS.
[599] Referee report by Frere, s. d., JMS/13/51, RGS.
[600] "Map of the Country Explored by the Central Australian Expedition under the Command of Captain Charles Sturt during the Years 1844, 45 & 46." *JRGS*, 1847, vol. 17. For Hughes, see Vaughan 1985, 47–53.
[601] Verner 1971a; Lines 1992, 15; Baigent 2004b.

he produced a total of 181 plates for RGS publications, thereby warranting the title of unofficial mapmaker to the society. Twenty-seven of these plates were devoted to Australia and New Zealand. In the late 1850s, Edward Weller began to take responsibility for the work, producing a total of 109 plates for the *Journal* between 1857 and 1872 and shaping the outlook of most of the maps the RGS published until the 1880s.[602] The publications include sporadic contributions from other mapmakers, in addition to the works of Hughes, Arrowsmith and Weller.[603]

I will now discuss the maps Arrowsmith produced to accompany articles relating to the geography of the Australian continent. In general, it is difficult to document how Arrowsmith, or the cartographers in general actually proceeded with their work, due to the fragmented nature of the material. With the current information that I have at my use I do not extensively know, for example, how long it took Arrowsmith to make the maps or what sort of negotiations occurred between the explorers, the council and the cartographer. Some hints about these processes exist, however: Arrowsmith's efforts in preparing the maps were, for example, noted in the *Journal* in 1838.[604] Almost simultaneously, surveyor-general Thomas Mitchell, however, appears to have been at pains when working with Arrowsmith. In a letter to captain Washington, the secretary of the RGS, Mitchell complained that due to Arrowsmith's slowness he (Mitchell) was "compelled to bring a hastily engraved map before the public".[605]

The maps that were eventually printed testify that Arrowsmith sometimes simply updated the existing maps: this was the case, for example, with the maps that accompanied articles regarding Ludwig Leichardt's expedition and a printed dispatch by George Grey on the dialects of the indigenous peoples were prepared from the same plate. Arrowsmith had just updated the Leichardt's route on the latter.[606] Arrowsmith also appears to have used a plate prepared for the parliamentary papers for the *Journal*: this occurred when the RGS printed an article relating to the North Australian Expedition. The map printed with the

[602] See 9 January 1843, 36, Council Minute Book Nov 1841-March 1853, RGS; Verner 1971a. Nothing is known about the relationship between Arrowsmith and Weller. Verner suspects that Arrowsmith was influential in choosing Weller as his successor. See Verner 1971a, 6–7; Offen 2011, 140.

[603] These include Stanford's Geographical Establishment (13 plates), Alexander Findlay (12 plates), Augustus C. Petermann (10 plates,), J. C. Walker (24 plates), J. Gardner (2 plates), Johnston's Geographical Establishment (3 plates), J. W. Lowry (1 plate), Trelawny Saunders (1 plate) that were used in the publications in 1831-1875. See Verner 1971a.

[604] See for example *JRGS,* 1838, vol. 8, iv.

[605] Mitchell to Washington 9 June 1838, CB2/359, RGS.

[606] Compare the following maps printed in the *Journal*: "Sketch-map to illustrate Dr. Leichardt's route from Moreton Bay to Port Essington. 1846", *JRGS*, 1846, vol. 16 and "Map Shewing the Range of the Southern Dialects of Australia" *JRGS,* 1845, vol. 15.

article is almost identical to the one printed with the parliamentary papers discussed before.[607] This contrasts with the map printed in the papers of Burke and Wills. This map was printed in the *Journal* and is from an engraved plate, whilst the map in the parliamentary papers is a lithographed copy based on the map received from overseas.[608]

Verner suspects that Arrowsmith probably used some of his plates to illustrate the travel accounts he worked with, but this has not been established systematically.[609] It appears more likely in the case of the explorers from other parts of the world, than Australia. Arrowsmith prepared maps to illustrate the accounts of George Grey, Charles Sturt and Ludwig Leichardt, but all of these maps were specially made for the publications. The maps that accompanied the articles were either prepared by someone else, or by Arrowsmith using a different plate to illustrate the route of the expedition. As noted above, the map accompanying Sturt's account in the *Journal* was by Hughes and Leichardt and included a small-scale map of the continent.[610] The map illustrating the article about Grey's and Lushington's expedition was prepared with incomplete data. Furthermore, the accounts by Thomas Mitchell and John McDouall Stuart do not include maps prepared by Arrowsmith, although the cartographer prepared maps to accompany the articles in the *Journal*.[611]

The work of the society also contains two distinguishable practices of knowledge work that represented further analysis and synthesis. In addition to preparing papers for publication, the RGS accumulated geographical information it received on diagrams depicting different parts of the world, including Australia. The Australian diagram is mentioned by the secretary of the society, Norton Shaw, in a letter to Henry Merivale in October 1856.

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607 Compare "Part of North Australia to illustrate journal of the route of Augustus C. Gregory Esqr., 1858" in *JRGS* 1858, vol. 28 to "Map of part of Australia shewing the route of the North Australian Expedition in 1855 & 1856 Under the Command of A. C. Gregory" in *Papers relating to Expedition for Exploring Northern Portion of Australia*, 1857-1858.

608 Compare "Map of the Eastern part of Australia, Showing the Route of Messrs. Burke and Wills from Melbourne to the Gulf of Carpentaria" in *Australian exploring expedition*, 1862, to "Australia. Map to Accompany the Diary of Messrs. Burke & Wills [...]", *JRGS*, 1862, vol. 32. The original tracing that arrived from Victoria appears to be missing, but is mentioned in Barkly's dispatch. "Tracing of the route pursued by Mr. Burke in Expedition to explore the interior of the Continent" in Barkly to Newcastle 20 July 1861 no. 64, f. 275, CO 309/56, TNA.

609 Verner 1971a, 7. See also Keighren, Withers and Bell who note how Arrowsmith often reused maps prepared for travel accounts in his other publications, like the atlas. More systematic analysis is needed to determine the extent of these practices. See Keighren, Withers and Bell 2015, 160–161.

610 See Arrowsmith, J. *Detailed map of Dr. Ludwig Leichhardts route* [...], 1847, MAP RM 791 (Copy 2), NLA; Arrowsmith, J. *Map of Captn. Sturt's route* [...], 1849, MAP NK 2456/157, NLA and compare with "Map of the Country Explored by the Central Australian Expedition under the command of Captain Charles Sturt during the Years 1844, 45 & 46", *JRGS*, 1847, vol. 17; "Sketch-map to illustrate Dr. Leichardt's route from Moreton Bay to Port Essington. 1846", *JRGS*, 1846, vol. 16.

611 Compare maps in Mitchell's *Three Expeditions into the Interior of Eastern Australia* (Mitchell 1839) to map "Map of the South-East Portion of Australia", *JRGS*, 1837, vol. 7. Compare "North Australia, map to complete diaries of explorations across Australia (from South to North)," *JRGS*, 1863, vol. 33; "Australia. Map to Illustrate Diaries of Exploration of Central Australia, by John McDouall Stuart", *JRGS*, 1861, vol. 31 with maps illustrating Stuart's expeditions in Stuart 1863 and Hardman 1865.

Shaw wrote to Merivale in order to ask whether the RGS could borrow the sketch mentioned in the report by Augustus Gregory. He explained that it was needed so that the information "may be at once inserted on the Society's diagram of Australia, for the information of the Members, and of Visitors to the Map Room".[612] Shaw's request exhibits a practice through which the RGS sought to make geographical knowledge accessible. The 1850s was a time of growing interest in the work of the society, due to the increased public curiosity in exploration (especially in Africa). This trend was noticeable at the RGS in terms of daily visitors by members and guests to the map room and the library in order to consult the growing collection. A separate map room had been opened in 1854 when the society moved to 15 Whitehall Place.[613]

The practice of synthesizing the pieces of information into a single illustration of the continent marks an important effort to put the data into perspective. However, not much is known about these diagrams, which have since been lost. They only appear, for example, in the council minutes on a few occasions. Nevertheless, it can be gleaned from the minutes of a council meeting in 1862, after much new data had been received from the Australian colonies as a result of the explorations of Burke, Willis, Stuart, Warburton and others, that the council directed the society's curator of maps, captain C. George, to prepare a new diagram of Australia.[614] This new diagram appears to have been revealed as a large map to the participants of an evening meeting in November 1862, "which, while enabling the names of the principal rivers and towns to be seen from all parts of the room, would in some sort be worthy of the remarkable explorations which were taking place throughout that immense portion of our possessions".[615] Furthermore, different individuals borrowed the diagrams depicting Africa, China and the entire planet to be used as illustrations during their public lectures.[616]

The second practice of synthesis occurred at the annual meetings that were held in May every year. Here the president of the RGS in his speech summarized the progress in geographical research in different parts of the globe and synthesized the developments and results that had taken place. These addresses had been printed in the *Journal* since 1838 and were also published in the *Proceedings* when it was established. After 1842 the

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[612] Shaw to Merivale 29 October 1856, f. 319, CO 201/496, TNA.

[613] 24 January 1848, 181-182, Council Minute Book November 1841-March 1853, RGS. See also Crone and Day 1960, 12; Driver 2001, 43.

[614] 24 February 1862, 203, Council Minute Book January 1859–February 1867, RGS.

[615] "First Meeting, Monday, November 10th, 1862." *PRGS*, 1862, vol. 7, no. 1, 2.

[616] For example Captain Washington from the Admiralty among others borrowed the diagrams for his lectures. See 11 April 1859, 24, Council Minute Book January 1859-February 1867, RGS; 12 March 1860, 77, Council Minute Book January 1859-February 1867, RGS. For other instances, see 14 May 1860, 91, Council Minute Book January 1859-February 1867, RGS; 25 February 1861, 131, Council Minute Book January 1859-February 1867, RGS.

presidents discussed Australian exploration in almost every address.[617] In these addresses, the presidents evaluated the explorers' accomplishments and summarized the significance of the information gathered on a particular occasion. The presidents, for example, discussed the credibility of the deductions that had been made and what should be done next.[618] The presidents, many of whom had a naval or army background, thought strategically. As Norman Etherington states, in their addresses they expressed an "optimistic faith in Victorian narratives of progress", which was able to foster the relationship between geographical expansion and commercial opportunities across the globe.[619]

The society's choices vis-à-vis what was to be printed and in what manner mattered for the image of the colonies in the eyes of potential settlers. Consequently, this was also a vital issue to the colonization committees. An interesting example to illustrate how the published depictions of geographical knowledge affected perceptions of the colony comes from the early years of the society in 1830s, when plans were being made to establish a new colony on the southern coast of the continent. As already mentioned, one of the first communications of the Colonial Office regarding the publication of information about the southern continent occurred in 1832, when Robert Hay wrote to the society and enclosed a text and a map by explorer Allan Cunningham describing the current situation of the Australian colonies.[620]

The council decided that the paper should be printed and preparations were duly commenced. However, at this time the secretary of the society received a letter from the South Australian Company expressing concerns about the content of the paper. In their view, Cunningham's paper gave a far worse depiction of the possibilities and resources of the south coast than they had gathered from the same manuscript documents at the Colonial Department. Consequently, the council decided to ask Cunningham if he was willing to alter the article in line with the concerns of the South Australian Company. Cunningham replied that alterations were unnecessary. Instead, as has been documented in the council minute book, he informed the council that he had had multiple conservations with Charles Sturt and thought that the representation he gave in his article was correct. Consequently, the

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617 Hamilton, *JRGS,* 1842, vol. 12, lxxviii–lxxx; Murchison, *JRGS,* 1844, vol. 14, xcvii–ciii; Murchison, *JRGS,* 1845, vol. 15, lviii–lxii; Colchester, *JRGS,* 1846, vol. 16 lxxvi–lxxx; Colchester, *JRGS,* 1847, vol. 17, xxxiii–xxxv; Hamilton, *JRGS,* 1848, vol. 18, lx–lxii; Hamilton, *JRGS,* 1849, vol. 19, lxxiii–lxxv; Smyth, *JRGS,* 1851, vol. 21, lxxxii; Murchison, *JRGS,* 1852, vol. 32, lxxxii–lxxxv; Murchison, *JRGS,* 1853, vol. 23, cxxiv–cxxx; Earl of Ellesmere, *JRGS,* 1854, vol. 24, civ–cv; Earl of Ellesmere, *JRGS,* 1855, vol. 25, xcvi–xcix, cxxxi; Beechey, *JRGS,* 1856, vol. 26, ccxxvi–ccxxvii; Murchison, *JRGS,* 1857, vol. 27, clxxii–clxxx; Murchison, *JRGS,* 1858, vol. 28, cxcv–cc; Murchison *JRGS,* 1859, vol. 29, ccxi–ccxxi; Earl de Grey and Ripon, *JRGS,* 1860, vol. 30, clxxvi–clxxix; Murchison, *JRGS,* 1861, vol. 31, clxxiii–clxxvii; Ashburton, *JRGS,* 1862, vol. 32, cxlvii–clv; Murchison, *JRGS,* 1863, vol. 33, clix–clxx;

618 See, for example, Murchison, *JRGS,* 1845, vol. 15, l-li; Colchester, *JRGS,* 1846, vol. 16, xliii, lxxx; Hamilton, *JRGS,* 1848, vol. 18, lxi; Hamilton, *JRGS,* 1849, vol. 19, lxxiii-lxxv; Earl of Ellesmere, *JRGS,* 1854, vol. 24, civ-cv; Murchison, *JRGS,* 1858, vol. 28, cxcv-cxcvii; Murchison, *JRGS,* 1859, vol. 29, ccxi-ccxv; Murchison, *JRGS,* 1861, vol. 31, clxxiv, clxxvi-clxxvii; Ashburton, *JRGS,* 1862, vol. 32, clii-clv; Murchison, *JRGS,* 1863, vol. 33, clxiii-clxix.

619 Etherington 2011, 236-37.

620 4 February 1832, 49, Council Minute Book October 1830-July 1841, RGS.

council decided that the paper should not be altered. However, it was decided that something could be done regarding the map, which the South Australian Company believed contained "insidious" observations. The council concluded that as these observations did not appear to rest on any particular authority, Hay could be consulted on the matter, and, if he did not object, they could be erased from the map.[621]

A copy of the map commented on by the South Australian Company has been archived in the papers of the Colonial Department in a volume consisting of material relating to the South Australian Association. The map is a rare example of a printed cartographical illustration in the collections of the Colonial Office that contains manuscript markings. The markings—probably by Hay—make visible what the South Australian Company wished to be removed from the map. Red marks denote the possible eastern and western limits of good land in the immediate vicinity of Port Phillip Bay.[622] Consequently, some of the observations on this version were deleted and they do not appear in the version published with Cunningham's article in the second volume of the *Journal.* Nor are they present in the later reproductions of the map, including the parliamentary papers printed for the 1837 session on the question of transporting convicts to the Australian colonies.[623]

The case of Cunningham's paper, the accompanying map and the discussion surrounding it are of special importance for many reasons. First, they demonstrate the straightforward manner in which some actors sought to influence the content of the articles in *JRGS* if they noticed information that conflicted with their interests (and the information they had formed). Secondly, it demonstrates how the deletion of observations that were inserted on the original version of a map, in the form of textual descriptions, altered the informational content of the illustration significantly. Consequently, the limits of "good land" no longer existed on the map. Thirdly, the information contained in the published texts and maps was of considerable significance in regard to the visions that could be articulated about the prospects of colonization.

The publication of Cunningham's text and Arrowsmith's map was also noted in Australian newspapers. The views expressed in the article were analyzed and used as an authority when discussing the progress of discovery.[624] A detailed analysis of the article was published, for example, in *The Sydney Monitor*, a biweekly newspaper that had been

[621] 2 June 1832, 61, Council Minute Book October 1830-July 1841, RGS.

[622] "Map of the South East Portion of Australia Shewing the Progress of Discovery in the Interior of New South Wales", f. 3, CO 13/1, TNA.

[623] See "Map of the South Eastern portion of Australia", *JRGS,* 1832, vol. 2; Map of the South East Portion of Australia [Copied from John Arrowsmith's Map 35 Essex Str. 1837] in *Report from the Select Committee on Transportation*, 1837, 748.

[624] For examples of these articles see, "The Sydney Herald", *The Sydney Herald,* 1 April 1833: 2. "Exploring and Surveying", *The Sydney Monitor,* 13 April 1833, 2; "From The Sydney Herald", *Launceston Advertiser,* 2 May 1833, 3; "English Extracts", *The Sydney Herald,* 15 August 1833, 2.

printed in New South Wales since 1826.[625] In July 1833, John Lhotsky (1795?-1866?), an explorer, naturalist and a keen commentator of contemporary affairs, wrote two reviews of the article in which he noted how Cunningham's account of the geography and features of the colony was good. In fact, the mere publication of the article was considered an important indicator of the way the accounts of the Australian traveler had been received in Britain.[626]

Lhotsky's views regarding the map were more critical. He noted, for example, that whilst "the exterior execution of the map is very good", the map was "particularly poor and scanty in the representation of the ranges of mountains". He also noted that the map did not match the accuracy of orographic detail that could be seen on other recently published maps. Furthermore, Lhotsky noted that no such deficiency existed in the manuscript map by Mitchell: "There the mountains are indeed drawn in miniature, and copied ad naturum". Consequently, even though the map that accompanied Cunningham's text was scientifically satisfactory, in Lhotsky's view "there will remain something for his successors to say" about the area.[627] Lhotsky's analysis of the map and Cunningham's article highlight one instance of how the actions of the RGS and Arrowsmith were noted in the Australian colonies, thus exemplifying the interconnected relationship between the colonies and the metropolis in terms of the formation of knowledge.

Indeed, the colonial press actively reported how the continent was discussed in Britain. Reports were written regarding how the works executed in the colonies had been presented in different places, as well as the kind of literature, especially travel accounts, and maps that had been published in London and in Europe.[628] Furthermore, the different newspapers were active in printing various types of article relating to the RGS. Notices about the events organized and the papers printed in the *Journal* were also regularly published. The extent of the news that was printed varied: from short notices about the papers read

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[625] Originally known as *The Monitor*, the newspaper changed its name many times. It was also known, for example, as *The Sydney Monitor* and *Sydney Monitor and Commercial Adviser*.

[626] "Australian Sketches; †", *The Sydney Monitor*, 17 July 1833, 4; Whitley 1967.

[627] " Australian Sketches", *The Sydney Monitor,* 20 July 1833, 4.

[628] See, for example, "The Sydney Herald. Monday 21st November 1831", *The Sydney Herald,* 21 November 1831; The Geological Society April 13, 1831, *The Sydney Herald,* 23 April 1832; "Exploring and surveying", *The Sydney Monitor,* 13 April 1833; Australian sketches, *The Sydney Monitor,* 17 July 1833; "The Journal of the Royal Geographical Society in London. Vol. 2", *The Sydney Herald,* 15 August 1833; "New work on Australia", *Launceston Advertiser,* 6 February 1834; "New work on Australia", *The Perth Gazette and Western Australian Journal,* 29 March 1834; "The Sydney Gazette, Thursday 20 October 1836", *The Sydney Gazette,* 20 October 1836; "Literature and Science. Review", *The Colonist,* 29 August 1838; "Major Mitchell's Australian Expedition", *Sydney Monitor,* 14 January 1839; Major Mitchell's Australian Expeditions, *The Australian,* 17 January 1839; "Discoveries in Australia" *Southern Australian*, 14 May 1841: "Royal Geographical Society", *Geelong Advertiser and Squatters' Advocate*, 17 December 1845; "Colonial literature", *South Australian Register,* 7 February 1846; "Review", *The Sydney Morning Herald*, 5 February 1848; "Mr. Goyder's Northern Discoveries", *The Age,* 4 June 1858.

at the evening meetings and the medals awarded to explorers, to full reprints of the articles published in the *Journal* and extracts of the presidents' speeches at the annual meetings.[629]

The role of the colonial press as an attentive watchdog was vital for the process of establishing geographical knowledge. As John Lhotsky's analysis demonstrates, the authors drew attention at times to differences in knowledge that existed in different locations. This point is highlighted in a particularly stark manner in an article printed in the *Sydney Morning Herald* in March 1845. The article focused on a piece that had recently reprinted the annual address of the president of the RGS been.[630] The commentator discussed the general practices of publishing and editing adhered to by the RGS. The author emphasized how the proceedings of the RGS rested upon information it received from the Colonial Office, as well as the work of the cartographer Arrowsmith. It can be deduced from numerous hints in the text that the author was either Thomas Mitchell, the surveyor-general of New South Wales, or someone close to him. Whatever the case, the author emphasized how the papers read at the evening meetings "are published, modified, or withheld, as the Secretary and Mr. Arrowsmith may determine". Moreover, in his view the "blank map of Australia seems to be a sort of spatchcock" to the council members of the society, resulting in discussions that displayed a complete ignorance of the nature of the country itself. He also decried the false representation of the state of the surveys on the continent in the most recent presidential address of the society.[631]

The comments above hint at a grudge towards Arrowsmith and the RGS in general. Furthermore, they demonstrate the important point about the processes of establishing geographical knowledge: they expose the "fragility of its epistemological foundations".[632] The manner in which individual observations on Australia that were sent back to Britain became represented in published works and in the public discussions in organizations, such as the RGS, relates to the more general question of the relationship between the production

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[629] As the presidential addresses analyzed the progress of geographical discovery in different parts of the world, usually only the portions discussing matters relating to Australia were printed. For examples see e. g. "Royal Geographical Society", *The Sydney Herald,* 19 March 1832, 3; "Royal Geographical Society", *South Australian Register,* 13 July 1854, 2; "Royal Geographical Society", *The Sydney Morning Herald,* 7 August 1855, 8; "The Royal Geographical Society.", *The Perth Gazette and Independent Journal of Politics and News,* 30 October 1857, 3; "Australian Exploration", *Adelaide Observer,* 22 May 1858, 6; "The Australian Desert", *The Perth Gazette and Independent Journal of Politics and News,* 10 June 1859, 4; "Australian Exploration and Animals", *The Moreton Bay Courier*, 2 July 1859, 3; "Scientific Investigations in Australia, Tasmania, and New Zealand", *The Moreton Bay Courier* 17 December 1859, 4.

[630] "Interior of Australia", *The Sydney Morning Herald*, 4 March 1845, 2. For the materials relating to the proposition see Gipps to Stanley 7 December 1845 no. 203, ff. 239-258, CO 201/336, TNA. For Murchison's address see "Address to the Royal Geographical Society of London." *JRGS*, 1844, vol. 14, xcvii-ciii.

[631] "Australian Geography", *The Sydney Morning Herald,* 8 March 1845, 2. The identity of the author can be deduced from two major points made in the article: first, the way he discusses Arrowsmith's working methods when compiling maps and the way he disliked the article by Vetch that had been printed in the *Journal.* Compare the article with Mitchell's correspondence with the society in the late 1830s. See Mitchell to Washington 8 December 1837, CB2/359, RGS; Mitchell to Washington 9 June 1838, CB2/359, RGS.

[632] Kennedy 2013, 42.

of data in the field and its compilation in offices: between "theoretical discoverers", "armchair geographers" and practical geographers and explorers – "the working bees".[633] I concur with Lawrence Dritsas and David Lambert in emphasizing that although these "groups" may seem distinct, they were actually entangled in many ways.[634] The formation of theories and the ability to make deductions was a vital part of the fieldwork, as it added to the value of observations.[635] Similarly, it was important to make generalizations about the data that had been received in order to form comprehensible conceptualizations. However, the crucial question touched on which observations should be acknowledged and in what way. Viewed in this context, the analysis in the articles demonstrates the inevitable tension between the different hubs of geographical knowledge located around the globe, as well as the implications they had for the conceptualization of Australian geography. Thus, they make explicit the significance of a place in terms of the way the credibility of the information at hand was considered. This illustrates how the "located nature of the various practices of geographical discovery" emerged as a result of the circulation of the different documents between the colonies and the metropolis.[636]

Consequently, what emerges is a thickly woven web of locations that constituted the analysis of geographical and cartographical information through various practices of knowledge work and brokering. This web surpassed dichotomies. Consequently, the circulation of knowledge to the RGS, as well as the practices affecting its publishing endeavors, its communication to the public and its circulation back to the colonies, demonstrates how the chains of communication constituted the knowledge work in different locations. This knowledge work had implications for the way individual observations were established as parts of the conceptualization of geographical knowledge.

Chapter Conclusions

The distribution of the different materials that accumulated in Britain resulted in new kinds of knowledge archives that materialized in different ways as the information deriving from explorations became shared. The work of civil servants brought into existence a series of published maps and accounts of surveys and explorations that were ensconced in the parliamentary papers and read alongside the governors' dispatches. The circulation of material to the RGS was a means to ensure the communication of the majority of the accounts of explorations and geographical knowledge to the members of the society, but also to the public.

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[633] The phrase is from the article discussed. See "Australian Geography", *The Sydney Morning Herald,* 8 March 1845, 2.
[634] Dritsas 2011; Lambert 2013, 13–14, 209–210. See also Kennedy 2013, 42–50, 60–61.
[635] Bridges 1987, 181.
[636] Dritsas 2011, 255.

My examination demonstrates how all publishing practices were heavily intertextual as the RGS printed bits from the dispatches and reports, some of which were also used in the parliamentary papers. The RGS combined them into articles and the colonial press reprinted portions of the articles printed in the *Journal.* The publishing endeavors of the RGS were a further instance of knowledge work, functioning, however, in a very similar manner as the publishing of the parliamentary papers. Material was often printed word-for-word and the dispatches—governors' summaries and their analysis of available information—were utilized in order to communicate information to the public. A further similarity is that they both travelled across the seas and were read and commented in the colonial press, often emerging with comments regarding the quality of observations expressed. The materials printed in Britain created the Australian press a way to report how the results of the expeditions, surveys and developments in Australian geography in general, were discussed in Britain.

The reuse of the maps in the parliamentary papers and in the publication of the RGS demonstrates the fluid nature of maps in a similar manner as for example Amy Prior has identified in the context of late 19th and early 20th century British mapping of Africa.[637] The fact that same maps were amended and used to illustrate multiple papers demonstrates the practices of the time: using the same map was cheaper and easier. For example, in the case of the parliamentary papers the maps functioning as references to elucidate the reading of the papers this becomes explicit.

In terms of analysis and synthesis both of the publications were similar as they rarely included generalized accounts deduced based on what had been received. The summaries that persons like Charles Sturt and Francis Galton provided the civil servants and the RGS with were not ordinary, but as such they demonstrate what putting the abundance of snippets of data into perspective actually required. Viewed as part of the consumption that the knowledge circulation provoked they illustrate how the amount and needs of different actors to understand the multiplicity of data at their use created the need for synthesis.

In spite of the similarities in the practices of publishing, the parliamentary papers and the work of the RGS were essentially different forms of communicating geographical and cartographical knowledge. The RGS worked with materials that had already been filtered by the civil servants and continued to filter them by selecting papers to be read and discussed, and finally to be published. The meetings of the RGS in particular were important events to discuss and argue about the results of the exploring expeditions that the RGS had received to put them into perspective. The preparation of the parliamentary papers contained similar instances of filtering at the desks of the civil servants at the Colonial Office, but they did not come with a similar established forum for discussion about the Australian geography as the work of the RGS did. In terms of using the materials that had been received the civil servants preferred completing their own work prior to transmitting materials to the RGS. The communication circuits of the geographical materials examined here

[637] Prior 2012.

demonstrate that when it came to publicizing geographical information, many practicalities and material factors influenced the pace and ways information could be made available to different actors.

This chapter has brought to the fore two important aspects that emerge as important in the circulation of the geographical knowledge. First, the roles of the different individuals – civil servants, referees and editors as knowledge brokers who, to quote Morgan Meyer enabled the "creation, sharing and use of knowledge".[638] Felix Driver has urged the need to pay more attention to the knowledge-brokers closer to home and my analysis in this chapter corroborates the usefulness of this view.[639] It also demonstrates that the mediation work that the civil servants, for example, undertook, was essential but it had only limited consequences for the contents of the knowledge. The same applies to the RGS. On both occasions they managed the knowledge they had received, functioned as links and on most occasions enhanced different parties' access to the knowledge in question.

Second, the processes that occurred as materials were publicized bring to the fore John Arrowsmith as a key individual. He linked together many of the material flows as he prepared maps for the RGS and the British government. The work that he undertook included facilitating the transformation of manuscript maps to print through lithography, but at its core were the many engraved plates that he produced to compile together a range of geographical information deriving from different sources. As already noted, these maps had a wide circulation. Consequently, the roles of Arrowsmith as a knowledge-worker and knowledge broker are the focus of the next chapter.

[638] Meyer 2010, 119.
[639] Driver 2013, 166.

3 CONTINGENT CARTOGRAPHIES: JOHN ARROWSMITH MAPS AUSTRALIA

In the previous chapters I examined the flows of geographical and cartographical material that the administrators in different locations encountered on a daily basis. I analyzed what they did with the material they received: how they analyzed it and how they preserved it. I also examined how the civil servants coordinated the maps and texts were to be printed and published in particular through two distinct channels and investigated the publicizing practices of the RGS. To continue my examination of the practices of knowledge work and their implications for the conceptualization of the continent, in this chapter I turn to examine the work of an individual already mentioned on multiple occasions: cartographer John Arrowsmith, one of the foremost cartographers of the time. By doing so, I investigate the roles of maps in establishing knowledge about the continent.

Maps served an important purpose in communicating information about the world to different audiences in Britain. Growing literacy in Britain in the 1820s fueled a growth in demand for maps. What is more, innovations in map production increased their availability as mapmaking "industrialized". As maps were increasingly available as autonomous materials, cartographic information gained more influence in shaping people's comprehensions of places and spaces.[640] The role of John Arrowsmith is particularly evident in the production of cartographical representations of the Australian continent. He was one of the most prolific engravers and publishers of maps of colonial Australia. In this chapter, I will examine why Arrowsmith and his firm gained a trusted position at the Colonial Office when it came to accessing and publishing the new information. I will investigate how Arrowsmith gained access to this information and how he employed it. I will also analyze how he mapped Australia in terms of the choices he made, as well as how his maps were consumed in different locations. In the last section of this chapter I take Arrowsmith's maps as a point of reference when examining the motives and ideas that influenced how the "scramble of the continent" from three separate territories in the late 1830s to five in the early 1860s occurred and to peruse the cartographic expressions that the scramble materialized in. Put together the themes addressed in this chapter contribute to scrutinizing the role of an individual as an influential knowledge-worker and draw attention to maps as

[640] Cain 1994; Foliard 2017, 71, 271.

materializations of knowledge that synthesized and "brokered" the abundance of geographical information.

"A useful and cheap ally of ours"

John Arrowsmith began working in the family map business in the 1810s, some two decades after his uncle, Aaron Arrowsmith (1750-1823), had founded the company in central London in the 1790s. Arrowsmith had received only limited education and had learned the skills of engraving and map-making while working with his uncle. In 1824 John set up a business of his own and in 1839 John bought the business from his cousins, who had been in charge of Aaron's company since 1823. In many ways, John Arrowsmith was an embodiment of metropolitan geographical and cartographical knowledge. Over the course of more than eight decades, the Arrowsmith firm produced maps in various central London locations (Red Lion Square, The Strand, Soho and South Kensington) where the map production clustered.[641] Arrowsmith shared the London-scene with the other notable cartographers and map firms of the time such as James Wyld Jr., Augustus Petermann and the Stanford's Geographical Establishment.[642]

Arrowsmith's particularly good capacity to prepare maps of Australia, as well as other parts of the world, benefitted from his ability to forge strong connections with the Colonial Office, other government departments, the RGS, and different individuals. Arrowsmith obtained information from the explorers themselves, as many hoped that Arrowsmith would engrave plates depicting the results of their expeditions.[643] Close connections with surveyors, explorers and geographers applied to other geographical contexts as well. [644] Being an active member of the RGS and serving on its council for over four decades granted Arrowsmith the possibility to examine the wealth of material that arrived at the society. Arrowsmith also secured the rights to engrave plates commissioned by the council of the

[641] Arrowsmith worked in the following addresses in London from 1823: c. 1823 - c. 1834 33 East, Red Lion Square; c. 1834 - c. 1839 35 Essex Street, Strand; c. 1839 - c. 1862 10 Soho Square; c. 1862 - c. 1873 35 Hereford Square, South Kensington. See Verner 1971b; Herbert 1989; Baigent 2004a; Baigent 2004b; Prescott 2012c. For the nineteenth-century map-making in London see, for example, Foliard 2017, 70-72.

[642] These cartographers will be discussed further below. For Petermann see Linke, Hoffman, and Hellen 1986. For Stanford's Geographical Establishment see Herbert 2004. For James Wylde Jr. See Baigent 2004d.

[643] An example of this has been documented in the colonial newspapers. See, for example, "Meteorology" *The Sydney Morning Herald*, 31 March 1847, 2. Also Thomas Mitchell mentions giving his data for Arrowsmith to use. See Mitchell to Washington 9 June 1838, CB2/359, RGS.

[644] In terms of African exploration and geography, for example, Arrowsmith collaborated with James MacQueen and the missionary and explorer David Livingstone. See Baigent 2004b; Lambert 2013, 209. A systematic investigation of Arrowsmith's networks awaits research. Their general character was summarized by Arrowsmith himself in the preface to his atlas. See, for example, the preface in Arrowsmith, J. *The London Atlas of Universal Geography*, 1835, MAPS 41.f.7, BL.

RGS, thereby also gaining access to a valuable supply of information that he could use on other maps.[645]

Arrowsmith specialized in maps of the British colonies, namely the Australian colonies, the Cape Colony and Canada. His interests in mapping the colonial possessions was constituted by a gap in the map-market as no other map-maker was systematically mapping these areas.[646] Arrowsmith's maps of Australia were soon regarded as being authoritative; they represented the principal depictions of Australia that were referred to when discussing the geography of the continent. Arrowsmith's personal interests in the cartographies of the Australian colonies are evident also from the way he corresponded with some of the governors.[647] Consequently, Arrowsmith's work premises functioned as an important hub for processing information received from the colonies and for producing geographical representations of these newly-explored realms.

Arrowsmith's maps of the Australian continent and the colonies were widely circulated, as the firm sold copies as both individual sheets and as part of his *London Atlas of Universal Geography.* The atlas, the first edition of which appeared in 1834, spanned the globe and contained fifty plates that exhibited "the physical & political divisions of the various countries of the world". Arrowsmith himself articulated having "compared and critically examined more than ten thousand sheets of printed maps, charts, plans" for the atlas as well as consulted numerous manuscript surveys, travelers accounts and geographical descriptions.[648] As such, the atlas has even been characterized as an imperial archive.[649] In addition to the atlas maps, Arrowsmith's other work was extensive. As already noted he produced maps of different parts of the world for the parliamentary papers, the RGS, travel accounts and geography books as well as preparing maps for the use of various government departments and for many other publications.[650] Consequently, an examination of Arrowsmith's maps, in terms of their preparation, circulation and the information they contain, offers important insights into colonial cartography.

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[645] Some of these purchases, loans and amounts of the RGS's plates in the possession of Arrowmsith are documented in the Council Minute Books of the RGS. In 1843, for example, the secretary of the society stated that Arrowsmith was in possession of 53 of the RGS's plates. See 9 January 1843, 36, Council Minute Book November 1841-March 1853, RGS. See also, 25 May 1833, 84–85, Council Minute Book October 1830-July 1841, RGS; 28 November 1842, 33, Council Minute Book November 1841-March 1853, RGS. Also see Prescott 2012c.

[646] Dorothy Prescott, Email interview, 4.7.2017.

[647] I have been able to find traces of this correspondence via printed materials. For example, in 1839 Arrowsmith corresponded with the governor of New South Wales regarding the maps he had recently published. See "Legislative Council" *The Sydney Herald*, 15 November 1839, 2.

[648] See the preface in Arrowsmith, J. *The London Atlas of Universal Geography*, 1835, MAPS 41.f.7, BL.

[649] Graham D. Burnett makes this characterization in reference to Herbert's detailed analysis of the atlas. See Burnett 2000, 6. Also see Herbert 1989.

[650] Verner 1971b, 1–7; Herbert 1989, 98–123.

Arrowsmith's and the Arrowsmith family map firm's significance for nineteenth-century cartography has been noted,[651] but less attention has been paid to and is currently known about how he prepared his maps, how his firm operated and what his relationships with the government departments in practice were.[652] This is perhaps due to the fact that only scant details of John Arrowsmith's actions can be found in surviving correspondence,[653] which are in stark contrast with the extensive amount of cartographic materials that have survived. However, traces of how Arrowsmith acquired new information and his relationship with the Colonial Office can be studied from annotations made by the civil servants in the correspondence between the secretary of state and the governors of the Australian colonies. This source of documents also contains a fraction of the correspondence between the cartographer and the Colonial Office staff. As far as is known, no numerous correspondences exist or have been yet identified.[654] However, a systematic examination of the remaining traces makes it possible to grasp important aspects of the discourse surrounding Arrowsmith's maps and provides novel information about an important commercial cartographer.

The civil servants were quick to inform Arrowsmith about the new and more accurate information that had arrived on their desks. The annotations by civil servants reveal how Arrowsmith was supplied with information and material—texts and maps containing new geographical knowledge—that the civil servants thought might be of interest to him. They were forwarded to Arrowsmith for inspection, and as already noted frequently to be prepared for publication with the parliamentary papers. He then had the possibility to contemplate whether or not to publish them or use them to update his maps. This applied to maps

[651] See Verner 1971b; McGechaen and Verner 1973a; McGechaen and Verner 1973b; Herbert 1989; Lines 1992, 15; Baigent 2004b; Prescott 2012p; Allen 2017.
[652] See, however, Elri Liebenberg's studies on Arrowsmith's mapping of South Africa and Francis Herbert's study of Arrowsmith's atlas, which touch upon these issues. See Herbert 1989, 105; Liebenberg 2007; Liebenberg 2008.
[653] Verner 1971a, 1; Herbert 1989, 102. The Archives of the Royal Geographical Society contain a small selection of his letters to the society as does The John Murray Archive housed by the National Library of Scotland.
[654] I have consulted the registers of correspondence at the National Archives but have not found many traces that document this. Only few drafts of letters addressed to Arrowsmith remain bound in the correspondence. See for example Draft to Arrowsmith 14 September 1853 in Young to Newcastle 27 May 1853 no. 6, f. 211, CO 13/81, TNA.

and tracings that showed the routes of explorations, as well as to tracings that exhibited the progress of the surveys.[655]

Arrowsmith also had opportunities to use the map library at the Colonial Office, alongside the other governmental collections he was allowed access to. Evidence of Arrowsmith's visits is discernible in the annotations made by civil servants, who noted that he had consulted maps. They also suggested that newly-arrived maps should be shown to him when he next visited the office.[656] When contemplating whether something should be transmitted to Arrowsmith, the civil servants - especially Gordon Gairdner – considered whether the cartographer was likely to see the tracings or maps received through the RGS. If yes, the conclusion could be that there was no need to transmit them to Arrowsmith.[657] This evidence is illustrative of the fact that a majority of the communication with the cartographer was presumably verbal, not textual. Thus, it is probable that Arrowsmith visited the office fairly often and consulted more maps that arrived from the Australian colonies than are documented in the annotations made by the civil servants. It is also noticeable that co-operation between the civil servants and Arrowsmith continued until the 1860s, when the cartographer retired from active map publishing. In retirement he worked at his home, 35 Hereford Square, in South Kensington, but also continued his visits to the government departments to acquire new material for his work.[658]

The large number of references to Arrowsmith in the correspondence stands in stark contrast with the other mapmakers of the time. Some London-based cartographers, such as Joshua Archer and Trelawny Saunders, the latter of whom represented Stanford's Geographical Establishment, made less frequent requests for the latest available information

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[655] These instances are documented, for example, in the following dispatches: the annotation by Stephen 19 February 1841 in Gipps to Russell 28 September 1840 no 139, 169, CO 201/299, TNA; the annotation by Gairdner 7 January 1851 in Fitzroy to Grey 23 July 1850 no 142, 330, CO 201/430, TNA; Hawes to Arrowsmith 25 February 1850, Copy of letter in John Pakington to Henry Young. June 19 1852, no 25, GRG2/1/12 SROSA; Hawes to Arrowsmith 23 July 1850 in John Pakington to Henry Young 19 June 1852 no. 25, GRG2/1/12 SROSA; a minute by Gairdner 22 August 1853 in Young to Newcastle 27 May 1853 no. 6, f. 210, CO 13/81, TNA; draft to Arrowsmith 14 September 1853 in Young to Newcastle 27 May 1853 no. 6, f. 211, CO 13/81, TNA; a minute by Merivale 6 February 1854 in Newcastle to Young 15 October 1853 no 53, 151, CO 13/82, TNA; the annotation by Merivale 6 February 1854 in Young to Newcastle 15 October 1853 no. 54, f. 151, CO 13/82, TNA; a minute by Gairdner 26 September 1857 in MacDonnell to Labouchere 11 July 1857 no. 172, ff. 304-305, CO 18/95, TNA; the annotations in Bowen to Newcastle 29 September 1860 no. 78, f. 81, CO 234/2, TNA; a minute by Dealtry 21 April 1862 in Barkly to Newcastle 19 February 1862 no 24, f. 145, CO 309/59, TNA; the annotations in Barkly to Newcastle 19 February 1862 no. 24, f. 145, CO 309/59, TNA.

[656] See, for example, the annotation by Hawes 2 December 1850 in Fitzgerald to Grey 23 August 1850 no. 67, f. 324, CO 18/54, TNA; Annotations by Gairdner s. d. and 6 November 1852 in Fitzgerald to Pakington 17 June 1852 no. 91, f. 303, CO 18/66, TNA; the annotation by Gairdner 6 September 1853 in Fitzgerald to Pakington 6 June 1853 no. 22, f. 12, CO 18/74, TNA; the annotations by Dealtry and Elliot 26 December 1860 in MacDonnell to Newcastle 26 October 1860, no. 436, ff. 596-597, CO 13/102, TNA; the annotation by Cox in Bowen to Newcastle 14 January 1861 no. 6, f. 47, CO 234/3, TNA.

[657] See for example the annotation in Draft to the Secretary of the RGS 24 January 1861 in MacDonnell to Newcastle 26 October 1860 no. 432, f. 550, CO 13/102, TNA; the annotation by Gairdner in MacDonnell to Newcastle 26 October 1860 no. 436, f. 596, CO 13/102, TNA.

[658] Coote 1885, 125; Baigent 2004b.

in order to insert it in the maps they were preparing.[659] The requests made to the secretary of state and his undersecretaries—and their willingness to comply with them—demonstrates the nature of a government department as a confined space for the storage of useful and unique knowledge, which was available to these actors at their request. It is known, for example, that the Society for the Diffusion of Useful Knowledge, an organization founded in the 1820s to enhance the availability of knowledge to wider audiences through its mass-produced and inexpensive publications, made use of map library of the Colonial Office.[660]

The fact that the civil servants extensively used the Arrowsmith map firm in the preparation of maps, and provided him with the latest geographical information, elevated Arrowsmith to a person of authority regarding the construction of Australian geography on maps. It appears that Arrowsmith was such an indispensable aid to the civil servants, when it came to the preparation of maps, that in 1841 James Stephen referred to him as "a useful and cheap ally of ours".[661]

Arrowsmith's role as an "ally" of the civil servants is most evident when he was commissioned to prepare maps as government records (either for use within government departments or to be printed as supplementary information with parliamentary papers). A particularly well-documented chain of events relates to a map commissioned by staff in the Colonial Office in the 1850s for the use of the Land and Emigration Commission (also known as the Colonial Land and Emigration Board), which dealt with grants of land and emigration to the colonies.[662] The need to prepare a map depicting the state of land in the colony that had either been sold or remained available for purchase emerged when the civil servants working with the commission noticed that they needed new information to be able to answer queries relating to the colony. The process of engraving a map that highlighted sold and unsold land in South Australia in 1852 reveals many of the complexities involved in preparing usable maps for administrative use in London.

In 1850, governor Henry Young suggested that the plans prepared in the colony by the Survey Department, which outlined sold and unsold land from the previous year, should be engraved in Britain and printed in order to facilitate their dissemination. An enquiry had been made as to whether Arrowsmith was interested in the project, but he was not able to accept the work at the time.[663] In 1852, Arrowsmith finally agreed to produce the engravings for £650, and he estimated that it would take approximately fifteen months to finish the work. Hence, by the time the maps were finished, they were already four years out of

[659] See, for example, Archer to Stephen 12 March 1838, f. 10, CO 201/281, TNA; Saunders to Newcastle 9 February 1860, f. 742, CO 234/2, TNA.
[660] Cain 1994. For the society, also see Drayton 1993, 226–27.
[661] Annotation by Stephen 12 October 1841 in Gipps to Russell 14 May 1841 no. 113, f. 316, CO 201/309, TNA.
[662] The Land and Emigration Commission had been created in 1840 by combining the duties managed by the Colonization Commissioners for South Australia and agent general for emigration.
[663] Arrowsmith to Merivale 19 March 1852 in Pakington to Young 19 June 1852, no. 25, GRG2/1/12 SROSA. See also Hawes to Arrowsmith 23 July 1850 in Pakington to Young 19 June 1852, no. 25, GRG2/1/12 SROSA.

date.[664] Thus, it became questionable whether the preparation of such maps served any practical purpose. Writing to Merivale in May 1852, Thomas W. C. Murdoch (1809–1891) and Charles Alexander Wood (1810–1890), from the Colonial Land and Emigration Department, expressed their reservations about the usefulness of investing money into the execution of such a project. They argued that "for the purpose of reference in this country the whole would be as useful in their present form as if engraved" as portions of the sheets were blank.[665] The Treasury Department was of a similar opinion and encouraged a search for more recent information that would make it possible to engrave plates "as nearly as possible [...] to the present state of the Lands in the Colony."[666]

These points were taken into account at the Colonial Office. However, the project was considered worthwhile, as the colonists urged the preparation of the map and funds were readily available from the Land Board.[667] Consequently, Merivale agreed to recommend that the process should be allowed to continue, with the condition that the governor would be asked to furnish Arrowsmith with the most recent information when possible.[668] Thus, in June 1852 John Pakington (1799–1880), secretary of state at the time, wrote to governor Young in order to request additional information regarding the surveys made in the colony.[669]

Subsequently, the governor was asked to send all further information to London that might aid Arrowsmith when producing the engravings.[670] The request reached Adelaide in November 1852, and surveyor-general Arthur Freeling agreed to "prepare tracings of the additional work performed since 1849, which shall be so arranged as to enable Mr. Arrowsmith to add the surveys on the engravings up to the present date". Freeling, however, was of the opinion that adding new information would result in increased expenses in regard to engraving the map. He knew that approximately 150,000 acres of land had been surveyed since 1849.[671] The additional information reached London in July 1853, with a request from the governor that three hundred copies of the map be sent to the colony.[672]

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[664] Hawes to Arrowsmith 25 February 1850 in Pakington to Young 19 June 1852 no. 25, GRG2/1/12 SROSA; Hawes to Arrowsmith 23 July 1850 in Pakington to Young 19 June 1852 no. 25, GRG2/1/12 SROSA.

[665] Murdoch and Wood to Merivale 5 May 1852 in Pakington to Young 19 June 1852 no. 25, GRG2/1/12 SROSA; Trevelyan to Merivale 10 June 1852 in Pakington to Young 19 June 1852 no. 25, GRG2/1/12 SROSA; Trevelyan to Merivale 10 June 1852, ff. 133-134, CO 13/79, TNA.

[666] Trevelyan to Merivale 10 June 1852, ff. 133-134, CO 13/79; Copy of letter in Pakington to Young 19 June 1852, no. 25, GRG2/1/12 SROSA.

[667] Annotations in Murdoch and Wood to Merivale 5 May 1852, ff. 200–201, CO 13/79, TNA.

[668] Merivale to Trevelyan 28 May 1852 in Pakington to Young 19 June 1852, no. 25, GRG2/1/12 SROSA; Merivale to Colonial Land and Emigration Commissioners 23 June 1852 in Pakington to Young 19 June 1852, no. 25, GRG2/1/12 SROSA.

[669] Pakington to Young 19 June 1852 no. 25, GRG2/1/12 SROSA.

[670] Pakington to Young. 19 June 1852 no. 25, GRG2/1/12 SROSA.

[671] Annotation by anom. 5 November 1852 and annotation by Freeling 6 November 1852 in Pakington to Young 19 June 1852, no. 25, GRG2/1/12 SROSA. See also Young to Pakington 5 January 1853 no. 1, f. 1, CO 13/80, TNA.

[672] Young to Pakington 26 February 1853 no. 25, f.136, CO 13/80, TNA.

The preparation of the map, which depicted sold and unsold land, illustrates four particular points. First, it highlights the challenges faced when attempting to record colonial space on a map. The inability to consult the fullest records that contained details of the data gleaned from the most recent surveys, which were based in Australia, posed a great challenge in the preparation of the map. Secondly, this example reveals how the production of government records was very much a matter of having the right people available to execute the job. On this particular occasion, it meant that Arrowsmith's initial reluctance to accept the commission had a negative effect on the pace of the production process. The preparation of maps was more complex than the production of other types of publication by government officials. Indeed, it was beyond the know-how of the staff at the Colonial Office. This meant that expertise had to be sought elsewhere. In the 1820s, the Colonial Office employed a geographer responsible for copying and constructing maps.[673] This position was not continued into the 1830s, hence creating the need to use commercial cartographers. Consequently, many of the printed maps of Australia at the disposal of the civil servants in London were actually prepared by commercial cartographers. On many occasions, as in the case being discussed at present, the civil servants turned to Arrowsmith to execute the job and consequently, Arrowsmith came to be trusted as an important imperial cartographer. This at least partly stemmed from the fact that the British state did not have a mapping department of its own until the mid-century when The Topographical Depot was established at the War Office.[674]

Thirdly, the opinions of the officers regarding the map in question highlight, yet again, how the same document could be viewed as either useful or impractical. The data engraved onto the plates quickly became outdated. Hence, the ways in which the printed map could actually be used were questionable. Yet, at the same time, an outdated map that could be easily printed and transmitted to multiple parties was considered valuable. Such a map served as a means to communicate knowledge about the progress that had been made and to communicate information that was difficult to comprehend without a cartographical representation. Fourthly, and perhaps most generally, Arrowsmith's role in this instance makes it evident, as Mary Pedley has noted, that one should be cautious when examining the connotations of the phrase "commercial cartography", especially in terms of it constituting something separate from state-produced maps. In simple terms, commercial cartography "is the production of printed maps to be sold to a public market".[675] In this sense, Arrowsmith stands out as a prime example of a cartographer whose work not only ranged from commercial cartography to mappings prepared for the state, but which extensively co-constituted each other.

The processes involved in the preparation of a map for the use of the Land and Emigration Commission are demonstrative of the type of work Arrowsmith performed for the

[673] Young 1961, 141.
[674] Heffernan 1996, 506; Black 2014, 297–98; Foliard 2017, 15.
[675] Pedley 2005, 9.

state: he was commissioned to produce maps and he received financial compensation for his work. Herbert has noted the benefits for Arrowsmith of cooperating with state departments as well as commercial book publishers and the RGS, in terms of the data and income he obtained. This income provided Arrowsmith with funds to pursue his publishing endeavors, which included his well-known atlas.[676] The money he received from the state also allowed him to work on other maps that depicted discoveries in different parts of the world, without any immediate need to seek profit.[677] Indeed, as Keighren, Withers and Bell note, Arrowsmith's habit was to prepare maps he could employ simultaneously for different purposes and thus divide their costs between different publications.[678]

However, it is apparent that the access granted to Arrowsmith to state records served another important purpose: the distribution of information about the Australian continent to the public. When Arrowsmith visited the Colonial Office he gained invaluable data that could be inserted into his maps. Consequently, in addition to producing maps for the use of state departments, Arrowsmith was also an important popularizer of geographical knowledge of Australia but other parts of the globe too. His maps reached the eyes of different audiences through the many types of publications that were accompanied by his maps. Arrowsmith also exhibited the maps he was preparing at the evening meetings of the RGS. In 1853, for example, he displayed his new map that depicted Eastern Australia and the location of gold fields.[679] As Arrowsmith's maps of Australia were seen in different formats and locations by many people they came to function as important authoritative documents on Australian geography.

John Arrowsmith's reputation as a trusted cartographer to different parties appears to have been similar to his uncle, Aaron. The elder Arrowsmith developed a close working relationship with the hydrographer Alexander Dalrymple and representatives from the Hudson Bay Company (HBC). Consequently, he gained access to a wealth of information regarding the coast and interior of North America.[680] Viewed on a more general level, the reputations gained by these two Arrowsmiths demonstrates the willingness and need of different actors—British departments of state, Dalrymple, the HBC and the RGS among others—to employ commercial cartographers in order to distribute knowledge about the different parts of the world to the British public. This coincides with the practices of the time as the clustering of map-making London granted multiple actors similar positions as the Arrowsmiths: as Daniel Foliard notes, "the commercial cartographer could make the best of these concentrated information inputs" that existed.[681]

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[676] Herbert 1989, 105.
[677] Baigent 2004b.
[678] Keighren, Withers and Bell 2015, 160–161.
[679] This is documented in the report published in *Adelaide Observer.* See "British Gleanings", *Adelaide Observer,* 6 August 1853, 6.
[680] Walker 2016, 25–26.
[681] Foliard 2017, 70.

The transferal of information from documents at the Colonial Office to maps that depicted entire continents or portions was not straightforward. Indeed, it was a matter of selection, which constitutes any generalizing knowledge-producing enterprises. G. R. Crone characterizes the role of the cartographer as follows: once the travelers' records arrived in Britain the tasks of the cartographers were "to check the data, reconcile it with the best available sources, and draw and engrave the map".[682] Consequently, when John Arrowsmith assessed cartographical data, he had to evaluate what material merited inclusion in his maps. This process was acknowledged by the civil servants. In December 1850, for instance, parliamentary under-secretary Benjamin Hawes (1797–1862) noted that the tracings prepared at the Survey Department of Western Australia should be shown to Arrowsmith as "it may happen that a few points are correctly laid down, which might be transported to his public maps".[683] In a similar manner, junior clerk William Dealtry noted a few years later that the tracings exhibiting Gregory's route to Sharks Bay might be shown to Arrowsmith in order to help him correct his maps.[684]

In addition to pointing out clear instances in which the civil servants estimated that the information received would be of interest to Arrowsmith, the comments by Hawes and Dealtry highlight attitudes towards the data that had been received from the colonies. For Dealtry, the new information was something that would "help correct" Arrowsmith's maps. However, for Hawes it was not evident that the tracings received from Western Australia would necessarily contain information that would improve Arrowsmith's maps and therefore warrant being made public.

Arrowsmith was also the cartographer that the civil servants in Britain referred to if they ever needed to ensure that particular nomenclature was adopted on the maps of Australia. This was rare, however, and occurred only once in the Australian context. Naming was an important aspect of making knowledge, and at its basis a social process that is highly political.[685] Typically, natural features were named by explorers and surveyors and these were the ones adopted without further instructions.[686] The same applied to the naming of political entities and administrative structures: for example counties and districts

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[682] Crone 1978, 113, 115.

[683] Annotation by Hawes 2 December 1850 in Fitzgerald to Grey 23 August 1850 no. 67, f. 324, CO 18/54, TNA.

[684] Annotations by Dealtry 28 September 1852 in Fitzgerald to Grey 17 June 1852 no. 91, f. 303, CO 18/66, TNA.

[685] This point is made among others by, for example, Londa Schiebinger in reference to botanical nomenclature. See Schiebinger 2007, 91.

[686] Governors only occasionally influenced the nomenclature produced by the explorers. On occasions, governors had the final say in naming a natural feature. See, for example, the measures adopted by Richard MacDonnell in order to re-enforce the name of Lake Torrens, in the case of the results of Herschel Babbage's expedition. See MacDonnell to Lytton 21 January 1859 no. 296, ff. 106-110, CO 13/99, TNA. Explorers, if they were the first discoverers of natural features, could also alter the names themselves. This was the case when Charles Sturt suggested renaming Lake Alexandrina to Lake Victoria. See Sturt to Stanley 15 March 1843, ff. 453, CO 13/35, TNA.

were named by surveyors, approved by the colony's administration and sanctioned in London.[687] A similar procedure occurred in the case of natural features only when they were subject to decision-making: these were occasions when names had to be altered for one reason or another. These instances occurred as knowledge of the relative positions of the natural features accumulated.

Within the correspondence from the Australian colonies, one can highlight a particular example that occurred in the late 1850s, regarding the name of the present-day Cooper Creek in the north-east corner of South Australia and in the south-west of Queensland. The Colonial Office was asked to decide a name for a river that had been discovered in fragments. Consequently, it had been given several different names.[688] Sections of the river were named by their discoverers, such as Strzelecki's Creek, Cooper's Creek, and Victoria Creek. This followed an old tradition of naming features and places after their founders, or commemorating political leaders or other prominent individuals.[689] In addition, the indigenous name of Barcoo was used to refer to parts of the river. The recent explorations by Augustus C. Gregory had led to a long correspondence between the governments of New South Wales and South Australia regarding the need to select a common name. Being concerned about the decision-making process, Richard MacDonnell, the governor of South Australia, sought advice from London.[690]

When contemplating the matter in London, the civil servants proceeded to consult explorer Charles Sturt, who had discovered several parts of the river, and consulted the other governors. What followed were multiple discussions, a great deal of minuting and many letters, which considered what name would be most suitable for the river.[691] As a result, the decision was finally left to the civil servants, who, as they had from the beginning, thought

[687] This practice is described by James Stephen when discussing the naming of counties in South Australia. See Minute by Stephen 10 January 1843 in Grey to Stanley 5 July 1842 no. 68, f. 239, CO 13/36, TNA.
[688] A minute by Elliot 19 November 1859 in MacDonnell to Lytton 17 August 1859, no. 339, ff. 133-135, CO 13/100, TNA. A similar, yet a far less complicated instance, dates to 1847 when what was presumed to be River Boyne in current central Queensland was discovered to consist of two separate rivers. Thus, the civil servants sanctioned the alterations that were made to the nomenclature. See the minute by Gairdner 1 March 1848 no. 192, f. 143, CO 201/384, TNA.
[689] Rose-Redwood, Alderman, and Azaryahu 2010, 458.
[690] MacDonnell to Lytton 17 August 1859, no. 339, ff. 130-131, CO 13/100, TNA. For the correspondence that had taken place between the colonies, see, for example, Colonial Secretary of New South Wales to the Chief Secretary of South Australia 27 July 1859 in MacDonnell to Lytton 17 August 1859, no. 339, f. 142-143, CO 13/100, TNA; Extract of a letter from the Surveyor General 20 May 1859 in MacDonnell to Lytton 17 August 1859, no. 339, f. 144, CO 13/100, TNA; Chief Secretary of South Australia to the Colonial Secretary of New South Wales 17 August 1859 in MacDonnell to Lytton 17 August 1859, no. 339, f. 145, CO 13/100, TNA.
[691] For the correspondence that occurred between the colonial governors, Sturt and the Colonial Office, as well as the resulting minutes, see MacDonnell to Lytton 17 August 1859, no. 339, ff. 130-131, CO 13/100, TNA; MacDonnell to Newcastle 24 September 1859 no. 416, f. 425, CO 13/102, TNA; Sturt to Fortescue 3 December 1859, ff. 294-296, CO 13/101, TNA; Bowen to Newcastle 8 August 1860 no. 60, ff. 607-609, CO 234/1, TNA; Denison to November 24 October 1860 no. 107, ff. 511-513, CO 201/513, TNA; MacDonnell to November 15 November 1860 no. 447, ff. 68-69, CO 13/103, TNA; MacDonnell to Newcastle 9 May 1861 no. 491, f. 120, CO 13/105, TNA.

that the indigenous name "was the best in principle".[692] Thus, it was decided that Barcoo would be adopted for the whole river.[693] Once a decision had been reached Arrowsmith was informed and asked to keep the "alteration in mind in any future maps of Australia which may be published under your superintendence".[694] This was similar to the promise made by the governors vis-à-vis the instruction given to the survey departments when preparing maps.[695]

The practice of informing Arrowsmith about decisions that had been made directs our attention to his role as a consolidator of the place names that were finally adopted. In the process of discussing the appellation of the creek, surveyor-general Arthur Freeling in South Australia noted how it was only a matter of time before the name of "Cooper", which had been proposed by Gregory for the whole river on the maps relating to his recent exploration, would be shown on the maps "published in England by Arrowsmith, Wyld, &c.". Subsequently, the name was shown on the copies sent to Britain.[696]

The networks utilized by Arrowsmith ensured that he came to be perceived as a cartographical authority in Britain. His maps were read and used by many. If something did not appear in a map by Arrowsmith, it made discussion about facts difficult as they were supposed to contain the latest information. This is highlighted in John Barrow's, the second secretary to the admiralty, letter to Lord Stanley, the Secretary of State, in the 1840s in which he analyzed Sturt's plans to proceed into central Australia on his expedition. Barrow, who had been asked to deliberate on whether Sturt's expedition should proceed along the planned route, noted that he found it difficult to comprehend the proposal:

> I am quite at a loss to comprehend what object Captain Sturt can have in view by directing his course to the Westward. I am entirely ignorant of the Anabranch of the Darling, and equally so of Laidley's Ponds as neither of them are in the very latest Charts of Arrowsmith [...].[697]

Arrowsmith's maps were Barrow's point of reference when he discussed matters relating to Australia. On this occasion, however, it appeared that he was not able to fully participate in the discussion as he lacked the information relating to the newly-discovered hydrographical features that was in Sturt's possession. It is not clear what maps Barrow was

[692] A minute by Newcastle 28 December 1859 in Sturt to Fortescue 3 December 1859, f. 303, CO 13/101, TNA.
[693] A minute by Hall 1 February 1861 in MacDonnell to Newcastle 15 November 1860 no. 447, ff. 69-70, CO 13/103, TNA. See also the minute by Elliot 9 February 1861 in MacDonnell to Newcastle 15 November 1860 no. 447, ff. 70-71, CO 13/103, TNA; A minute by Fortescue 12 February 1861 in MacDonnell to Newcastle 15 November 1860 no. 447, f. 71, CO 13/103, TNA.
[694] Draft letter to Arrowsmith 12 March 1861 in MacDonnell to Newcastle 15 November 1860 no. 447, f. 74, CO 13/103, TNA. See also draft to Young 26 February 1861 in Denison to Newcastle 24 October 1860 no. 107, f. 514, CO 201/513, TNA.
[695] MacDonnell to Newcastle 9 May 1861 no. 491, ff. 120, CO 13/105, TNA. See also MacDonnell to Newcastle 15 November 1860 no. 447, ff. 68-69, CO 13/103, TNA.
[696] Extract of a letter from the Surveyor General 20 May 1859 in MacDonnell to Lytton 17 August 1859, no. 339, f. 144, CO 13/100, TNA.
[697] Barrow to Hope 25 January 1845, f. 11, CO 13/46, TNA.

referring to, but they might have been the ones published in the early 1840s that depicted the south-eastern portion of the continent. Arrowsmith published a new map only after he incorporated Sturt's discoveries. This example demonstrates, yet again, how the amount of information and its documentation on maps varied between different locations. Furthermore, this impacted on the way matters could be discussed.

Arrowsmith's maps were also used by colonial governors and surveyors. Similarly, explorers consulted maps prepared by Arrowsmith when proceeding in the field. This was similar to the way explorers in other parts of the world employed the latest printed maps when embarking on expeditions. These were most likely maps that were available and sold in cases to ensure easy transportation.[698] The explorers mentioned some of the occasions they used maps by Arrowsmith in their letters, reports and accounts. Mitchell noted in a letter to Sydney in October 1836, for example, that during his expedition to investigate the course of the Darling, he proceeded according to Arrowsmith's map that he had been directed to use on his expedition. A decade later Mitchell made similar references to Arrowsmith's maps. However, on this occasion he noted an error in the representation of the hydrography of the area that he had explored to the north-west of Sydney.[699] When examining how explorers reported and how the colonial press discussed their expeditions it is evident that Arrowsmith's maps were one of the primary ways to put the data into perspective. What was observed in the field was often compared to Arrowsmith's cartographies of the area and possible differences were contemplated. For example, the positions of geographical features in comparison to their located on Arrowsmith's maps were often mentioned. Similarly, ideas developed if what was seen in the environment corresponded to what was represented in the maps.[700]

Consequently, it appears that Arrowsmith's maps were everywhere where Australia's geography was discussed in the mid-nineteenth century: in different types of publications, at the government departments, his atlases and they were consumed in the Australian colonies. This urges one to consider questions regarding their consumption and prices. This can be contemplated through comparison with the other available maps. I have not been able to find data that explicitly documents the number of maps produced by the firm and how many were sold. As Mead T. Cain notes, the price of maps in Britain around

[698] See, for example, Bassett 1994, 317; Foliard 2017, 35.

[699] "Major Mitchell's Expedition", *The Sydney Herald,* 10 November 1836, 2; Mitchell 1839, 83, 87; Mitchell 1848, 69.

[700] For examples of these in the colonial press, the travel accounts and the correspondence, see "Camp on the River Murrumbidgee, in lat. 35 7' 11" S., long. 147 27' 40" E.", *The Sydney Monitor,* 9 November 1836, 3; "Supplement to the New South Wales Government Gazette 5 November 1836" in Bourke to Glenelg 15 November 1836 no. 122, ff. 214–215, CO 201/255, TNA; "Expedition of the Beagle to Port Grey", *Inquirer,* 22 December 1841, 2; "Captain Stokes's Discoveries", *The Sydney Morning Herald,* 25 March 1846, 2; Leichardt 1847, xiv, 327, 426; "Philosophical Institute of Victoria", *The Argus,* 3 September 1857, 5; "Victoria", *South Australian Register,* 15 September 1857; "Expedition to the Lower Murray, Under the Conduct of M. Blandowski", *The Age,* 6 October 1857, 5; Sturt to Fortescue 3 December 1859, ff. 294–296, CO 13/101, TNA.

1825 remained high, even though production had increased.[701] In Britain, advertisements detail how Arrowsmith's maps, which depicted the travels of explorers, were available for seven shillings in separate cases. Moreover, in 1841, his atlas was being sold for £13 and included fifty maps.[702] Individual maps by Arrowsmith were also sold in Melbourne, for example, with prices ranging between £3 and £7.[703]

These prices can be compared to those set by the Society of the Diffusion of Useful Knowledge, which aimed at educating the public via the publication of inexpensive publications: the maps produced by this society were sold two at a time for 1 shilling and could be collected into an atlas.[704] James Wyld Junior's *General Atlas*, which contained sixty-five maps, however, only sold at the slightly cheaper price of £11.[705] Mitchell's three-sheet map, which can be used as a further point of comparison, was sold for £1 10s. If bought with the maps printed in his travel account, entitled *Three Expeditions in to the Interior of Australia,* the price was advertised as £1 16s.[706] Hence, the maps produced by Arrowsmith and Mitchell were many times more expensive. If compared to the average annual earnings of a worker in Britain, which were between £30 and £40, it is clear that these maps were tailored to a limited number of wealthy people, including individuals holding political offices such as Secretaries of State for the Colonies, whose annual salary was approximately £ 5000.[707]

As Amy Prior has noted, when dealing with the mapping of Africa by the Bartholomew map firm, commercial cartographers produced maps that were seen by many more people than those prepared in government offices.[708] Accessing information fostered by the Colonial Office, the RGS and the explorers enabled Arrowsmith to bring before the public the surveys that were made in Australia, they also visualized the progress in exploration and produced geographical knowledge in a new form. Consequently, Arrowsmith's maps depicting the whole continent or portions of it had an enormous effect on the ways in which the spatial relations of the continent came to be understood. Therefore, in the next section I will investigate in more detail how Arrowsmith mapped the continent in comparison to the other maps published at the time. Furthermore, I will examine how his mappings were discussed in the colonies. By doing so, I seek to understand how these dominant cartographies composed in the metropolis were received and evaluated in the colonies.

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701 Cain 1994, 151.
702 Stuart 1849a, x; Herbert 1989, 104.
703 "Advertising" *Geelong Advertiser and Intelligencer,* 9 February 1856, 7; "Advertising" *The Age* 9 July 1856, 1; "Advertising" *The Argus,* 7 July 1858, 8.
704 Cain 1994; Foliard 2017, 75. On request the maps could be purchased with colored borders for 1 shilling and sixpence.
705 See advertisement in *The Quaterly Review* no CL March 1845, 58.
706 See advertisement in Mitchell 1839.
707 The estimate for the average earnings derive from Gregory 2017. For the salary of the Secretary of State and the salaries of the civil servants see Sainty 1976, 8.
708 Prior 2012, 122.

Filling the Blanks? Constructing the Australian Environment on Maps

> The map of Australia is a curiosity of the nineteenth century. Perhaps nothing approaching nearer to an absolute blank issues from the establishment of Mr. ARROWSMITH. A patch of terra-cognita on the south-east corner, a patch–a speck–on the south-west corner, a few bush-tracks across the desolate scene, and we have the map of golden Australia.[709]

In 1859 a writer to the Melbournian newspaper *The Argus* characterized Arrowsmith's maps as cartographical products that were "nearer to an absolute blank", thus drawing attention to—in his view—the curious character of the Australian map. These notions were part of an article discussing the need to continue explorations and wondering what the exploration committee, which had been appointed by the colonial government, was currently doing. In the writer's view the blankness on Arrowsmith's maps was extraordinary when considered with the amount of information produced by the explorers. Indeed, the writer noted that "a more diligent examination of the records of past explorations would cause the map of our continent to look more comfortably furnished; and these records bring us to the brink of further discoveries". Referring to the results of different expeditions, the writer argued that further journeys of discovery would have great benefits as they would locate further good tracts of land and further geographical knowledge.[710] Consequently, the writer questioned the accuracy and truthfulness of Arrowsmith's maps as representations of the continent. In the view of the writer, the blankness of the maps did not correspond to what was actually known about the environment.

The question regarding how the map corresponded to the actual environment was, of course, vital for the way such cartographical representations were read in the nineteenth century. Arrowsmith's way of representing the characteristics of the land centered on the changed preferences about the map as a way of knowing the world. Moreover, on a more general level, it concerned ideals of empiricism and credibility. The manner in which maps were emptied of rumors, tales and stories in an extensive manner during the eighteenth century, was the result of an epistemological change that began during the seventeenth century. Empiricism became the most appreciated way of knowing. This change influenced European spatial thought. It had profound consequences for the way the world was comprehended through maps. Siobhan Carroll emphasizes, for example, that blank spaces became attractive targets of discovery, exploration and occupation as they implied "the want of intelligence" and lack of ownership.[711] In this mode of thinking, being able to accurately locate what had been observed became pivotal. The coordinates assigned to observations fixed them as points of reference that could, as Brian Richardson has pointed out, only be utilized alongside other points of reference.[712] These changes affected the way maps as

[709] "Saturday, October 15, 1859", *The Argus*, 15 October 1859, 4.
[710] "Saturday, October 15, 1859", *The Argus*, 15 October 1859, 4.
[711] See Carroll 2015, 1–6. Also see Kennedy 2013, 11–13.
[712] Richardson 2005, 47. Richardson writes about coordinates as points that are eventually empty: they fix a point of reference, yet they contain no area or shape. The referencing of locations becomes of use when the references can be read side-by-side and geometrical shapes can be discerned and depicted.

epistemological artefacts were understood: they were seen as images and mirrors of the encountered environment that could accurately represent reality.

On general maps, such as the one referred to by the writer in *The Argus*, filling in the blanks was as much a matter of knowing as it was of having the ability to represent these gaps. All in all, the ability to construct the Australian environment on maps was a matter of making choices about available observations and finding ways to visualize them on maps. Consequently, in what follows, I will examine the choices that Arrowsmith made when producing his maps and will consider his reasoning. I will do this by analyzing the process of preparing maps from two particular perspectives. First, I will discuss the issue of representing hypotheses and theories on maps. Secondly, I will examine Arrowsmith's way of incorporating individual observations in his maps.

The knowledge that derived from empirical observations is most visible in Arrowsmith's maps as textual descriptions. These provide an extensive amount of environmental information deriving from the journals that were kept during the expedition. This practice created a connection between the travel account and the map and underlined the function of the map as a visualization of the progress of the expedition. This is evident from Arrowsmith's maps that depict the routes of, among others, Edward J. Eyre, Ludwig Leichardt and Charles Sturt, who explored the continent in the late 1830s and 1840s. The maps Arrowsmith prepared to accompany their travel accounts chart the country with accompanying words. For example, Leichardt's route from Moreton Bay to Port Essington documents with words the character of the land ("sandstone" and "open forest with scrub") and the width of the streams, along with the fauna observed in the waters ("alligators"). In addition, it includes small sections of narrative. As the expedition crossed the Plains of Promise and the Albert River, for example, Arrowsmith documented the proceedings: "the Bar where we crossed proved perfectly dry during Low Water we had fortunately hit the very spot where such a crossing was possible. Banks steep."[713] As becomes apparent, these descriptions derived from the material Arrowsmith had at his disposal when preparing the maps. In particular, he utilized the manuscript journals, reports and letters, as well as the manuscript maps, tracings and their copies. These were the first places where the routes were documented with words.[714]

The descriptions also included observations about the indigenous peoples and their habits: the map depicting Leichardt's route, for example, contains a notion near South Alligator River, on the north coast, that the "natives" live off ducks, geese, fish, mussels and palm tree shoots". This type of description, about the practices and habits of the indigenous

[713] Arrowsmith, J. *Detailed map of Dr. Ludwig Leichhardts route* […], 1847, MAP RM 791 (Copy 2), NLA. For similar examples see Arrowsmith, J. *Map of Mr Eyre's routes* […], 1845, M3 806p/1840-1/2, SLNSW; Arrowsmith, J. *Map of Captn. Sturt's route* […], 1849, MAP NK 2456/157, NLA.
[714] See, for example Gregory, A. C. *Map of the explorations of the North Australian Expedition*, ca. 1858, sheets 1-5, MAP RM 1189, NLA.

peoples encountered in different parts of the world, is typical of the time. Similar observations were made in the journals and the appendices dedicated to the description of the "aborigenes".[715] Most importantly, these descriptions visualize how the explorers gained information from the indigenous peoples they encountered in the field and made observations about the environment. Along Sturt's route, for example, the map documents the spot where "The natives told Sturt there was no w^{r} to the Eastw^{d} - to the NE (only) there was w^{r}",[716] and explicitly outlines what Sturt believed about the character of the land.[717]

Consequently, the descriptions included in the maps demonstrate the different types sources of information contained in the explorers' accounts, which ranged from observations to assumptions and information gained from people encountered in the field. Thus, the mixed methods used by explorers to gather geographical data became visible. As multiple scholars have emphasized, indigenous knowledge and assistance was crucial in terms of the successful execution of expeditions. Similar to other areas of European exploration, indigenous peoples in Australia functioned as guides, carriers, informants and diplomats for European explorers.[718] Encounters with indigenous peoples and convicts provided governors with information about the environment. The same scenario played out with explorers, in regard to the cartographical and geographical data they produced. As Dane Kennedy notes, these encounters and the use of indigenous guides had "epistemological underpinnings", which need to be acknowledged.[719]

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[715] Arrowsmith, J. *Detailed map of Dr. Ludwig Leichhardts route* [...], 1847, MAP RM 791 (Copy 2), NLA. For similar examples see Arrowsmith, J. *Map of Mr Eyre's routes* [...], 1845, M3 806p/1840-1/2, SLNSW; Arrowsmith, J. *Map of Captn. Sturt's route* [...], 1849, MAP NK 2456/157, NLA. For explorers' ways of describing the peoples they encountered see, Grey 1841, 207–364; Eyre 1845, 147–152; Sturt 1849a, 134–41. See also Kennedy 2013, 199–204.

[716] Arrowsmith, J. *Map of Captn. Sturt's route* [...], 1849, MAP NK 2456/157, NLA. For similar examples of descriptions documenting information deriving from the indigenous peoples see, Arrowsmith, J. *Discoveries in Western Australia,* 1833, MAP RM 1183, NLA; Arrowsmith, J. "Western Australia", *JRGS* vol. 22, 1852. Similar references are visible also on Arrowsmith's maps of other parts of the world being explored at the time. See, for example, Arrowsmith, J. "Africa", *The London Atlas of Universal Geography*, 1842, DRHMC; Arrowsmith, J. "North Western Africa", *The London Atlas of Universal Geography*, 1842, DRHMC.

[717] See, for example, the descriptions "'I have every reason to believe that there are no high lands Eastw^{d} f^{m} what I may call the head of Coopers Creek'. Sturt" and "apparently clear ranges" in Arrowsmith, J. *Map of Captn. Sturt's route* [...], 1849, MAP NK 2456/157, NLA. For a similar example, see the descriptions near Lake Torrens on the map of Eyre's route. See Arrowsmith, J. *Map of Mr Eyre's routes* [...], 1845, M3 806p/1840-1/2, SLNSW. See also Arrowsmith, J. *Discoveries in Western Australia,* 1833, MAP RM 1183, NLA; Arrowsmith, J. *The colony of Western Australia,* 1839, MAP NK 2456/164, NLA. The information gained from the indigenous peoples is present on the manuscript map and Arrowsmith's map illustrating J. S. Roe's explorations. Compare Arrowsmith, J. "Western Australia", *JRGS* vol. 22, 1852 with "Tracing" in Roe to the Colonial Secretary 12 October 1846, 222-224, vol. 175, CSR, 2941, SROWA.

[718] Kennedy 2013, 158–94; Kennedy 2014a, 11–12.

[719] Kennedy 2013, 194; Kennedy 2014a, 3. Compare also the similar points made regarding the epistemological importance of the indigenous peoples to the processes of mapping see, for example, Mundy 1996; Craib 2004; Raj 2007. See also Craib's arguments regarding the necessity to continue examining the roles of people "other than imperial scientists, explorers, and bureaucrats in the acquisition, circulation and creation of spatial knowledge and representations". See Craib 2009, 486.

Thus, indigenous knowledge of the environment was not only embedded into travel accounts, but also on maps. It is however, noteworthy, that compared to the South African context, for example, the maps did not contain information that would identify the indigenous peoples in any way. Norman Etherington emphasizes this point and notes that even though indigenous place names are visible, nineteenth-century cartographers did not record ethnic groups in any way on maps of Australia. He has no comprehensive explanation for this systematic practice. Etherington considers that the indigenous peoples' nomadic way of life and the relatively small threat that they were thought to pose on the advancing settlements might have contributed to the lack of representation.[720]

In spite of these epistemological underpinnings, the extent to which explorers, surveyors, geographers and cartographers explicitly explained where they had obtained a particular piece of information varied greatly in their texts (both manuscript and those eventually printed), as did the acknowledgments used on the maps. Consequently, as this knowledge became embedded, it was also appropriated and translated into the language, signs and spatial conceptions used by the British. As Felix Driver puts it, this type of knowledge "was far from an unmediated presentation of indigenous knowledge".[721] Consequently, the extra-European environment was overwritten with European systems of knowing and ordering space,[722] thereby constituting the extension of European geographical discourse across the globe.[723] As such Arrowsmith's and many other European cartographer's maps are intercultural documents that bear, as Driver summarizes, "more or less distant traces of the knowledge of others".[724]

This general point, however, should be read alongside the fact that the British did not, for example, ignore the indigenous nomenclature. Certainly, the maps—and the discussions that took place in the colonies and in Britain—demonstrate that establishing an indigenous nomenclature was an important part of the processes of constructing geographies in the British Empire,[725] even though their resemblance with the actual nomenclature the different indigenous peoples employed is questionable. Arrowsmith's maps often document the indigenous place names alongside the names given by the explorers as mediated through their travel accounts. The reasons for this stemmed from the fact that the explorers and surveyors often asked the people they encountered about the names of distinguishable features of the land. Indeed, some, such as surveyor-general Thomas Mitchell in the 1840s,

[720] Etherington 2007b, 92–93. See also pp. 79-101.
[721] Driver 2013, 174. Keighren, Withers and Bell note how the amount of acknowledgements given to indigenous knowledge in printed British travel accounts varied geographically. Thus, it appears that no uniform policy of acknowledging or dismissing these informants existed. See Keighren, Withers, and Bell 2015, 83.
[722] Etherington 2007a, 1-3, 6. See also Byrnes 2001.
[723] Osterhammel 2014, 81.
[724] Driver 2013, 174.
[725] Osterhammel 2014, 81.

argued that it was beneficial to adopt indigenous names.[726] As Paul Carter emphasizes, the practice was generally troublesome, as the names used were often imprecise and error-strewn. Consequently, they appear more on the level of rhetoric and as arguments for authenticity. Indigenous names on a map testify to the movements of explorers and surveyors and transform space into an object of knowledge.[727]

It is important to note that the amount of blankness on a map, the visibility of mediated indigenous knowledge and the observations of the explorers depended on the scale and purpose of the cartographical illustration in question. In Arrowsmith's case, textual descriptions also played an important part in his smaller scale maps. The maps he prepared in the 1830s, for example, which depict discoveries in Western Australia and New South Wales, are replete with textual descriptions that outline the character of the country and point out where particular flora and fauna can be located. These maps also indicate the topography of the area in question and occasionally how the indigenous peoples have characterized the land. The texts are present along the routes taken by the explorers, as well as in other places.[728] Similarly, the maps Arrowsmith prepared to depict the Australian continent include textual descriptions that inform the viewer about the capabilities of the land, seasonal changes and the likely hydrographic character of the country.[729]

An analysis of the details on these maps and their successive states reveals the importance of understanding Arrowsmith's methodology and his role as a knowledge-worker and consequently, as a particular kind of knowledge-broker. His maps portray how knowledge of the environment accumulated as the country was explored. Thus, the characteristics of the land become more detailed in his maps and initial theories and visualizations were altered. However, Arrowsmith did more than merely visualize what explorers and surveyors had observed when mapping the continent: he produced his own hypotheses about the geography of the continent. To explore the cartographer's role as a knowledge-worker, I will next turn to a particularly illuminating example—Lake Torrens—

[726] See, for example, Mitchell 1848, 69. For similar arguments made in the *Journal of the Royal Geographical Society*, see, for example, Vetch, *JRGS,* vol. 8, 1838. The same principles were used when naming newly-discovered species. See, for example, Neill 1845, 412–31.
[727] Carter 1987, 63–68.
[728] Arrowsmith, J. *Discoveries in Western Australia,* 1833, MAP RM 1183, NLA; Arrowsmith, J. *Map of the discoveries in Australia,* 1832, MAP RM 2736, NLA; Arrowsmith, J. *Map of the discoveries in Australia,* 1834, MAP T 101, NLA.
[729] See, for example, Arrowsmith, J. *Australia from surveys made by order of the British Government,*, 1838, MAP RM 782A (Copy 1), NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1838, MAP RM 782C, NLA; Arrowsmith, J. *Eastern portion of Australia,* 1841, MAP NK 2456/107B, NLA; Arrowsmith, J. *Eastern portion of Australia,* 1842, MAPS 804 A 1842 ARROWSMITH, SLV; Arrowsmith, J. *Australia from surveys made by order of the British Government, 1846,* MAP NK 10749-2, NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1847, MAP RM 785 , NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1848, MAP T 84/1, NLA; Arrowsmith, J. J. *Eastern portion of Australia,* 1850, MAP T 85/2, NLA; Arrowsmith, J. *Eastern portion of Australia*, 1858, rbr 325023, SLSA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1858, MAP RM 3277, NLA; Arrowsmith (1862) *Australia from surveys made by order of the British Government,* 1862, Z/MC 804/1862/1, SLNSW; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1862, MAP T 86, NLA.

in order to examine how Arrowsmith constructed the environment. At the time, this natural feature was thought to be a horseshoe-shaped lake that occupied a large tract of land in northern South Australia. In present-day Australia, this is known as a region of saltwater lakes.

Lake Torrens was first discovered by explorer Edward J. Eyre in 1839 and soon became a prominent feature on the maps of Australia for decades afterwards. This natural feature provides a point of entry into contemporary discussions about the geography of the interior of the Australian continent. The hydro-geography of the interior was a subject of great interest at the time. Knowledge about the shape, extent and character of the waters in South Australia was important in terms of the plans for land use and settlement of the area.

The expeditions in the region led to the assumption that the waters that were encountered would connect to each other and form an extensive curved salt-lake. This understanding of the area's waterways first appeared as a small outline on some of Arrowsmith's general maps of Australia in 1840, in the wake of Eyre's expedition.[730] In the map of the eastern portion of the continent, which was published the following year, the feature has grown in size and is depicted in the shape of a horseshoe.[731] The outline of the lake is particularly well represented on the map, mentioned above, that depicts Eyre's route. The lake occupies approximately a quarter of the map and stands out in the otherwise blank interior of the coast.[732]

This representation of the map was predominant until 1846. Thereafter its outline is turned into a basin that is connected to Stony Desert. At this time, the understanding of its character as something other than a lake becomes apparent.[733] In the map published with Sturt's travel account, for example, the outline is accompanied with descriptions explaining that the lake consists of salt ponds, mud and sandy desert.[734] Explorers noted Arrowsmith's

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[730] Arrowsmith, J. *The maritime portion of South Australia,* 1840, MAP NK 2456/155, NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1840, MAP RM 783-2, NLA. However, the outline of the lake is not present on the map that was stated to have been published from the establishment located on Essex Street. See Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1840, MAP RM 4250, NLA.

[731] See, for example, the following maps: Arrowsmith, J. *Eastern portion of Australia*, 1841, MAP NK 2456/107B, NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1842, MAP RM 784, NLA; Arrowsmith, J. *Eastern portion of Australia*, 1842, MAP RM 922, NLA; Arrowsmith, J. *South Australia [...] 1844*, 1846, MAP RM 2625, NLA.

Arrowsmith, J. *Australia*, 1846, MAP RM 805, NLA. The lake is not visible on Arrowsmith's maps of the south-eastern portion of Australia. See, for example, Arrowsmith, J. *The South Eastern portion of Australia*, 1844, MAP RM 3010, NLA.

[732] "Map of the Southern Coast of Australia" in Grey to Russell 11 February 1842 no 13, f. 238, CO 13/24, TNA.

[733] See, for example, Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1848, MAP RM 785, NLA; Arrowsmith, J. *Eastern portion of Australia* 1847, MAP RM 4384, NLA; Arrowsmith, J. *Eastern portion of Australia* 1848, MAP T 84/2, NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1850, MAP RM 786, NLA.

[734] Arrowsmith, J. *Sketch map of Captain Sturt's tracks & discoveries [...]*, 1849, MAP T 115, NLA.

supposition about the connection between Lake Torrens and Stony Desert as they advanced in the field. Sturt debated the question on his Central Australian Expedition, for example, and his opinion was published in his travel account of 1849. Sturt concluded that he did not think it possible that the desert could change its course enough to connect with the lake, when detailing his own position in reference to the western shore of the lake that had been located by Eyre.[735]

In the section in which Sturt analyzed the results of expeditions that had taken place while he had been exploring the interior, he cited the data available from Kennedy's survey, which had been gathered during Mitchell's expedition in the Lake Torrens region: "[f]rom the general tendency of the rivers to fall to the south, it may be that the Stony Desert, as Mr. Arrowsmith supposes, has some connexion with Lake Torrens; but I think, for reasons already stated, that it passes far to the westward".[736] Sturt's notions make it clear how speculation and hypotheses were generated about the environment in Australia and were analyzed and compared to ideas that had already been expressed. On this particular occasion, it is evident how Arrowsmith's visualization of the region guided the way Sturt interpreted Kennedy's observations.

Consequently, Arrowsmith's maps emerge as significant sites of knowledge production. The cartographer's use of texts to map the different areas of the continent, together with his topographical visualizations, is noteworthy when examined in the context of the history of geographical knowledge. Arrowsmith used a similar technique when preparing maps of other parts of the world: descriptions of the character of land, the sources used and the reliance on indigenous informants are particularly visible on maps depicting regions being actively explored, such as the maps of Africa published by Arrowsmith in his atlas and on his maps of New Zealand.[737]

Alexander Schunka has examined the cartographical commentaries of German August Petermann, a contemporary of Arrowsmith, which were designed to be read alongside his maps. Schunka sees the commentaries as playing a crucial, yet understudied, role, in the process of transforming information into knowledge. These commentaries increased the legibility of the maps and channeled how a map was intended to be read: the accompanying texts facilitated the expression of extrapolated guesses by linking graphic features to the deduction process. Thus, they provide hints that can be used to understand the cartographer's intentions.[738] I suggest that Arrowsmith's use of textual descriptions functioned in

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[735] Sturt 1849, 129.
[736] Sturt 1849, 306. See also, "Review", *The Sydney Morning Herald,* 23 June 1849, 2.
[737] See, for example, Arrowsmith, J. "Africa", [1842], *The London Atlas of Universal Geography*, 1842, DRHMC; Arrowsmith, J. "North Western Africa", [1842], *The London Atlas of Universal Geography*, 1842, DRHMC; Arrowsmith, J. "Cape of Good Hope", [1842] The *London Atlas of Universal Geography*, 1842, DRHMC; Arrowsmith, J. "Egypt", [1842]. *The London Atlas of Universal Geography*, 1842, DRHMC; Arrowsmith, J. "The West Coast of Africa", [1843], *The London Atlas of Universal Geography*, 1842, DRHMC; Arrowsmith, J. *Map of the colony of New Zealand,* 1843, MAP T 89A, NLA; Arrowsmith, J. *Map of the colony of New Zealand,* 1844, MAP RM 474B (Copy 1), NLA.
[738] Schunka 2014.

a similar manner: they offered information that helped understand the graphic representations, guiding the user of the map to interpret the geography in a particular manner. Thus, they can be used as a starting point to evaluate what the graphic forms on the map were designed to mean: did they indicate that something was likely to exist in theory, or did they represent the shape, size and meaning of a feature that was well researched and already "known".

A comparison with the other maps that depict geographies of the interior helps to put Arrowsmith's representation of the inland and the Australian environment into perspective. The feature was represented by some cartographers of the time and it appears as an outline for the lake on the maps published by the Society for the Diffusion of Useful Knowledge, which had been formed to provide authoritative and inexpensive prints, and on the maps by the London-based James Wyld Junior and the Scotsman John Bartholomew (1831-1893).[739] In the case of Lake Torrens (and in general), the amount of geographical and descriptive data on maps stands in stark contrast to Arrowsmith's maps. Cartographers used words to describe the country, but they are far fewer when compared to Arrowsmith.

The lack of details and data can be seen as a reflection of Arrowsmith's access to the wealth of information arriving from the colonies. He had the opportunity to study the explorers' and surveyors' reports as he prepared maps for a variety of purposes. It is likely that other cartographers had more limited access to this material. Furthermore, they did not have a similar duty in representing the continent as did Arrowsmith, who was the semi-official cartographer for the colonies. With this in mind, he may well have felt that mapping Australia was one of his top priorities. James Wyld Junior, for example, who had succeeded his father as the owner of the family firm, prepared an extensive amount of railway maps and prospectuses in the 1830s. He was also an MP, who worked closely with Ordnance Survey, as well as building a globe of sixty feet in diameter for the International Exhibition at the Crystal Palace in 1851, which was subsequently exhibited in Leicester Square until 1861.[740]

Furthermore, the mapping of Lake Torrens as a prominent natural feature illustrates the processes of exploring the region and ideas about the character of the interior. Viewed in comparison to the general discussion about the character of the interior from the 1820s to the 1850s, one can note that Arrowsmith's maps did little to reflect the speculative geographies that were promoted. On the one hand, this was an era in which maps were perceived as reflecting empirical reality, but on the other hand it was also an age in which different theories were formed about the inland geographies of continents. Geographersa and cartographers aimed to calculate the likely courses of rivers in Australia, as well

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[739] See, for example, Society for the Diffusion of Useful Knowledge, *Australia in 1846,* 1846? [the accurate date is not known], MAP T 1149, NLA; Society for the Diffusion of Useful Knowledge, *The Australian colonies,* 185-? [the accurate date is not known], MAP T 1152, NLA; Wyld, J. *Map of Australia,* 1848, MAP RM 744 (Copy 1), NLA; Wyld, J. (1854). *Map of Australia,* 1854, MAP RM 780, NLA; Bartholomew, J. *Australia,* 1851, MAP RaA 12 Plate 2, NLA.

[740] Wallis 1977, 108; Baigent 2004d; Etherington 2004, 84.

as in other regions of the world.[741] Often the initial theories were mistaken. As a reviewer of John Oxleys's travel account published in 1820 vis-á-vis the directions of rivers in New South Wales aptly summarized the process by stating "that Nature will have her caprices in spite of hydrographers and map-makers—that she does not consult Mr Arrowsmith—and flows where she pleases (...)".[742] Indeed, numerous explorers and writers debated the character of the interior of Australia. Some, including the navigator, linguist and hydrographer George Windsor Earl (1813-1865); the author and East India Company officer Thomas J. Maslen; the lawyer and advocate-general of Western Australia, George Fletcher Moore (1798–1886); and the explorer Charles Sturt, argued for the existence of an inland sea, river networks and mountains in the interior. Others, especially Edward J. Eyre, disputed these views and claimed that the interior was merely a barren desert.[743] What lay in the Australian interior stirred the minds of settlers in the Australian colonies, especially in the east. Consequently, the colonial press debated the different theories eagerly and published articles that discussed the hydro-geography of the continent and evaluated the theories presented by different actors. The views expressed were as wide-ranging as in the discussions between explorers and armchair geographers.[744]

However, in spite of the numerous oral and written discussions concerning these theories, in regard to the cartography of the Australian interior, maps were, in general, quite rare. Visualizations of an inland sea or a river network flowing in the interior, for example, can only be found on a few maps. Indeed, when one examines the maps that circulated between the civil servants working at the Colonial Office, as well as those that were published as parliamentary papers and those that were sold individually or were published in travel accounts or journal articles, it is evident that those that depicted large-scale theoretical speculations and hypotheses were uncommon. Only three such maps landed on the desks of the civil servants and they were authored by Thomas J. Maslen, Charles Sturt and Thomas L. Mitchell.

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[741] On these theories regarding the interior of Africa, see, for example, Dritsas 2011; Lambert 2014.

[742] *The Edinburgh Review, Or Critical Journal* 1820, 422. The refence was to Aaron Arrowsmith.

[743] See Maslen 1830; Moore 1837; Earl 1837; Eyre, *JRGS,* 1846, vol. 16, 200–211; Sturt 1849a, 252, 258, 272, 382; Sturt 1849b, 63, 129–130, 133. See also Reece 1992; Kennedy 2013.

[744] See, for example, the series of articles published *in The Sydney Morning Herald. "*Are the interior waters of Australia navigable?", *The Sydney Morning Herald* 15 March 1848; "Are the interior waters of Australia navigable? No II", *The Sydney Morning Herald,* 16 March 1848; "Are the interior waters of Australia navigable? No III", *The Sydney Morning Herald,* 7 April 1848; "Are the interior waters of Australia navigable? No IV", *The Sydney Morning Herald,* 24 April 1848; "Are the interior waters of Australia navigable? No V – River Murray", *The Sydney Morning Herald,* 16 May 1848; "Are the interior waters of Australia navigable? No VI – River Murray and Lake Alexandrina", *The Sydney Morning Herald,* 18 May 1848.

Thomas Maslen's map (engraved by Joseph Hullmandel) visualized the theories of the Australian continent put forward in his book *The Friend of Australia* published in 1830. The map was originally published in 1827. Maslen, T. *Sketch of the coasts of Australia and the supposed Entrance of the Great River principally designed to illustrate the Narrative of M. Baudins voyage on the West and N.W. coasts*, 1831, M2 804/1831/1, SLNSW.

The most famous of these was Maslen's map, which was the only one that was subsequently published. Maslen published this map in 1827 and it also appeared in his book, entitled *The Friend of Australia* (1830). The book describes a plan to colonize Australia and the accompanying map visualizes Maslen's hopes about the possibilities of the interior. It depicts a vast river network and multiple mountain chains in the interior.[745] Mitchell and Sturt's manuscript maps both arrived at the Colonial Office and were either archived there or at the RGS. On the one hand, Mitchell's skeleton map illustrates his theory about the similarity of the river networks in Australia and South America and functioned as the foundation for his plans, which he put together in 1831, to explore the interior of New South Wales in order to ascertain the extent of the territory's river networks. In Mitchell's view, it was highly possible that a large river might flow from the "Australian Alps" through the

[745] Maslen, T. *Sketch of the coasts of Australia [...]*, 1830, M1 804/1827/1, SLNSW. Also see, Maslen 1830. Maslen's maps arrived at the Colonial Office on at least two separate occasions. First, the map accompanied a letter by Maslen regarding the settelement in Western Australia in 1830. Second, the map was used to illustrate a plan to look for the traces of Ludwig Leichardt in 1850. For the maps see MPG 681, TNA; MPG 460, TNA.

continent to the northwestern coast. Mitchell's plan arrived in Britain with an accompanying letter from governor Ralph Darling, which explained the need to explore the interior. No signs indicate that the letter and sketch circulated outside the office.[746]

Sturt's manuscript maps, on the other hand, visualized his thoughts about the past and present geography of the continent after he returned disillusioned from the Central Australian Expedition in 1846. He was disappointed about the apparent nonexistence of an inland sea. Eight years later he produced another map that visualized the same ideas, but with more details in order to illustrate his views on Australian geography on the eve of planning a government-funded expedition in the north of the continent in 1854.[747]

All three maps bring to the fore the use of analogies in order to deduct the character of the interior. Previous European understandings of inland geographies informed speculations about the southern continent. The manner in which Arrowsmith represented Lake Torrens on his maps and the observations made by explorers hint at the ways he employed different types of material to prepare his maps. The construction of geographies by compiling information from explorers and travel accounts, as well as from indigenous peoples, was a process of comparison, induction and deduction. By comparing the sources produced by many, Arrowsmith was able to arrive at a well-founded, and, more importantly, a documented vision about the continent's geography. Preparing and updating maps, therefore, was a matter of making choices.

However, the preparation of the maps also depended on the actual techniques that were employed. The production of cartographies at the Arrowsmith map company involved engraving plates (normally on copper), or lithography. As Tony Campbell emphasizes, this usually means that the historian is left to consult the papers and the printed impressions that reflect the printing platform. As new data emerged and was considered sufficiently important to be included in the maps, the printing platform—whether it a woodblock, a copperplate or a lithographic stone—could be altered and thus new versions of the map could be produced. Amendments made to the platforms were irreversible. Thus, when changes were made, for example by erasing and re-engraving details in the copperplates or by cutting the image to the plate, the outcome is different than the original plate. Consequently, detailed examination can sometimes reveal the different states of a map that derived from the same plate.[748]

[746] Mitchell to Darling 19 November 1831 in Darling to Goderich 23 November 1831 no. 7, ff. 335–338, CO 201/221, TNA; Sketch to accompany Mitchell's letter to Darling 19 November 1831 in Darling to Goderich 23 November 1831 no. 7, f. 339, CO 201/221, TNA.
[747] The sketches prepared in 1846 most likely arrived in London as enclosures and were transmitted from the Colonial Office to the RGS for examination and were eventually stored in the map library of the society. See "Supposed Present State of the Continent" and "Supposed Former State of the Continent" in JMS/13/51, RGS. The sketch "Map of Australia illustrative of its Past and Present State" prepared in 1854 was produced in London and Sturt transmitted it to the Duke of Newcastle in May 1854. See MPG 487, TNA.
[748] Campbell 1989, 2–10.

In the case of Arrowsmith, Dorothy Prescott has identified different versions of his company's maps of Australia, which were published in *The London Atlas of Universal Geography*, that derived from the plates he employed. In total, the different editions of Arrowsmith's atlas, which he published in a "bespoke" style by preparing custom-made bindings, included fifteen different maps of Australia.[749] The maps depict the whole continent, as well as representations of the eastern and western areas, alongside larger scaled maps of the different colonies, portions of the coast and individual districts.[750] Prescott's analysis of the maps highlights how Arrowsmith used the different plates and thus offers a guide to examining the changes that took place in his maps. Prescott emphasizes that Arrowsmith compiled the maps of the whole continent that were published in his atlas and which were sold separately from two different plates that he used to print the eastern and western portions of the continent on separate sheets. He did this by either joining them together or leaving them on their own.[751]

The line of convergence runs along the 134th eastern meridian and is visible in the position of the numbers printed: the numbers indicating the latitudes are not always at the same level when one examines the general maps. On some maps Arrowsmith even inserted "joining line".[752] Prescott notes that the practice of joining the sheets together impacted the way Arrowsmith was able to update his general maps of the continent. Arrowsmith did not update the sheets that were joined at the 134th eastern meridian. Prescott notes that this technique made it possible to print the separate sheets and bind them together. Thus, it is possible that a matching east or west sheet might not exist. Consequently, Arrowsmith was unable to update these areas as quickly as might have otherwise been possible. This is one reason why Arrowsmith's maps were slow to adopt the latest information regarding the central areas on the southern and northern coasts.[753]

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[749] Prescott 2012b. Herbert emphasizes that it would be cumbersome to refer to different "editions" of the *Atlas* as Arrowsmith simply added extra plates to different editions without updating the list of contents and documenting the additions in any way. See Herbert 1989, 104.
[750] For a list of the maps included, see Prescott 2012q.
[751] Prescott 2012g.
[752] See, for example, Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1846, MAP NK 10749-2, NLA.
[753] Prescott 2012g.

The eastern portion of Australia by John Arrowsmith published in 1842 shows the outline of Lake Torrens. Arrowsmith used the plate of this map to prepare maps of the whole continent by combining the sheet with the sheet depicting the western side of the continent. Arrowsmith, J. *Eastern portion of Australia,* 1842, MAP RM 922, NLA.

Prescott notes that preparing new versions of the map in a short period of time was connected with the way Arrowsmith worked. First, he inserted the hydrographical features and afterwards—usually in the next state—added topographical data and the names of the places. This is evident from the general map of 1841 and the two different states of the east sheet that Arrowsmith prepared.[754]

This technique meant that Arrowsmith initially inserted the route when he sought to depict Lake Torrens and its connection to the desert as encountered by Sturt.[755] In the next version of the map Arrowsmith added a great deal of new data about the topography and the hydrography of the country and connects the desert to the lake.[756] In the next two states, Arrowsmith adds further topographical details,[757] and then alters his view on the lake. It becomes a basin that is connected to the desert with a form marked with fine dots.[758] This is the version in which Arrowsmith depicts the area in the map that was published in Sturt's account, although with greater detail.[759] In the later versions, that were published in the 1850s, this representation remains. By the beginning of the 1860s, when the results of the expeditions undertaken by teams led by men like Goyder, Babbage, Warburton Stuart and Burke and Wills became available, maps depict the lake as being broken into pieces and Stony Desert as a defining feature of the area fades away.[760]

This sequence of maps demonstrates that it is important to focus on how Arrowsmith incorporated new information in his maps when it became available. It is even evident in the large-scale maps produced by Arrowsmith that he did not include every observation documented by the explorers and surveyors. Consequently, a crucial question concerns how he made his choices: how did Arrowsmith employ different types of sources to compile his representation of the Australian environment? What information did he trust and what implications did these choices have? As his maps were extensively used by different actors, what he chose and what he decided not to represent, mattered in terms of the conceptualization of the Australian environment.

Arrowsmith's construction of the Australian environment in his maps and his compilation of data in these documents was commented upon on multiple occasions. Some of the discussion vis-à-vis Arrowsmith's maps occurred in letters and newspaper articles and they offer deeper insights into how geographical knowledge about the Australian continent was established through Arrowsmith's maps. The authoritative status accorded to Arrowsmith's maps is reflected in the frequency with which they were cited as points of reference in articles published in colonial newspapers. In these newspapers, Arrowsmith was

[754] Prescott 2012h. A similar practice can be noted in the 1847 plates. See Prescott 2012i; Prescott 2012j. Prescott has identified that Arrowsmith produced at least twenty-one versions of the eastern sheet and sixteen editions of the western sheet for his atlas between 1838 and 1863.
[755] Arrowsmith, J. *Eastern portion of Australia*, 1847, CUL. Accessed via Prescott 2012i.
[756] Prescott 2012i; Arrowsmith, J. *Eastern Portion of Australia*, 1847, MAP RM 4384, NLA.
[757] Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1848, MAP RM 785, NLA.
[758] Arrowsmith, *Eastern portion of Australia*, 1848, MAP T 84/2, NLA. Prescott suspects that the map might have been published in 1849. See Prescott 2012k.
[759] Arrowsmith, J. *Map of Captain Sturt's route [...],* 1849, MAP NK 2456/157, NLA.
[760] Compare the following Arrowsmith, J. *Eastern portion of Australia,* 1858, MAP T 1441/2, NLA; Arrowsmith, J. *Eastern Portion of Australia*, 1861, private collection of Charles Morgan, accessed via Prescott 2012n; Arrowsmith, J. *Australia from surveys made by order of the British Government*, 1862, Z/MC 804/1862/1, SLNSW.

referred to as an "indefatigable geographer",[761] for example, as well as the "critical Arrowsmith",[762] and as a "clever manufacturer of maps".[763] Similarly, in these articles his maps were praised for their accuracy, beauty and execution. Indeed, they were tagged on occasions as being "unrivalled", which reinforced the cartographer's position as one of the leading authorities in his field.[764]

These newspapers also document how the publication of new maps was a much-anticipated event. Arrowsmith's new works and their preparations were even reported in the newspapers.[765] Simultaneously, the ability to purchase these publications was advertised alongside all the other maps that were being sold.[766] Once new maps and atlases reached the colonies, the chance to purchase them was publicized in advertisements and announcements.[767] It is likely that Arrowsmith had particular agents that sold his maps in the colonies. A notice was published in *The Argus*, for example, which documents that Melbourne Sands and Kenny advertised themselves as the "appointed agents for Mr. Arrowsmith's publications".[768] It is difficult to determine how many maps or atlases were available for purchase and the numbers were bound to alter as the decades passed. The advertisements record how on the one hand only few copies of for example Ludwig Leichardt's travel accounts with Arrowsmith's maps were available for purchase in the 1840s.[769] However, in the 1850s Sands and Kenny advertised that they had a surplus of copies of Arrowsmith's

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[761] "The North-West Passage", *The Sydney Morning Herald*, 31 January 1854, 4.
[762] "Leichardt and the Desert", *The Sydney Morning Herald*, 5 August 1858, 3.
[763] "Squatters and Landholders" *The Weekly Register of Politics, Facts and General Literature,* 22 March 1845, 133.
[764] See, for example, "The Sydney Herald. Monday, July 8, 1833.", *The Sydney Herald,* 8 July 1833; "The Australian Colonies", *Southern Australian* 22 March 1844; "Literary Notice", *The Maitland Mercury and Hunter River General Advertiser,* 9 February 1848;"Advertising", *Geelong Advertiser and Intelligencer,* 9 February 1856: 1.
[765] "Squatters and Landholders" *The Weekly Register of Politics, Facts and General Literature,* 22 March 1845, 133; "Wheat and Guano." *Adelaide Observer* 10 May 1845, 6; "Advertising", *Adelaide Observer,* 11 April 1846, 1; "Abstract of Sales by Auction. This Day", *The Sydney Morning Herald,* 15 December 1847, 2; "Sydney News." *The Maitland Mercury and Hunter River General Advertiser,* 18 December 1847, 4; "Review" *The Sydney Morning Herald,* 24 December 1853, 7.
[766] "Classified Advertising", *The Sydney Gazette and New South Wales Advertiser,* 27 July 1833, 1; "Classified Advertising", *The Sydney Gazette and New South Wales Advertiser,* 30 July 1833; "Advertising", *South Australian Gazette and Colonial Register,* 13 February 1847, 2; "Classified Advertising", *The Moreton Bay Courier,* 12 February 1848, 3; "Advertising", *Adelaide Times,* 19 March 1849, 3; "Advertising", *South Australian Gazette and Mining Journal,* 16 August 1849, 1; "Advertising", *The Sydney Morning Herald,* 27 February 1852, 3; "Advertising", *The Sydney Morning Herald,* 16 July 1852, 3; "Advertising", *Empire,* 4 May 1854, 1; "Advertising", *The Sydney Morning Herald,* 5 May 1854, 6.
[767] See, for example, "Advertising", *The Sydney Morning Herald,* 30 April 1849, 4; "Advertising", *Empire,* 27 February 1852, 1; "Advertising", *South Australian Register,* 14 March 1856, 4; "Advertising", *The Sydney Morning Herald,* 29 April 1854, 8; "Advertising", *South Australian Register,* 25 February 1856, 3; "Advertising", *South Australian Register,* 24 March 1856, 3; "Advertising", *The Age,* 12 July, 1856, 1.
[768] "Advertising", *The Argus,* 8 July 1858, 6.
[769] For a similar example, see the advertisement by John Sands regarding Arrowsmith's maps of Ludwig Leichardt's route. See "Advertising", 1 February 1848, *The Sydney Morning Herald*, 3.

maps and therefore they could sell the maps at a reduced price.[770] In addition, the colonies had a market for smaller maps reduced from Arrowsmith's original maps.[771]

Once the new maps reached the colonies they were often presented to the public with a short review that commented on the execution of the maps. In 1833, for example, after Arrowsmith's new map of the colony of New South Wales had been examined by the reporters of *The Sydney Herald*, they described its contents to their readers. They noted its superior style, in particular, in comparison to the previous maps they had seen.[772] The popularity and availability of his maps make them especially interesting. It can be noted, for example, that it is possible, on occasions, to trace some of the discussions about the representations that became contested. Indeed, in addition to noting the publication of new maps and describing the maps on a general level, the colonial press also paid attention to their content. Thus, an examination of how the maps were analyzed and commented upon provides some clues about how Arrowsmith's maps were consumed and discussed in the colonies.

Two discussions regarding the representation of environmental features in Arrowsmith's maps stand out in the colonial press. The first discussion relates to Port Grey, which Arrowsmith inserted in his map as a result of the expedition led by George Grey and lieutenant Franklin Lushington to the north-western coast of Australia between 1837 and 1839. In 1841, captain John L. Stokes was commissioned to inspect the port site and to ascertain if Grey's description was accurate.[773] As a result of this survey, Stokes rejected Grey's claim about a port, thereby casting serious doubt on the entire collection of data of the area supplied by Grey. Indeed, Stokes's analysis provoked a discussion about how the port had appeared on Arrowsmith's map in the first place. The apparent error in the published map by Arrowsmith led to discussions about the reliability of maps in general. Indeed, the way Grey had reported about the fertility of the area and located a highly valuable site on the coast created anxiety among the shareholders of the Western Australian Colonization Company.[774] The issue was widely reported in the newspapers in every Australian colony, but was particularly keenly felt in Western Australia, where articles were printed reporting the results of Stokes's survey. Newspapers in this region also analyzed the matter and reported how the issue was being addressed in the other colonies.[775] The articles

[770] See, for example, "Advertising" *The Age*, 9 July 1856: 1.
[771] "Advertising" 6 April 1846, *The Sydney Morning Herald*, 3. The price was 1 s 6 p.
[772] "The Sydney Herald. Monday, July 8, 1833", *The Sydney Herald,* 8 July 1833, 2. For similar reviews of Arrowsmith's maps see, for example, "Australian sketches no III", *The Sydney Monitor*, 17 July 1833, 4. In a similar manner, the maps Arrowsmith produced for the published travel accounts were commented upon by the journalists. See, for example, "Review", *The Sydney Morning Herald,* 23 June 1849, 2.
[773] Bolton 1967; "The Inquirer. Wednesday, December 22, 1841", *Inquirer,* 22 December 1841, 2.
[774] "Grey, Sir George (1812–1898)" 1966.
[775] "Expedition of the Beagle to Port Grey", *The Inquirer,* 22 December 1841; "Visit to the Country adjacent to Champion Harbour, Reported to be Port Grey, and Examination of the Coast Line to the Northward", *The Perth Gazette and the Western Australian Journal,* 25 December 1841; "The Inquirer. Wednesday, September 20 1843", *Inquirer*, 20 September 1843.

printed outside Western Australia were mainly reprints of those published in this region. This was not the case with the press in South Australia, where Grey was governor, as they published original articles.[776]

The discussions principally related to Arrowsmith's map documenting Grey's route from Gantheaume Bay to Arrowsmith River. This map was published in Grey's travel account in 1841 as an individual map. It was also printed as an inset map in *Australia, from Swan River to Shark Bay embracing Australind with Port Grey*, which was published in 1840 and printed again in 1841. The title documented how it had been compiled from Grey's surveys, as well as from other official documents.[777] The port also appeared on Arrowsmith's general map of Australia: first, in 1840, as a bay where the Greenough River met the sea, and, in 1842, Arrowsmith situated it further north as a result of studying Stokes's survey data.[778]

It appears that the press in Western Australia took two different stances regarding the matter. An anonymous author of *The Inquirer* argued that Grey had purposefully deceived the public and caused much confusion. An article that was published in late December 1841 analyzed in detail the map, as well as the accounts of Grey and Stokes, and concluded that the former had deliberately misrepresented his data. In Arrowsmith's defence, the author of the article remarked that his map included sites that relied upon Grey's testimony. Indeed, Arrowsmith inserted a textual description in the vicinity of the area with a reference to Grey's information and sketch.[779]

The author further contemplated how the matter should be resolved and discussed the implications of inaccuracies present in the map. He argued that great measures needed to be taken: "it behoves us to call attention to the reckless manner in which places have been marked down that have no real existence, and to expose the carelessness (to make use of no harsher word) of those who have foisted this fable of Port Grey." [780] Consequently, it was necessary to deduce how a port that did not exist could have been inserted into the map. In the view of the writer, the matter was pressing as the discovery of this false information affected the way the British public trusted information deriving from Western Australia.[781]

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[776] See, for example, "Swan River. Expedition of the "Beagle" to Port Grey", *The Courier,* 11 March 1842; "Visit to the Country Adjacent to Champion Harbour, Reported to be Port Grey, and Examination of the Coast Line to the Northward", *Australasian Chronicle*, 12 March 1842, 4; "Western Australia", *Southern Australian* 18 March 1842; "Progress of Discovery", *Geelong Advertiser,* 21 March 1842, 1; "The Expedition of the Beagle", *The Colonial Observer,* 23 March 1842. The matter was discussed again once Captain's Stokes's travel account was published in 1846. See, for example, "Captain Stokes's Discoveries", *The Sydney Morning Herald* 25 November 1846.

[777] Grey 1841.

[778] See Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1840, MAP NK 2456/107A, NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1842, MAP RM 924, NLA.

[779] "The Inquirer. Wednesday, December 22, 1841." *Inquirer,* 22 December 1841, 2.

[780] "The Inquirer. Wednesday, December 22, 1841." *Inquirer,* 22 December 1841, 2.

[781] "The Inquirer. Wednesday, December 22, 1841." *Inquirer,* 22 December 1841, 2.

The Perth Gazette took a different view, noting that it appeared that Champion Bay was likely the site that had mistakenly been referred to as Port Grey. Still, it was necessary to explain why Arrowsmith had been guided to compose such a chart, replete with the misplacement of reefs and giving false information about the sounding of sites and places. In an article published shortly after the one that appeared in *The Inquirer*, the writer discussed how Grey should not be blamed for misrepresenting the coastline, as he was not in possession of any observations. He had apparently gained his information from a whaler, "whose random sketches, we strongly suspect, have founded the basis of the erroneous representations which have appeared".[782] Consequently, instead of blaming Grey, the writer noted that it was the "Australind Company", that is, the Western Australian Company in possession of the Australind land grant, which must have misrepresented the information obtained from Grey. The writer ended the article by urging readers to compare the data before them and draw their own conclusions concerning "anything approaching to the unwarranted charge of *willful* misrepresentation of facts".[783]

The discussion continued in *The Inquirer*. The map composed by Arrowsmith was viewed as being a key element in the subsequent discussion. The value of Arrowsmith's map was largely dependent on the fact that it was assumed that Grey had visited the locality that was depicted. Consequently, the fact that the information and observations made by Grey had been depicted on a map—even if they derived from a whaler—was deemed to be no excuse. Grey had sanctioned the map and facilitated the deception.[784]

An analysis of the false information on Arrowsmith's maps is interesting as it demonstrates how the function of maps and the role of the mapmaker were understood. Both *The Inquirer* and *The Perth Gazette* seemed to assign to Arrowsmith the role as a passive compiler of data. Indeed, either Grey or the Western Australia Company was held responsible for the data they had provided to Arrowsmith. In May 1842, *The Inquirer* noted how the new edition of Arrowsmith's map had rectified the error of Port Grey, as it had been moved further north and identified with Champion Bay. This was indicated in the survey by Charles Darwin and the crew of *The Beagle*. However, the Greenough River and the area close to it, that Arrowsmith described as "a rich country", was depicted according to Grey's data. This contradicted Stokes's assertion that the area was worthless. Consequently, Grey's false information continued to haunt Arrowsmith's maps, which in the view of the writer was "another awkward circumstance for Captain Grey".[785] Accordingly, Grey was blamed for the errors on the map, not Arrowsmith.

This instance illustrates how maps were read as reflections of the reality that was documented by explorers. It reveals the anxieties felt when noticing how plans for colonial

[782] "The Western Australian Journal." *The Perth Gazette and the Western Australian Journal,* 25 December 1841, 2.
[783] "The Western Australian Journal." *The Perth Gazette and the Western Australian Journal,* 25 December 1841, 2. Emphasis in original.
[784] "The Inquirer. Wednesday, December 29, 1841." *Inquirer,* 29 December 1841, 2.
[785] "The Inquirer. Wednesday, May 11, 1842." *Inquirer,* 11 May 1842, 3.

action were dependent on deliberately fabricated data. As such it demonstrates that what was at stake in the discussion was the ontological character of the map and its assumed correspondence with the world, correspondence upon which "any claims about 'cartography and mastery' must depend" as Graham D. Burnett puts it.[786] Having maps with fabricated harbors not only questioned the correspondence but also undermined the position of maps as ways of knowing and consequently of "mastering" the area.

Secondly, a discussion arose regarding how Arrowsmith situated the mouth of Glenelg River on the western side of the 141st meridian, which marked the boundary between Port Phillip, a county in New South Wales, and South Australia. The importance of locating the meridian line that marked the boundary between the colonies rested on the ability to organize the administration in the area. The location of the boundary was of concern for the New South Wales government in terms of the organization of the police force in the area.[787] The efforts to locate the meridian provoked discussion in New South Wales, in particular, after the surveyor Charles Tyers (1806-1870) executed a triangular survey at the behest of governor George Gipps of New South Wales in 1839. As a result of the survey, Tyers placed the mouth of the river a little bit to the east of the meridian. Governor Gipps reported the results to London in September 1840 and the civil servants then made the new data known to Arrowsmith.[788] In his previous maps of Australia, Arrowsmith located the mouth of the river in South Australia, which was at odds with the conclusions of Thomas L. Mitchell, the Surveyor General of New South Wales.[789] Arrowsmith had to make a choice when reading Tyers's data and going through the tracings he had sent: whether to trust the conflicting information he had at his disposal or to disregard these findings. In Arrowsmith's view, Tyers's observations were not sufficient to urge him to relocate the position of the meridian line. Thus, he did not alter its location on his maps.[790]

When he published a new map in 1840, in which no alterations had been carried out, Arrowsmith had to respond to harsh criticism that resulted from his choices. *The Times* also engaged in the discussion in Britain, as it published an article about the progress of discovery in Australia and commented on the location of the meridian in Arrowsmith's new map, which had been published under the authority of the South Australian Company. The

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786 Burnett 2009, 187.

787 This point is mentioned in a newspaper article documenting the proceedings of the legislative council of New South Wales. "New Zealand" *The Sydney Gazette and New South Wales Advertiser* 16 November 1839, 2.

788 Gipps to Russell 28 September 1840 no. 139. CO 201/299, ff. 146-165, TNA; A minute by Stephen 19 February 1841 in Gipps to Russell 28 September 1840 no. 139, f. 169, CO 201/299, TNA. The dispatch was accompanied by many maps which have been examined to a certain extent in section 3.1.1. in relation to the printing of Gipps's dispatch for the parliament.

789 The mouth of the river is situated on the eastern side of the 141st meridian in, for example, the map published in volume 1 of Mitchell's *Three expeditions into the interior of Eastern Australia*. For the map, see plate 40 "The south eastern portion of Australia showing the routes of the three expeditions and the surveyed territory" in Mitchell 1839. See also Mitchell, T. *The south eastern portion of Australia*, 1838, MAP NK 1476, NLA.

790 "To The Editor Of The Times." *The Times* [London, England], 3 April 1841, 6.

article in *The Times* noted that Tyers had come to a different conclusion than Arrowsmith.[791] The same article was reprinted in colonial newspapers and the matter was consequently discussed throughout 1841.[792]

In response, Arrowsmith wrote a letter in April 1841 to the editor of *The Times*. The letter offers multiple insights into his methodology. First, Arrowsmith noted that the map was solely authored by him and that the South Australian Company had not participated in any way. Secondly, Arrowsmith explained that the observations made by Tyers were simply not enough to be used as the basis of a major decision.[793] The letter was reprinted in Australia in several newspapers.[794] In addition, articles were printed about Arrowsmith's view on the matter. A short notice was printed, for example, in *The Geelong Advertiser*, noting that Arrowsmith argued that Tyers had miscalculated by about three miles.[795]

The criteria for credibility was at stake in the discussion about the location of the boundary line; a theme that has been much researched in the history of science. The particular characteristics of an observer had the potential to improve their credibility. As Dritsas points out, the process of evaluating the credibility of claims depended on *where* the claim was made and by *whom*.[796] Arrowsmith relied on this strategy in his argumentation by pointing out that he was able to compare and contrast Tyers's observations with others that were available and thereby consider their significance in regard to the whole picture.

After reading Arrowsmith's explanation, Tyers responded by writing a short letter to the editor *of The Port Phillip Patriot*, in which he sought to justify his point of view. Tyers pointed out that Arrowsmith's argument about the uncertain position of Sydney was not valid, as it was accurate at the time. Tyers noted that even though past explorers would have had accurate information about the location of the meridian, their instruments had not been as precise contemporary devices. Furthermore, Tyers argued that the lunar tables used by Arrowsmith were full of errors. He posited that the variation seemed to arise from "the difference of longitude between Sydney and Melbourne", which he thought he could prove in his favor. Indeed, Tyers argued that the sources he had used to determine the position of the longitude were more accurate than those used by Arrowsmith. He concluded his letter by asking "how Mr. Arrowsmith can have ascertained the longitude of the mouth of the Glenelg? Upon what data has he gone?" It was clear that Arrowsmith had not

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[791] "Among the papers within the last week laid upon." *The Times* [London, England] 30 March 1841, 5.

[792] See, for example, "Late Discoveries in Australia" *Australasian Chronicle* 17 July 1841, 3; "English Extracts. Late Discoveries in Australia. From the Times" *The Sydney Herald,* 21 July 1841, 1; "English Extracts", *The Sydney Herald,* 17 August 1841, 4; "Progress of Discovery and Occupation of the Colony of New South Wales", *The Sydney Gazette and New South Wales Advertiser,* 19 August 1841, 4.

[793] "To The Editor Of The Times." *The Times* [London, England], 3 April 1841, 6.

[794] "South Australian Boundary Line", *Port Phillip Patriot and Melbourne Advertiser,* 29 July 1841, 2; "Boundary of New South Wales", *The Sydney Herald*, 16 August 1841; "Boundary of New South Wales", *South Australian Register,* 18 September 1841.

[795] "Local Intelligence" *Geelong Advertiser* 31 July 1841, 2.

[796] Dritsas 2011, 272-273.

used the information produced by Thomas Mitchell, which was the only available data he could have drawn on.[797]

Tyers's questions were relevant, especially when considered in the context of the cartographical dispute between Mitchell and Arrowsmith. Mitchell had located the mouth of the river in South Australia as a result of an expedition he had undertaken in 1836. However, at this time Arrowsmith had requested that the longitude be altered. In 1838, Mitchell complained to the secretary of the RGS about difficulties he had encountered in working with Arrowsmith: he accused the map-maker of being slow and had even requested an alteration to the longitude Mitchell had determined. In Mitchell's view, Arrowsmith was doing whatever he pleased with the map. On a personal note, Mitchell was upset at not receiving the recognition he felt he deserved vis-à-vis the data he had collected about the location of the mouth of the river.[798]

Mitchell returned to this contentious issue some thirteen years later, when forwarding an updated version of his map of New South Wales to the president of the RGS. In an accompanying note, he stated that he could now prove that the alterations Arrowsmith had made in the late 1830s, regarding the location of the mouth of Glenelg River, had been inaccurate. He protested that his data had been correct all along. Furthermore, Mitchell commented on a recent alteration Arrowsmith had made in the course of Belyando River in the tropical region of Queensland. He wondered how the members of the council had allowed Arrowsmith to alter his "accurate material", especially as he had given the council (and Arrowsmith) the opportunity to study his methods and data.[799]

In general, the disagreements between Arrowsmith and Mitchell were ostensibly methodological and demonstrate something of the principles Arrowsmith adhered to when constructing his maps. It appears that Arrowsmith did not approve of Mitchell's techniques of surveying and determining locations. This is evident from a report he wrote in 1849 on a paper by Mitchell, in which he explained the surveying methods the explorer had employed on his expeditions. Arrowsmith's report is very critical and denounces Mitchell's methodology as being unreliable. He did not recommend that Mitchell's article should be published in the journal. In Arrowsmith's view, the method Mitchell termed triangulation was "no Triangulation at all" and consequently put into doubt the reliability of his entire methodology.[800] Arrowsmith was not alone with his opinion: Dane Kennedy for example documents how for example William D. Cooley (1795?–1883), a notable 'armchair-geographer', questioned the accuracy of Mitchell's surveys in his personal correspondence.[801] As a result,

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[797] "Position of the 141st Meridian", *The Sydney Monitor and Commercial Advertiser,* 1 October 1841, 4.
[798] Mitchell to Washington 9 June 1838, CB2/359, RGS.
[799] Letter to the Secretary of the RGS 19 January 1851, CB4/1184, RGS; Mitchell to the President of the Royal Geographical Society 21 January 1851, CB4/1184, RGS.
[800] Referee report by Arrowsmith April 1849, JMS13/56, RGS. See also Mitchell, Account of Mode of Survey in New South Wales, JMS 13/56, RGS. Also see, Kennedy 2013, 46-47.
[801] Kennedy 2013, 46.

Mitchell's manuscript was not published. This riled the explorer, who later commented that this decision was quite peculiar.[802]

The debates between Arrowsmith, Tyers and Mitchell are illuminating in terms of the knowledge-making processes that took place in the context of metropolis-colonies networks. They provide evidence of how knowledge was contested and negotiated. Furthermore, they highlight the role of maps in these debates, in terms of the critical importance attached to interpretations of what they represented. These discussions were influential in shaping colonial policies. As Charles W. J. Withers points out, these types of methodological debates were common in the field of exploration and surveying. Questions relating to the credibility of the observations, measurements and deductions made by the men in the field were particularly common. The transmission of impressions from faraway realms to a British audience was not straightforward, even though the ideals of observational documentation were largely shared by geographers, cartographers and men of science. Yet, the methodological basis of producing geographical knowledge was not fixed at this time. The correct way of making notes and instructions regarding the correct usage of instruments was urged in numerous guidebooks published in the mid-nineteenth-century and was promoted by the RGS .[803]

It is necessary to stress, however, that the knowledge presented by both sides in these debates was complimentary rather than exclusive. This is exemplified by discussions surrounding the location of the mouth of Glenelg River. Lawrence Dritsas has noted that the differences in method and opinion that existed between critical geographers and explorers should not be overly dichotomized. The knowledge presented by both sides was considered when formulating and publishing geographical information about different areas of the world.[804] This point is valuable in the context of cartographical debates in both London and the colonies. The constant circulation of material between the colonies and Britain linked these places together and constituted the processes of forming geographical knowledge.

In addition to making explicit the discussions relating to Arrowsmith's choices in the construction of the Australian environment on maps, a more fundamental question centers on the usefulness of his maps. This stems from their semi-official status and the practicability of working with Arrowsmith in Britain to produce cartographies of the colonies. As noted in the previous chapter, Arrowsmith's maps were also used at the Survey Departments. Indeed, at times they were the only published maps available for some colonies. For example, shortly after a commissioner had been appointed by the Executive Council in New South Wales to examine the state of the Survey Department, the wretched state of the

[802] Mitchell 19 January 1851, RGS/CB4/1184, RGS.
[803] Withers 2013.
[804] Dritsas 2011, 272-273.

maps of the colony was considered at the Legislative Council of the colony in July 1855.[805] During this session, the merchant and pastoralist Stuart Alexander Donaldson (1812-1867) proposed that the maps at the Survey Department should be made public in order to enable everyone interested to be familiar with the data regarding the surveys of the interior. He also argued that this would provide private individuals with the means to publish the tracings and maps.[806]

Donaldson urged that all the maps possessed by department should be open to the public in order "to make the world acquainted with the colony, its extent and quality". In his view, the maps of the colonies produced by Arrowsmith were not sufficient: "He had no doubt that Mr. Arrowsmith had constructed for the public use very excellent maps, and that they were as correct as the information offered him could enable him to make them, but they were not official maps".[807] The only other map available at the time was Thomas Mitchell's representation of the nineteen counties in New South Wales. This map had been updated, but was still inaccurate in many parts. New surveys were needed, as well as new maps. The record of the debate printed in *The Sydney Morning Herald* demonstrates that Donaldson's proposition was seconded.[808] The motion was quickly carried into effect as the governor started to organize the engraving and lithographing of the maps in order to provide the public with "authoritative information".[809] Further changes were made after the death of Mitchell, based on the recommendations of the commissioner. He advocated the overhaul of the management strata of the Survey Department, which was adopted under the leadership of George Barney (1792–1862), who succeeded Mitchell.[810]

The concerns expressed by Donaldson make explicit the anxieties felt about the practices of constructing maps in regard to general discussions about the cartographic image of the Australian continent. For the likes of Donaldson, Tyers and the Western Australian press, the crucial question related to the quality of information that was made available for the production of maps, as well as how they were communicated to the public. The influential position of Arrowsmith's maps, in terms of constructing the Australian environment, was evident in Britain as well as in the colonies. In having access to data from different

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[805] The appointment was made at a meeting of the Executive Council in May 1855. See "Proceedings of the Executive Council with respect to the appointment of a Board of Enquiry into the working of the Survey Department. Extract from Minute no. 55/15 dated 1 May 1855" in Denison to Russell 13 October 1855 no. 163, 299-300, CO 201/486, TNA. See also "Governor General's Minute to the Members of the Executive Council" in Denison to Russell 13 October 1855 no. 163, 303-305, CO 201/486, TNA. The enquiry concluded in the fall of 1855.
[806] Tuesday 3 July 1855, nos. 12, 2, Votes and Proceedings of the Legislative Council.
[807] "Legislative Council", *The Sydney Morning Herald* 4 July 1855, 4; Tuesday 3 July 1855, nos. 12, 2, Votes and Proceedings of the Legislative Council. Compare with the discussion regarding the expediency of having Arrowsmith engrave the maps of the colony in Britain that took place in Victoria in 1853. See "Legislative Council", *The Banner,* 1 December 1853, 6.
[808] " Legislative Council" *The Sydney Morning Herald*, 4 July 1855, 4.
[809] "Legislative Council." *Empire* 14 July 1855, 3. See also Message No. 35, concerning publication of maps and plans of the Interior, Friday July 13 1855, First Legislative Council Archive, Parliament of New South Wales.
[810] Denison to Russell 13 October 1855 no. 162, 287-288, CO 201/486, TNA.

actors, the cartographer was able to compile good quality maps that were widely distributed. The cases of Grey and Tyers offer interesting insights into how Arrowsmith selected what he inserted in his maps. In Grey's case, Arrowsmith chose to include a detail that derived from one observation. In Tyers's case, Arrowsmith rejected the new data and explained that he felt the individual observations were inadequate. Arrowsmith's map of the north-western coast created an incentive to rethink what had hitherto been planned by the colonial authorities. The differing opinions regarding the relative position of the meridian in relation to Glenelg River resulted in a debate that lasted for several decades. In the case of the surveys of New South Wales, Arrowsmith's maps collated the latest data. However, their semi-official status was perceived in a negative light by some. What was wanted in the colonies was direct and quick access to the "raw material". This entailed the aim of reorganizing the practices employed in local map production and no longer being reliant on the elongated compilation and construction work by Arrowsmith.

To conclude, my examination of Arrowsmith's way of constructing the Australian environment brings to the fore not only his dominant position but also how his maps were an instrumental part of the processes of knowledge formation. Arrowsmith's maps synthesized and generalized information through graphic representation. Importantly, however, they did it simultaneously through the extensive amount of textual descriptions that the maps contained. Consequently, Arrowsmith and his maps emerge as important knowledge-brokers. As a result of Arrowsmith's knowledge-work a simplified geography of the continent became available. The knowledge that his maps represented, however, was in no way objective, but the result of constant processes of selection. The choices that the cartographer made discussed in this section evince how these selections were constituted by the availability of the right material, questions of credibility and personal preferences. With these points in mind, I will now proceed to the last section of this chapter and investigate how Arrowsmith's maps participated in the territorialization of the Australian continent.

Mapping North Australia: Constructing Territories on Maps

Arrowsmith's maps not only synthesized information regarding the Australian environment, but also serve as a stepping stone in the investigation of how cartography participated in the establishment of the political geographies of the Australian continent. As exploration extended around the continent, different sites emerged as attractive locations for the establishment of new colonies and settlements. The continent emerged as a lucrative target for geopolitical planning once it had been circumnavigated. As a result, different territorial schemes flourished in the mid-nineteenth century, which made explicit how extending control over Australia was framed within the goal of delineating new territories.

The establishment of new settlements had implications for the political geographies that developed, and consequently for the conceptualization of the continent as a whole. The maps produced by cartographers contributed to the processes of constructing the physical geography of the continent. Moreover, the cartographers participated in the process of constructing the boundaries of the colonies. The construction of political geographies by representing the boundaries of the colonies and naming the territories differs from the construction of physical geographies. Yet, in essence, the fundamental aspects are the same: the circulation of knowledge vis-à-vis the decision-making process conditioned what could be represented.

The references made by the civil servants regarding the information that should be communicated to Arrowsmith included name changes, disclosure of recent discoveries, and the new counties, pastoral districts and runs that had been established. However, I have not come across any references that record the need to inform Arrowsmith about the territorial decisions – the establishment of new colonies – that were made. This does not mean that Arrowsmith was not informed about these decisions, but it makes it considerably more challenging to deduce what he actually knew and how interested he was in these matters. We can only examine the maps that Arrowsmith produced, which can be critically analyzed in reference with the decisions made by the colonial administrators regarding Australian territories. In so doing we are able to discern how small-scale maps were used in the process of making political geographies in the context of colonial Australia.

In this section I will examine how the different maps that were in circulation, prepared by the likes of John Arrowsmith and also by survey departments, private individuals and commercial cartographers in different locations, helped in the construction of territorial developments. I will also analyze suggestions that were implemented and investigate the reasons that underpinned these decisions. The main argument advanced in this section is that the cartographic implications of the "scramble" that took place in Australia from the late 1840s until the early 1860s were not straightforward. Cartographers needed the right kind of information and depended on reliable knowledge-work when seeking to chart environmental observations and prepare up-to-date maps about the state of the land that had been sold. This was also the case when they sought to depict the territorial divisions that had been implemented on the continent.

The establishment of colonial territories in different parts of the continent, which varied in both size and shape, occurred for various reasons. Some territorial developments were initiated in London as plans and experiments, but many emerged in the colonies. Suggestions to form new colonies or plans to alter the shape and size of already existing territories, for example, were devised in Australia. The government of Sydney established penal outposts on the east coast. The British government founded a colony at the mouth of Swan River in 1829. The continent was then divided into two territories that were separated by a boundary that ran along the 129th East longitude. This settlement formed the center of British Western Australia and constituted British claims for the whole continent and enabled it to spread to different parts. The establishment of subsequent territories derived from territory that previously belonged to New South Wales. This began with the foundation of South Australia in 1836, followed by the separation of Port Phillip (Victoria) in 1851, Moreton Bay (Queensland) in 1859 and ended in the extension of the territory of South Australia in 1863 in order to incorporate tracts of land in the north and the west.[811]

The colonial territories included some distant islands: New Zealand was a dependency of New South Wales, for example, from 1814 until 1841, when it became a Crown colony. Tasmania was also initially administered as a dependency of New South Wales until 1824, when it became an independent colony. The island always had a relatively strong degree of autonomy due to its geographical location.[812] As the settlements spread and immigration increased, the population of each colony increased. Periods of growth were not uniform. Western Australia only began to experience growth, for example, in the 1850s, whereas South Australia underwent its greatest period of growth in the 1830s and 1840s. The combined population of the Australian colonies reached one million in the 1860s. This demographic growth was primarily the result of immigration.[813]

The small-scale maps of the continent generally served British interests in terms of representing territorial sovereignty over the whole continent, without acknowledging indigenous polities or rights to land.[814] Lurking behind the cartographic front page, however, was the need to ensure that Britain was in accordance with internationally-recognized agreements that would grant it the right to administer the territory. In the Australian context, the vastness of the continent in comparison to the size of the indigenous population was an argument used by the British to secure the right to take possession of the land. As Saliha Belmessous notes, the description of the land as "a land unoccupied, uncultivated, and sparsely inhabited, allowed the Crown to overlook the question of indigenous ownership".[815] Furthermore, British action on the continent was framed as a beneficial civilizing

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[811] Atkinson 2004; Twomey 2004; Belmessous 2014b.
[812] Reynolds 2012, 3.
[813] Camm and MacQuilton 1897, 142–43.
[814] Kennedy 2013, 17.
[815] Belmessous 2014b, 186, 189–92.

mission for the indigenous people and the land. This way of thinking was also used to enforce the right to settle territory. [816]

Recent scholarship has forcefully demonstrated that the British did not consider the continent as *terra nullius*, as has long been claimed, and that it did not have a coherent legal doctrine. Instead, it appears that the British acknowledged indigenous ownership over some parts of the land in Australia. Nevertheless, instead of signing treaties they aimed at forging their right to the land by establishing settlements.[817] This did not occur without extensive discussions over aboriginal rights to land. Explorers, officials and settlers were concerned about the legality and the ethics of British claims. These individuals hoped to establish the right to settle through lawful means and therefore expressed interest in the formulation of legally-binding treaties. However, despite multiple discussions taking place in different contexts in the 1830s and 1840s, no legal documents were enacted. Numerous occasions for this existed as questions of ownership emerged in the midst of frontier wars, the need to determine the legal status of the indigenous peoples and attempts to settle without appropriating indigenous land.[818]

Consequently, the land was simply taken following a standard first laid down by James Cook, even though this was not the general policy practiced within the Empire.[819] For example, once Swan River was founded as a settlement, the British did not even consider making a treaty with the local Noongar people.[820] One of the few contracts that was signed was between pioneer John Batman (1801–1839) and the Kulin people in Port Phillip in 1835. However, it was quickly nullified as the administration in New South Wales did not wish this to set an unwanted precedent.[821] Thus, the maps prepared by the British do not document indigenous possessions, rather they document tracts of land assigned for their use.[822] The cartographies that represented British territorial sovereignty over the continent worked in favor of Europeans, but it is important to note that maps that exhibited European sovereignty in Oceania, or the Pacific at large, were not always uniform in their represen-

[816] Lines 1999, 41; Belmessous 2014b, 189–90.
[817] Fitzmaurice 2007; Belmessous 2014b, 192–94; Fitzmaurice 2014, 302–31, See also Connor 2005; Benton and Straumann 2010. For a comprehensive and critical discussion on the use of the term in scholarship, see Fitzmaurice 2014, 302–31.
[818] Belmessous 2014b, 186–187, 197–199, 208–210, passim.
[819] In addition to New Holland/Australia, the British attempted to form new colonies in western Africa, Madagascar, Malaysia and north-western America. They aimed at doing so with the consent of the indigenous peoples. See Belmessous 2014b, 191.
[820] Belmessous 2014b, 197.
[821] For the map, see MPG 1/516, TNA. See also Belmessous 2014b, 187–89, 202–3.
[822] At the planning level, the use of portions of colonial territory was directed to accommodate indigenous peoples. These "reserves" were initially created to "protect" indigenous inhabitants. By the middle of the century, their function as a means of control started to grow. For example, in Western Australia Surveyor-General Roe drew up a plan for a "native village", which contained dry country for housing and good land for agriculture. See Roe to the Colonial Secretary 1 December 1846 no. 673, 108-110, vol. 154, CSR, 2941, SROWA; Sketch of Proposed Allotments on Lake Goolelal in Roe to the Colonial Secretary 1 December 1846 no. 673, 108-110, vol. 154, CSR, 2941, SROWA.

tations. Acknowledgment of the extent and meaning of British claims varied geographically. Consequently, the British sphere of influence over the continent in the 1830s, for example, following the establishment of the Swan River settlement, was represented in different ways.[823]

Maps had many roles to play in the discussions that took place regarding the formation and expansion of new colonies. Maps often accompanied the suggestions that were made to alter the locations of the boundaries, or to establish new colonies.[824] Simultaneously, the territorial schemes could be discussed without specific maps, as the graticule of latitudes and longitudes made it possible to refer to the propositions as something that could be comprehended with "a glance at the Map".[825] I have not been able to recover any explicit references to the use of small-scale maps of the continent at the Colonial Office when discussing territorial matters. However, a few maps that were prepared by the Survey Department in New South Wales demonstrate how published maps of the continent were at times used and altered to illustrate the discussions that took place. The Legislative Council of the colony referred to these maps when discussing the alterations to South Australia's western boundary and the limits of the new colony of Queensland in the late 1850s. The two maps were originally produced by Joshua Archer in London. They were subsequently amended at the Survey Department according to suggestions that had been made: one map depicts the area west of South Australia that the colony wished to cede; the other indicates the proposed southern limit of Queensland running along the 29th latitude south.[826]

Maps were also utilized to enforce arguments about territorial designs, in addition to serving as visual aids to help demonstrate the meaning of suggestions. Maps were employed to express potential and to visualize what the plans entailed when situated on a map. Arrowsmith, for example, participated in the preparation of two such maps in the late 1830s and the early 1860s respectively. He prepared maps in order to illustrate an article

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[823] Particular examples include the maps by F. W. Streit, a mathematician and military cartographer. The style of representation is not consistent, and the extent of British colonies on the coast are acknowledged in different ways. For examples of these maps see Streit, F. W., *Charte von Australien nach den besten Charten mit Hulse des v. Zimmermanschen Werck's uber diesen Welttheil*, 1830, MAP T 1212, NLA; Streit, F. W., Charte von Australien nach den besten Charten mit Hulse des v. Zimmermanschen Werck's uber diesen Welttheil, 1834, MAP RM 3269, NLA. Compare with the following British cartographies: Hebert, L., *Australia*, 1830, MAP RM 694, NLA; Lothian, J. Australia with the British settlements, 1835, MAP RM 3955, NLA; Arrowsmith, J., *Map of Australia, New Zealand, and the adjacent islands,* 1839, MAP RM 3009, NLA.

[824] Map of the boundaries of South Australia, Enclosure in Grey to Stanley, September 30 1844, MPG 1/124 TNA; Map of South Australia shewing part of the boundaries, Enclosure in Grey to Stanley, September 30 1844, MPG 1/125 TNA; MPG 1/739, 2, 3, TNA.

[825] Bowen made this reference when discussing the accessibility of a particular tract of land from Queensland. See Bowen to Newcastle 8 December 1860 no. 92, f. 412, CO 234/2. For a similar reference see, for example, Minute by Merivale 19 May 1858 in MacDonnell to Labouchere 11 March 1858 no. 227, f. 140, CO 13/97, TNA.

[826] Sketch books, Reel 2780, vol. 8, ff. 36, 54, SRANSW. For the use of the map at the Legislative Council, see "NSW. Proceedings of the Executive Council with respect to annexation of a portion of New South Wales to South Australia. Extract from Minute No 58/36 dated 6th September 1858" in Denison to Lytton 4 December 1858 no. 189, ff. 394-395, CO 201/504, TNA.

published by the RGS in its *Journal* in 1838 and by lithographing a map for a parliamentary paper in the early 1860s, which discussed present and proposed boundaries.

The map that he engraved for the *Journal*—"Australia according to the proposed divisions"—illustrated a proposition made by James Vetch in London, whereby the Australian continent was divided into nine colonies each approximately the size of the Iberian Peninsula.[827] Vetch, an engineer, cartographer and a founding member of the RGS, thought that dividing the continent this way would guarantee equal resources for each colony, and importantly, their compact size would enable good government.[828] Matthew Graves and Elizabeth Rechniewski argue that Vetch's proposition is illustrative of a utopian design of a "New Britain" and the process of appropriating the Australian continent. Vetch's geography was speculative and was formed by conjecture and aimed to design a territorial scheme that would enable the best possible governance of the continent. As such, it shared many features with Maslen's mapping of the continent's interior.[829] His map provided a means to imagine, plan and visualize what the territorial division of the continent could look like. Yet, this does not imply that this map would have had the same meaning in the hands of all its readers.

Vetch's design can be contrasted with the discussion that emerged in the late 1850s and early 1860s regarding the redrawing of colonial boundaries. At the time two tracts of land remained "ungoverned" that were nominally part of New South Wales. One tract of land was in no man's land between South Australia and Western Australia; the second tract was in the north of the colony. They were the focus of expansionist agendas. As Dane Kennedy has noted, the granting of self-governance in the 1850s to all of the colonies, except Western Australia, led to the realization that even though the boundaries had been drawn, they could perhaps be redrawn and the territories could subsequently be transformed by extending them into uncontested areas in the center and in the north.[830] Consequently, inhabitants in the west and north of South Australia urged many parties to raise the question of organizing governance over them. For example, governor Richard MacDonnell first suggested in 1858 that the area in the west should be annexed to South Australia. He based his arguments on the spread of settlements and from new information gained about the area.[831] A few years later MacDonnell revised his suggestions and argued for the expansion of territory all the way up to the northern coast. MacDonnell had become aware of a plan to establish a new colony in this area and to annex the territory to Queensland.[832] Other suggestions included a plan to establish new colonies in these areas and to redraw the

[827] "Australia, according to the Proposed Divisions", *JRGS*, 1838, vol. 8.
[828] Vetch, *JRGS*, 1838, vol. 8. Compare also to the manuscript and Vetch's letter to Washington. See JMS/13/20, RGS; Vetch to Washington 12 January 1838, CB2/540, RGS.
[829] Graves and Rechniewski 2012.
[830] Kennedy 2013, 103.
[831] MacDonnell to Labouchere 11 March 1858 no. 227, ff. 137-139, CO 13/97, TNA.
[832] MacDonnell to Newcastle 26 November 1862 no. 68, ff. 295-299, CO 13/110, TNA.

boundaries of Queensland. New colonies were suggested for the northern shores of the continent,[833] but at least one plan was outlined to establish a colony on the southern coast between Western and South Australia.[834]

In 1861, Arrowsmith lithographed a map for the parliamentary papers, which summarized many of the propositions that had been made. It also ranks as a further contribution to the general discussion. The map had been prepared at the Survey Department in Queensland. It accompanied a suggestion communicated by George Bowen, the first governor of the colony, in September 1860, to extend the boundary of Queensland further west and to establish a new colony in the north to complete "the occupation of the whole continent of Australia".[835] The map also visualized the discussion vis-à-vis the merits of annexing a tract of land in no man's land between South Australia and Western Australia in favor of the former territory.[836] The map illustrated suggestions that were based on more elaborate geographical knowledge of the continent. As a plan, it continued a series of different suggestions that had been received at the Colonial Office regarding the best way to utilize the continental space. These ideas were closely tied to questions of how best to govern vast tracts of land and how to account for the geographical features of the country when dividing the continent.

Varied outcomes can be discerned from the territorial developments that were suggested, such as those put forward by Vetch and Gregory. This is reflected in the way the decisions were documented on the maps by Arrowsmith and his contemporaries. Vetch's design, for example, was not assessed by the civil servants, but it did receive attention in the colonial press, as well as from Thomas Mitchell, the surveyor-general of New South Wales, and other continental European map-makers. Evidently, the idea did not gain unanimous support. Mitchell characterized Vetch's plan as uninteresting, for example, in a letter to the secretary of the RGS in December 1837. This was shortly before Vetch's idea was to

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[833] For a suggestion to establish a colony in the north, which originated in Victoria, see Thomas Embling's proposal that was transmitted by Governor Barkly. Embling was a member of the Legislative Council and part of the Victorian Exploration Committee that organized the expedition led by Burke and Wills. See Barkly to Newcastle 15 March 1860 no. 33, ff. 163-164, CO 309/51, TNA; "Enclosure A" in Barkly to Newcastle 15 March 1860 no. 33, ff. 166-167, CO 309/51, TNA; "Enclosure B" in Barkly to Newcastle 15 March 1860 no. 33, ff. 168-170, CO 309/51, TNA; Barkly to Newcastle 24 September 1860 no. 91, f. 159, CO 309/52, TNA; "Enclosure A" in Barkly to Newcastle 24 September 1860 no. 91, ff. 160-161, CO 309/52, TNA; Barkly to Newcastle 23 October 1861 no. 88, f. 142, CO 309/57, TNA; "Enclosure A" in Barkly to Newcastle 23 October 1861 no. 88, ff. 144-145, CO 309/57, TNA.

[834] In 1858, for example, Joseph Hedley, a solicitor from Newcastle in England, suggested that the tract of land currently under the jurisdiction of New South Wales, should be colonized and established as a separate "Albert Colony" or "South Western Australia" with a capital named "Saxe Coburgh". The civil servants rejected this plan and referred to the process of transferring the territory to South Australia that was currently in motion. See Hedley to the Colonial Office 7 July 1858, ff. 313-322, CO 201/507, TNA; Minute by Unwin 16 July 1858 in Hedley to the Colonial Office 7 July 1858, f. 324, CO 201/507, TNA; Minute by Merivale 17 July 1858 in Hedley to the Colonial Office 7 July 1858, f. 324, CO 201/507, TNA; Draft letter to Hedley in Hedley to the Colonial Office 7 July 1858, f. 325, CO 201/507, TNA.

[835] Bowen to Newcastle no. 30 September 1860 no. 79, f. 91, CO 234/2, TNA.

[836] Arrowsmith, J. *Australia, showing the present and proposed boundaries of the respective colonies,* 1861, MAP RM 4459, NLA.

be discussed at an RGS meeting. Mitchell noted that he did "not feel much disposed to discuss imaginary divisions of New Holland – or the names to be given to blank spaces on its map".[837]

Once published, information about the article and Vetch's suggestion also reached the Australian colonies. Opinions ranged from positive interest to highly critical. In *The Sydney Monitor*, for example, the idea of a uniform system of division was welcomed, but it was also noted that the "scanty knowledge of the interior would not allow it to be done at present to any satisfaction". In 1845, however, a different writer in *The Sydney Morning Herald* argued that the map—"by Arrowsmith of course"—epitomized how the Australian map was understood in Britain "a sort of spatchcock, at which any tyro is permitted in turn to have his cut or throw".[838] In addition, the cartography of Vetch's design gained international publicity as it was printed in France and Italy in the 1830s and 1840s in the form of inset maps within larger depictions of the continent. These maps illustrated a possible territorial design for the fifth continent.[839]

Gregory's design, on the other hand, was printed in the parliamentary papers and discussed matters relating to Queensland. However, the civil servants at the Colonial Office were not favorably disposed when the map first arrived in London. This was especially the case in regard to extending the boundary of the colony or establishing a new colony in the north, even though Bowen later the same year repeated his plea to expand the territory of Queensland.[840] The civil servants concluded at this time that the territory of Queensland contained "quite enough good land to employ all their available labour"[841] and that it remained unclear what should be done with the area. Thus, there was no point to "to anticipate the course of events by hastly [sic] attaching any part of North Australia to a Colony to which its permanent annexation might prove undesirable".[842]

The different territorial schemes that were outlined demonstrate, in general terms, how multiple actors used geographical and spatial arguments in order to strengthen their plans. Rachel St. John has identified how a very similar tactic was used in the context of the United States in the mid-nineteenth-century.[843] In essence the map of the continent and the geographical knowledge that was obtained or deduced by analogies served as starting points

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[837] Mitchell to Washington 8 December 1837, CB2/359, RGS.
[838] "English Extracts", *The Sydney Monitor* 1 June 1838, 4. Vetch's article was also mentioned in an essay published in 1845, entitled "Australian Geography", *The Sydney Morning Herald,* 8 March 1845, 2.
[839] The map was printed, for example, in the 1830s in an atlas originally compiled by Adrien Hubert Brué in France and in a map authored by Cesare Maggi in Italy in the late 1840s. See Brué, A. *Carte de l'Australie*, 1838, MAP T 262, NLA; Maggi, C. Carta generale dell' Oceania ossia quinta parte del mondo, 1849, MAP T 885, NLA. For a later adaptation of Vetch's proposal, see Marmocchi, A. *L'Australia con la divisione delle sue coste proposta dal Capito. Vetch,* 1858, MAP RM 4786, NLA.
[840] Bowen to Newcastle 8 December 1860 no. 92, ff. 405-417, CO 234/2, TNA.
[841] Annotation by anon. in Bowen to Newcastle 8 December 1860 no. 92, f. 412, CO 234/2, TNA.
[842] Draft to Bowen 26 February 1861 in Bowen to Newcastle no. 30 September 1860 no. 79, f. 112, CO 234/2, TNA
[843] St. John 2017.

to advance different territorial ambitions. Conceptions of space—the idea of territorial sovereignty that was enforced throughout the century—as well as of geography were used to advance different schemes of expansion, separation, the reassignment of boundaries and the establishment of new colonies.[844]

On both occasions Arrowsmith and his firm facilitated the publication of the maps, but the cartographer did not participate in designing their content. However, through his own maps of the continent or parts of them, Arrowsmith visualized the decisions that had been made based on the information he had at his disposal. Hence, he participated in the production of the political and administrative geographies of Australia. Next, I will examine how and why he did this.

When examining the maps Arrowsmith produced from the 1830s up until the early 1860s, and the maps in the Colonial Office collections, it becomes clear that he only documented the establishment of new colonies on the Australian continent in a uniform manner until the late 1840s. Arrowsmith was quick to represent the territorial changes that were made on his general map of the continent, which he started to produce in 1838.[845] Once the colony of North Australia was established in February 1846, Arrowsmith inscribed the new territory on his map of Australia. North Australia was a colony that was established according to a plan initially produced by secretary of state Lord Stanley and was subsequently implemented by William Gladstone, his successor in office. The territory covered all of Australia north of the 26th degree latitude, but was limited in the west by the boundary of Western Australia. The colony was designed to function as a "receptacle for convicts", who had regained their freedom but could not find work in Van Diemen's Land. In May 1846 Gladstone composed a dispatch to Charles Fitzroy, governor of New South Wales, in which he explained that such a colony was needed as a place for secondary punishment as Parliament had restricted the use of the death penalty. It was hoped the new colony would be inexpensive to oversee and it would be managed by a superintendent, who would interact with London via the governor of New South Wales. Nevertheless, it would be a distinct colony with a distinct government. It was hoped that this experiment would produce a more efficient and speedier form of governance than was possible from London.[846]

Designing such a vast colonial territory in the north was made possible as a result of the failure of the British in their previous efforts to colonize the area. The British had attempted to establish settlements on the northern coast of Australia on multiple occasions. In 1824, for example, a settlement was founded on Melville Island. Two years later another settlement was established in Raffles Bay. Both were abandoned by the end of the decade, due to various problems relating to the inability of the British to cope with the environment, as well as violent encounters with the indigenous peoples. On the urging of John Barrow,

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844 For an accessible account of territorial sovereignty see Branch 2014.
845 Prescott identifies that the map first appeared in two sheets in Arrowsmith's expanded atlas. See Prescott 2012f.
846 Gladstone to Fitzroy 7 May 1846 no. 1, series 4512, SRANSW. See also Hogan 1898.

another attempt was made in 1836, when the settlement of Port Essington was founded. However, the environmental conditions still proved too troublesome and the settlement was unprofitable. Hence, Port Essington was abandoned in 1846.[847] All of these settlements were administered from Sydney and they formed part of the territory of New South Wales. This had been ensured by altering the position of the New South Wales boundary by six degrees of longitude to the west in order to have the trading post of Melville Island located on the central north coast within the jurisdiction of the colony.[848]

What is particularly interesting about the establishment of this colony is that the foundation and subsequent abandonment of North Australia as a separate territorial entity occurred during a short period of time: the colony was established in February 1846 and was abandoned in November of the same year. This was formalized by a Letters Patent, which was issued in December 1847.[849] The sudden loss of status for the colony occurred due to changes in the political climate concerning the disposal of convicts.[850] Consequently, Fitzroy aborted the plans, which he had already begun to implement according to the instructions he had received.[851] However, the matter was only made public when the commission of the governor was redefined through a new Letters Patent. This second patent assimilated the area into New South Wales and extended the governor's sovereignty over the territory.[852] This course of action transpired as in the midst of abandoning the initial plan, legal officials in New South Wales pointed out that by revoking the plan the government had created a territory without an official sovereign. According to their legal interpretation, the jurisdiction of the commission established by the governor of New South Wales had been limited to the 26th degree South latitude.[853]

Writing to officials in London in August 1847, Fitzroy reported how the Crown Law Officers of the colony had pointed out the limits of his jurisdiction. He noted that this would cause problems in exercising power over the squatters who had established stations in the area.[854] The civil servants in London deliberated over the matter and Herman Merivale

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[847] Cameron 1989, 271; Etherington 2011, 238–39.

[848] Governor Darling's Commission 1825, Letters Patent of 16 July 1825, Founding Docs; Twomey 2004, 38.

[849] Twomey 2004, 39; Spagnolo 2015, 59.

[850] Johnston and Gregory 1989, 249. For the correspondence relating to the revocation of the colony, see Grey to Fitzroy 15 January 1847 no. 83, series 4512, SRANSW; Fitzroy to Grey 2 August 1847 no. 2, ff. 258–263, CO 201/383, TNA. See also the minute by Gairdner 19 April 1847 noting that the instructions to break up the colony were dated 19 November 1846. See a minute by Gairdner 19 April 1847 in Fitzroy to Gladstone 7 November 1846 no. 2, ff. 514-516, CO 201/369, TNA.

[851] Fitzroy to Gladstone 7 November 1846 no. 2, ff. 505–512, CO 201/369, TNA; Fitzroy to Gladstone 7 November 1846 no. 3, 545–548, CO 201/369, TNA; Fitzroy to Gladstone 7 November 1846 no. 4, ff. 553–554, CO 201/369, TNA; Fitzroy to Grey 2 August 1847 no. 2, ff. 258–263, CO 201/383, TNA. For the dispatches Fitzroy was referring to, see Gladstone to Fitzroy 7 May 1846 no. 1, Gladstone to Fitzroy 8 May 1846 no. 2, Gladstone to Fitzroy 14 May 1846 no. 3, Gladstone to Fitzroy 7 May 1846 no. 4, Gladstone to Fitzroy 7 May 1846 no. 5, series 4512, SRANSW.

[852] "Proclamation", *New South Wales Government Gazette* 16.1.1849.

[853] Plunkett & Manning to the Governor 19 August 1847, enclosure in Fitzroy to Grey 23 August 1847 no. 169, ff. 355–356, CO 201/383, TNA.

[854] Fitzroy to Grey 23 August 1847 no. 169, f. 351, CO 201/383, TNA.

noted that the area was technically still under English law as a consequence of the New South Wales Government Act.[855] Nevertheless, Lord Grey, the secretary of state, considered it best to form an additional commission to extend British authority to the old boundaries of the colony.[856] Thus, a Letters Patent was issued and transmitted to New South Wales and Fitzroy was finally able to publicly announce the revocation in January 1849.[857]

This somewhat extraordinary and speedy series of decisions to establish and then revoke North Australia as a colony is often overlooked or only briefly discussed as a failure, when examining territorial developments in Australia.[858] However, if we examine its cartographic implications, it becomes clear that the case of North Australia is important when considering how the political geography of the continent was constructed on maps at the time.

As this scheme demonstrates, as well as the others that were discussed earlier, territories on the Australian continent were to a large extent established by the theoretical demarcation of boundaries without actually ascertaining where they existed on the ground. This process of territorial acquisition exemplifies how the exercise of colonial rule changed from the more limited control of single settlements to the foundation of entire countries defined as bounded spaces.[859] During the nineteenth century boundaries in different parts of the world ran as straight lines, but also as "natural" boundaries. These latter boundaries were demarcated by using distinguishable natural features, such as rivers and mountains.[860] Most of these boundaries were nominal: for example, the boundary established between the United States and Mexico in 1848 only existed on maps.[861] Nominal boundaries could be maintained as long as they were not relevant to the administration of a particular area. This was true regarding the US-Mexico boundary, as well as in Australia. In Australia, the boundary between South Australia and Port Phillip had to be "attached to the

[855] Minute by Merivale 10 February 1848 in Fitzroy to Grey 23 August 1847 no. 169, f. 352, CO 201/383, TNA.
[856] Minute by Grey 11 February 1848 in in Fitzroy to Grey 23 August 1847 no. 169, f. 352, CO 201/383, TNA.
[857] Draft to Fitzroy 12 April 1848 in Fitzroy to Grey 23 August 1847 no. 169, ff. 353-354, CO 201/383, TNA; "Proclamation", *New South Wales Government Gazette* 16.1.1849.
[858] See for example Johnston and Gregory 1989, 249; Lines 1992, 17; Evans 2007, 59-61. Ford and Roberts 2013. A detailed history of the experimental colony is by Hogan 1898.
[859] Osterhammel 2014, 107-8.
[860] Osterhammel 2014, 110-13.
[861] St. John 2012.

ground" by determining the natural features near the 141st longitude line in the areas where settler activity had spread.[862]

Arrowsmith published the first map that documented the establishment of North Australia only a few months after it had taken place in May 1846. Initially, Arrowsmith did not assign a boundary to North Australia; instead, the territory first became visible as a name on the map. Thus, on this map South Australia remains the only territory that is separated from New South Wales.[863] In the next version of the map, published a year later, the colony has been delineated with a southern boundary. This created, as Prescott notes, "an oblong of undesignated territory" between South Australia and Western Australia that would later become part of South Australia.[864] The territory of North Australia remained as a designated area on Arrowsmith's maps until 1853. Hence, the states published in 1848, 1849 and 1850 all reproduce the spatial division in a similar manner.[865] In 1853, Arrowsmith erased the southern boundary.[866] However, the name of the colony remained in place and is reprinted on his maps throughout the 1850s.[867] After Queensland was proclaimed a separate colony in December 1859, North Australia can still be found on Arrowsmith's map, alongside the new colony. The two areas occupy the northern portion of the continent until the last state of the plate was issued in 1862.[868]

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[862] The process of demarcating the boundary began as a result of enquiries made in 1844 by Governor George Grey of South Australia in regard to adjusting the boundary. Grey urged the adaption of a natural boundary in order to easily ascertain lines of demarcation. However, agreement about such "natural boundaries" with the colony of New South Wales proved difficult to achieve. Hence, it was decided that the boundary would be kept at the 141st East longitude. The line was made legible by attaching it to nearby landmarks through a joint survey by New South Wales and South Australia in 1847. For the discussion and the maps involved, see the following dispatches and their enclosures: Grey to Stanley, September 30 1844 no. 128, CO 13/39 TNA; Map of the boundaries of South Australia, Enclosure in Grey to Stanley, September 30 1844, MPG 1/124 TNA; Map of South Australia shewing part of the boundaries, Enclosure in Grey to Stanley, September 30 1844, MPG 1/125 TNA; Sketch Shewing the present eastern boundary of South Australia etc. MPG 413, TNA; Gipps to Stanley, 29 April 1846 no. 91, 479-480, CO 201/366, TNA; Robe to Grey 16 December 1847 no. 148, ff. 247-249, CO 13/56, TNA; Fitzroy to Grey 6 April 1848 no. 88, 158-159, CO 201/396, TNA. See also Carney 2016.

[863] Arrowsmith, J. *Eastern portion of Australia*, 1846, MAP NK 10749-1, NLA.

[864] Prescott 2012i. Prescott has identified two versions of the map that were printed in 1847. The 1847/1 version is printed in Arrowsmith's atlas, a copy of which is held by Newton Library at The University of Cambridge, UK. The 1847/2 version is held in the collections of the National Library of Australia. See Arrowsmith, J. *Eastern portion of Australia,* 1847, MAP RM 4384, NLA.

[865] See, for example, Arrowsmith, J. *Australia from surveys made by order of the British Government*, 1847 & 1848, MAP RM 785, NLA; Arrowsmith, J. *Eastern portion of Australia*, 1848, MAP T 84/2, NLA; Arrowsmith, J. *Eastern portion of Australia*, 1850, MAP T 85/2, NLA.

[866] Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1853, MAP RM 787, NLA.

[867] See, for example, Arrowsmith, J. *Eastern portion of Australia*, 1858, SLOSA. Accessed via Prescott 2012l; Arrowsmith, J. *Eastern portion of Australia*, 1858, MAP T 1441/2, NLA. Prescott notes that this map has an imprint dated 1858, but was issued closer to 1860, as testified by the existence of the boundary separating Queensland from New South Wales. See Prescott 2012m.

[868] Arrowsmith, J. *Eastern portion of Australia*, 1858, MAP T 1441/2, NLA. In spite an imprint of January 1, 1858, the map was most likely issued closer to 1860. See Prescott 2012m. Also see, Arrowsmith, J. *Australia from surveys made by order of the British Government*, 1862, Z/MC 804/1862/1, SLNSW.

The same cartographical developments are evident on one of the most common maps acquired by the civil servants from Arrowsmith: the map depicting the south eastern portion of Australia. The map was one of the most important maps Arrowsmith prepared and it appears that the Colonial Office added at least three different states of it to its map library. The map was also used in the parliamentary papers at the beginning of the 1850s in order to illustrate articles relating to the discovery of gold in the colonies.[869] The map was continuously updated with the latest geographical information and it was printed for a period of twenty years, starting from 1838. In the top-left corner of the map Arrowsmith inserted a small, untitled inset map of the whole continent showing its territorial division. The map documents the territorial developments that occurred during the 1840s and 1850s: the separation of new colonial territories from New South Wales is visible through the lines Arrowsmith added on the map. However, as he updated the main map with further geographical details, he did not document the official cessation of the colony of North Australia. The colony is still visible on the inset map until the last version of the plate was prepared after the establishment of Queensland.[870]

These maps can also be contrasted with the extensive maps prepared by Arrowsmith in the 1850s, which depict the eastern portion of the continent. The maps measure 194.5 centimeters in height by 157 centimeters in width. It is likely that these 1851 and 1853 states of the *Map of the eastern provinces of Australia* were two of the last small-scale maps acquired by the Colonial Office from the cartographer in relation to Australia. On these versions of the map, New South Wales is depicted as a territory that is limited in the north by the 26th degree latitude south, whilst the north remains unnamed.[871]

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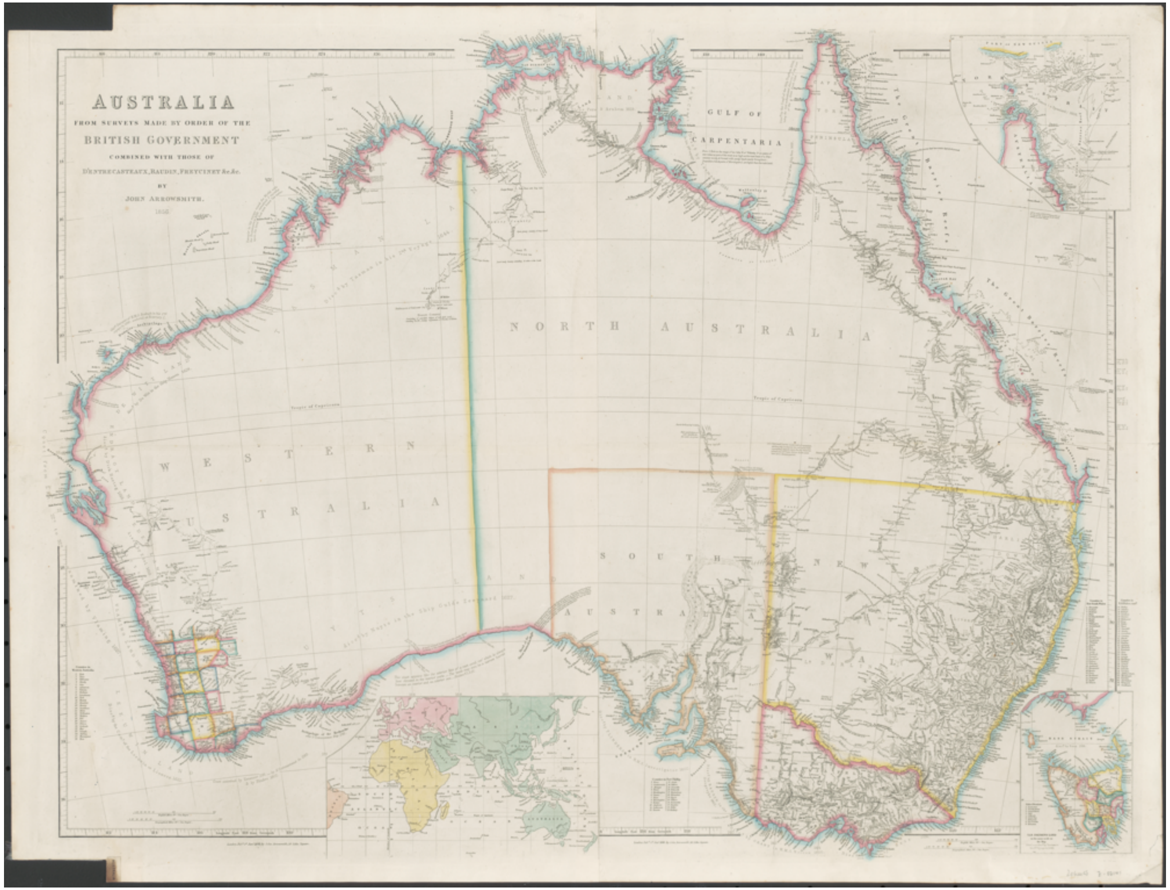
[869] Catalogue of the maps, plans and charts in the Library of the Colonial Office 1910, Australia 1-3; Prescott 2012s.
[870] See, for example, Arrowsmith, J. *The South Eastern portion of Australia*, 1848, MAP T 97, NLA; Arrowsmith, J. *The South Eastern portion of Australia*, 1852, MAP T 98, NLA. Prescott has identified that the last version that was printed has an imprint of January 2, 1858, but the information it contains is from a later period, as the map documents the boundary between New South Wales and Queensland. See Arrowsmith, J. *The south eastern portion of Australia*, 1858, MAP T 1446, NLA; Prescott 2012t.
[871] *Catalogue of the maps, plans and charts in the Library of the Colonial Office 1910*, Australia 2.
For the maps, see Arrowsmith, J. *Map of the eastern provinces of Australia,* 1851, MAP RM 790 (Copy 1), NLA; Arrowsmith, J. (1852). *Map of the eastern provinces of Australia*, 1852, MAP RM 789/1-3, NLA; Arrowsmith, J. (1855). *Map of the eastern provinces of Australia,* 1855, MAP RM 1947, NLA.

Arrowsmith's map of Australia, dated 1858, but probably prepared closer to 1860, documents the short-lived colony of North Australia by name.

Arrowsmith, J. *Australia from surveys made by order of the British Government*, 1858, MAP RM 3277, NLA.



Consequently, Arrowsmith was very consistent in documenting North Australia on his maps for an extensive period of time, although some versions do not document North Australia by name. The prevalence of North Australia on the majority of Arrowsmith's maps and the representation of the territorial division of the continent leads to two important questions: why did North Australia prevail on the maps for an extensive period of time? More importantly: what does this tell us about the role of maps as documents that demonstrate the limits of different kinds of administrative space in the context of Australia?

The carto-bibliographer Dorothy Prescott assumes that North Australia remains on Arrowsmith's maps because the cartographer was ignorant of the Letters Patent to revoke the plan of settlement and for the territory to be once again subsumed within New South Wales.[872] This seems somewhat extraordinary considering how well he was informed about developments on the Australian continent. However, when we consider how the colony's independent status was revoked, it becomes evident that this might indeed be the case. It might be that this piece of information was overlooked by Arrowsmith due to these special arrangements. However, judging by the discussions in the Houses of Parliament in June 1847, which were documented in *The Times*, it is evident that the revocation of the colony was publicly available information.[873]

With the scant material that remains, it is impossible to uncover with certainty why Arrowsmith did not know or acknowledge the latest information regarding territorial developments in Australia. However, by critically examining the maps produced by Arrowsmith with those by other map-makers working in Great Britain and in different parts of the world, it is possible to determine the typicality of his territorial construction.

If one examines the maps in the collections of the Colonial Office and other commercially published maps in Great Britain during the 1850s and the beginning of the 1860s, it is notable that North Australia is usually visible in some form or other. Many of the influential map publishers in Great Britain at the time, such as the Edinburgh-based John Bartholomew, the London-based Joshua Archer, the Society for the Diffusion of Useful Knowledge and the German cartographer Augustus C. Petermann, replicated Arrowsmith's insertion of North Australia onto their maps into the 1860s. The publication of these maps makes explicit important aspects of the character of the territorial divisions in circulation at the time.

For example, Bartholomew's maps of the continent, which were produced in the 1850s, depict North Australia as a distinct area. At the turn of the 1860s, the visualization of the extent of the territories became more varied. The location of the northern boundary of New South Wales and the western boundary of South Australia alter, even though decisions about the territories were not made at the time. Simultaneously, North Australia remains

[872] Prescott 2012m.
[873] "House of Commons, Thursday, June 3", *The Times*, 4.6.1847, 2; "London, Friday, June 4, 1847", *The Times* 4.6.1847, 4.

as one of the defining features on these maps.[874] After the boundaries of Queensland were acknowledged in a map published in 1862, North Australia shrinks to occupy roughly the area of the present day Northern Territory.[875]

Likewise, the Society for the Diffusion of Useful Knowledge published maps with similar territorial divisions.[876] Petermann, who resided in London during the 1850s and was interested in the geography and the exploration of Australia, represented the development of the division in a similar manner. North Australia appears on his map as the name of a territory without any decipherable boundaries.[877] Furthermore, Joshua Archer engraved North Australia on his map, but only depicted it with a southern boundary.[878]

However, exceptions existed, including works by James Wyld Jr., a successful map-publisher in London and Alexander Findlay, a London-based cartographer who collaborated with the RGS especially in the 1850s. Wyld Jr. continued the work of his farther, James Wyld Sr. and the offices of his map firm were frequented by government officials in a similar manner as with Arrowsmith.[879] Their maps of Australia did not document the establishment of North Australia by inserting the name of the colony on the maps. Instead, Wyld Jr.'s maps demonstrate the separation of Port Phillip from Victoria, as well as a northern boundary for New South Wales in the late 1840s. This boundary probably indicates the southern limits of North Australia, but it is not definitive. It is significant that in addition to leaving the establishment of North Australia undocumented, Wyld's maps also lack a boundary-line separating Western Australia from New South Wales. The only other boundaries he documents are the limits of South Australia. Findlay's maps, published in the 1850s, are similar

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[874] See, for example, Bartholomew, J. *Australia,* 1853, MAP T 143, NLA; Bartholomew, J. *Australia,* 1854, MAP T 144, NLA; Bartholomew, J. *Australia,* 1858, MAP RaA 10 Plate 2, NLA; Bartholomew, J. *Australia*, 1858, MAP RM 2034, NLA; Bartholomew, J. *Australia* 1858?, MAP RM 4101, NLA; Bartholomew, J. *Australia*, 1859, MAP T 145, NLA; Bartholomew, J. *Australia*, 1860, MAP T 146, NLA. The maps were published by Charles and Adam Black, who were Edinburgh-based book publishers. An atlas published by the Blacks - *Black's General Atlas*, which was compiled by Sidney Hall and William Hughes, also contained a map featuring North Australia. See Hall and Hughes 1853; Newth 1957.

[875] Bartholomew, J. *Australia* 1863, MAP RM 3329, NLA.

[876] For example Society for the Diffusion of Useful Knowledge, *The Australian colonies,* 1853, MAP RM 795 (Copy 1), NLA; Society for the Diffusion of Useful Knowledge, *The Australian colonies*, 1855, MAP T 1151, NLA; Society for the Diffusion of Useful Knowledge, *The Australian colonies,* 1859, MAP T 1153 (Copy 1), NLA.

[877] Petermann, A. *Festland von Australien und benachbarte Inseln*, 1855?, MAP RM 3184, NLA. Petermann published many maps of the Australian continent, including one that was based on the cartographies produced by Arrowsmith and Mitchell that featured North Australia. See Petermann, A. *Australia and New Zealand according to Arrowsmith and Mitchell*, 1858?, MAP RM 3306, NLA. Similar examples are the maps by the Edinburgh-based Alexander K. Johnston. See, for example, Johnston, A. K. *Australia,* 1854?, MAP T 756, NLA.

[878] Archer, J. *Australia*, 1850, MAP T 1464, NLA. The name "North Australia" is still visible on maps in 1860. See, Archer, J. *Australia,* 1860, MAP RM 4778, NLA.

[879] Wyld's father had inherited his map-business in 1823 from William Faden, an influential eighteenth-century map-publisher. Wyld Jr. took over the business after his father's death in 1836. See Baigent 2004c; Baigent 2004d. For more on Faden, see Pedley 1996. For Findlay's collaboration with the RGS, see Verner 1971a.

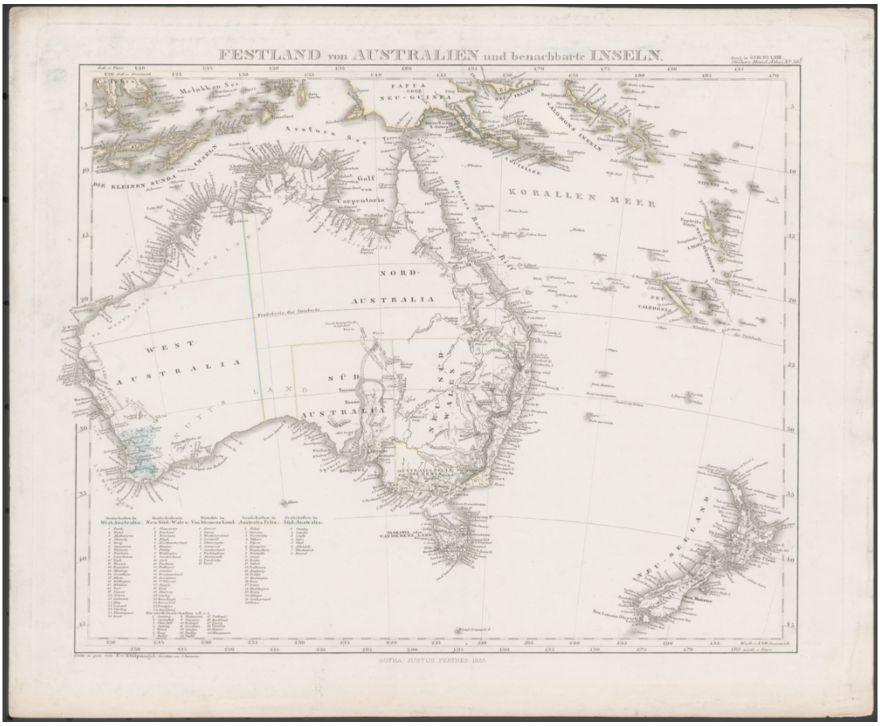
regarding the north, but they document the boundary between New South Wales and Western Australia.[880]

What we can determine, based on all of these maps, is that the short existence of North Australia proved to have a significant effect on the cartographical representation of the Australian continent during the 1850s. In addition to map-makers in Great Britain, those working in continental Europe and in North America also made similar choices on their maps.[881] In combination these maps demonstrate that no fixed way of representing the limits of the colonial territories existed in the 1850s. Moreover, it can be seen that North Australia acquired a more permanent place on maps of Australia than has previously been assumed.[882] These examples demonstrate that the limited circulation of information, regarding the revocation of the colony, was at least a partial factor in the way the territorial names and divisions were documented on maps. I will elaborate on this argument below by examining how the maps used by the civil servants at the Colonial Office in the late 1850s and the beginning of the 1860s documented territorial developments, particularly the establishment of Queensland.

[880] Wyld, J. *Map of Australia,* 1847, MAP NK 3201, NLA. The boundary is represented in a similar manner on the maps published in 1848, 1850 and 1851. The line of the boundary is slightly altered in 1854 in order to follow the boundaries of the newly established counties. See Wyld, J. *Map of Australia,* 1848, MAP RM 744 (Copy 1), NLA.
Wyld, J. *Map of Australia,* 1850?, MAP T 1382, NLA; Wyld, J. *Map of Australia,* 1851, MAP T 1383 (Copy 1), NLA; Wyld, J. *Map of Australia,* 1854?, MAP RM 780, NLA; Wyld, J. *Map of Australia,* 1855?, MAP T 1385 (Copy 1); NLA; Wyld, J. *Map of Australia,* 1856?, MAP RM 1294, NLA. For Findlay's maps see for example Findlay, A. G. *Australia,* 1853, MAP RM 797, NLA; Findlay, A. G. *Laurie's Map of Australia,* 1855, MAP RM 809, NLA.

[881] For examples of maps prepared in continental Europe and North America that exhibit the colony of North Australia, see for example Colton J. H. *Australia* 1855, MAP RM 2050, NLA; Stieler, A. *Oceania o Australia e Polinesia nelle projezione di Mercator*, 1855, MAP RM 630, NLA; Morse, S. *Australia,* 1855, MAP RM 3973, NLA; Lange, H. *Oceanien,* 1855-1857, MAP RM 3765, NLA; Cortambert, E. *Océanie*, 1855, MAP RM 622, NLA; Sydow, E. *Australien,* 1856, MAP T 1215, NLA; Colton, J. H. *Australia,* 1856, MAP NK 11350, NLA; Weiland, C. F. *Das Austral-Continent oder Neu Holland*, 1858, MAP T 1336, NLA; Cortambert, E. *Oceanie,* 1858, MAP RM 3309, NLA;.Poppey, C. & Kratz, W. *Australien,* 1859, MAP RM 3335, NLA; Stülpnagel, F. & Berghaus, H. *Festland von Australien und benachbarte Inseln,* 1859, MAP T 949, NLA; Brué, A. H. *Carte générale de l'Australie* [...], 1859, MAP RM 3739, NLA.

[882] Compare with the notion made in Hogan 1898, 2.



Many Arrowsmith's contemporaries, such as German Augustus C. Petermann, documented North Australia on their maps of Australia throughout the 1850s. Petermann, A. *Festland con Australien,* 1855, MAP RM 3184, NLA.

After the revocation of the colony of North Australia, the next new colonial territories to be established were offshoots of New South Wales. The processes resulting in the establishment of Victoria in 1851 and Queensland in 1859 were put in motion by petitions from the inhabitants of the southern and northern districts, originally known as Port Phillip and Moreton Bay respectively. These processes were partly fueled by the realization that the extent of New South Wales's territory posed a serious challenge for governance.[883] The fast-growing population of Port Phillip was viewed as an asset by the local authorities. Since the first settlement in the area in 1835, the population had reached 70,000 inhabitants by 1850. This was almost thirty percent of the total inhabitants of the eastern mainland.[884] The call for more democratic forms of governance and the question of transportation were important factors that also affected the desire to seek independent status from New South Wales. The Port Phillip District did not wish to receive any further convicts, but this was not possible when the area was still officially part of New South Wales, where convicts were still received in Norfolk Island and Van Diemen's Land.[885]

[883] Ford and Roberts 2013, 138–39; Curthoys and Mitchell 2013, 157–58.
[884] Ford and Roberts 2013, 138.
[885] McCulloch 1966.

Similar issues were at the fore vis-à-vis the petition organized by the inhabitants of Moreton Bay. However, it seems the question of democracy was not as prevalent in this district. Instead, the debates in Moreton Bay focused on the needs of its workforce (and therefore the need to increase convict transportation of import laborers from Asia). In addition, the Colonial Office favored separation, as it intended to exert more influence over a territory that was rife with frontier violence.[886] Eventually, after extensive correspondence regarding the matter, as well as further petitions, minuting, drafting and the preparation of parliamentary acts, the districts were established as the new colonies of Victoria in 1851 and Queensland in 1859.

A prerequisite for the separation of these territories concerned the need to define their territorial extent in a similar manner as occurred when North Australia had been established. However, the processes that took place on these occasions were different. In the case of Port Phillip, the decision was easier than when the limits of Queensland were discussed. The boundary adopted coincided with the boundary of the district, which largely coincided with the straight-line link between the River Murray and Cape Howe.[887] The line separating Moreton Bay proved more problematic, as authorities in Sydney sought to push the frontier north. What is more, the extensive settlement in the area made determining the "natural" location of the boundary difficult.[888]

The boundaries of the colonies could be altered in different ways. The territorial extent of colonies was set by parliamentary acts or by orders in council. Governors could make "agreed alterations" to boundaries between colonies.[889] Thus, after a boundary was agreed as a separating line between New South Wales and Queensland, the alterations that occurred—due to petitions from the inhabitants in the area—were settled by the respective governments of the colonies. However, the discussions that related to the extension of the territory to the west had to be approved in London.

In cartographical terms, the implications of the establishment of these new colonies were varied. As the limits of Victoria coincided with those of Port Phillip (and to a large extent with the River Murray), it was rather straightforward to represent the boundary and the existence of the colony on small-scale maps. For example, Arrowsmith added the colony to the first maps he published in the early 1850s.[890] The case of Queensland proved more difficult. As already mentioned, Arrowsmith did not initially document its western boundary. The case of Queensland's western boundary serves as a good example to further

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[886] French 2010; Curthoys and Mitchell 2013, 163–64. See also Evans 2007, 51–77. For the petitions and proposals regarding the separation of Moreton Bay. on the basis of the characteristics of the environment and the distance to Sydney, see, for example, the following: To Her Majesty the Queen in Council, enclosure 1 in Fitzroy to Grey 29 January 1851 no. 17, f. 78, CO 201/439, TNA; Enclosure 2 in 1 in Fitzroy to Grey 29 January 1851 no. 17, ff. 79-80, CO 201/439, TNA; Enclosure 4 in 1 in Fitzroy to Grey 29 January 1851 no. 17, 83-92, CO 201/439, TNA.

[887] Camm and MacQuilton 1987; Carney 2016. On concerns relating to the location of the boundary, see Gipps to Stanley 29 April 1846 no. 90, ff. 15-17, CO 201/375, TNA.

[888] Carney 2016, 599–600.

[889] Twomey 2004, 40.

[890] See, for example, Arrowsmith, J. *The South Eastern portion of Australia,* 1852, MAP T 98, NLA; Arrowsmith, J. *Australia from surveys made by order of the British Government,* 1853, MAP RM 787, NLA.

demonstrate the point made earlier regarding limited and fragmented circulation of information vis-à-vis the boundaries of colonies. As a starting point in my analysis of the complexities inherent in establishing the boundaries of Queensland, and in documenting them on maps, I utilize the maps of the continent housed in the collections of the Colonial Office map library.

The catalog of the library documents the acquisition of four maps in the beginning of the 1850s, which all depicted the entire Australian continent. Two of these maps derived from commercial publishers in Britain: one was prepared by Edward Stanford in London in 1860 and the other was by Adam and Charles Black in 1861. The other two maps were prepared by the Board of Land and Works of Victoria in Melbourne in 1859 and 1861.[891] Before these maps were produced, no similar document—at least not one that would be documented in the catalogue—of the continent, which depicted the state of the territories was acquired by the Colonial Office in the 1850s. Thus, it seems that the establishment of Queensland created a need for new reference maps. However, the maps that were acquired depict different interpretations of the territorial divisions. The maps printed in Melbourne do not show any territorial divisions: they merely illustrate the topography and routes taken by explorers as they journeyed across the continent.[892]

Stanford's *New Map of Australia*, printed in 1860, depicts the northern portion of the continent and features the name of Queensland, yet does not assign any boundaries to the new colony. On this map, the colony extends over a large territory: from the east until the boundary of Western Australia. This includes a tract of land caught between South Australia and Western Australia.[893] The Black brothers' map of 1861 documents the western boundary of Queensland as being on the 141st longitude east, with it extending to the western boundary of South Australia up to the 129th longitude east. It also features a desolate tract of land in the middle of the northern coastal region. Thus, it is the only map that represents the territorial developments that had taken place according to the acts of Parliament.[894] The political geographies represented on these maps demonstrate that it cannot be presumed that the territorial changes that the administrators made were instantly documented on cartographical prints. However, as the map by the Black brothers shows, it was possible to do this in a relatively speedy manner. Consequently, an important question relates to the availability of information regarding the territorial changes in London.

I have discovered only two instances of communications within the extant correspondence that relates to the Australian colonies in which map-makers explicitly enquire about the location of colonial boundaries in Australia. One such document dates to the 1830s and concerns the boundary of New Holland, or Western Australia as it was later known.[895] The

[891] *Catalogue of the maps, plans and charts in the Library of the Colonial Office 1910*, Australia 2-3. For the maps see CO 700/Australia22, TNA; CO 700/Australia23, TNA; CO 700/Australia24, TNA; CO 700/Australia25, TNA.
[892] CO 700/Australia22, TNA; CO 700/Australia24, TNA.
[893] CO 700/Australia23, TNA; CO 700/Australia24, TNA.
[894] CO 700/Australia25, TNA.
[895] Archer to Stephen 12 March 1838, f. 10, CO 201/281, TNA.

other document relates to the boundaries of Queensland, which were being debated at the Colonial Office and between London and Queensland. The letters received at the Colonial Office reveal how information about the extent of the new territory had not been accessible to everyone. Furthermore, the western boundary had not been clearly defined. In August 1859, two months after the foundation of the colony, a letter arrived from the Admiralty asking for precise information about the boundaries of the territory. Merivale received a request to provide the Lords Commissioners of the Admiralty with more detailed information about the limits of the territory that was to be administered by governor-elect George Bowen.[896]

In a similar fashion, the secretary of state, the Duke of Newcastle, received a letter enquiring about the position of the boundaries from Stanford's Geographical Establishment in February 1860. Trelawny Saunders (1822-1910), a superintendent of the geographical section of the establishment, who was also responsible for editing a series of library maps of different parts of the world, noted that gaining accurate information had become an acute problem after the public announcement of the separation.[897] He noted that the available parliamentary papers were not informative:

> [They] do little more on this head than describe one of the proposed boundaries (papers presented 30 July 1858. Encl 2 in no 21), which, while it serves to separate Queensland from NSW appears to give to the new Colony all the immense tract extending beyond that line to the limits of South & Western Australia".[898]

Saunders concluded his letter by asserting the importance of receiving accurate information. In this light, he announced that he was going to insert the new colony on various maps being prepared by the establishment.[899]

The replies to these two communications demonstrate what formed the basis of territorial information: the legal instruments that constituted the establishment of the new colony. The civil servants chose to reply to the staff of the Admiralty by referring to the best possible legal instrument they had at hand: the commission given to governor George Bowen.[900]

Responding to Saunders appears to have required more consideration, as the information was given to a private individual. A crucial question was what legal document could be used as the basis to communicate this information? Noting that the necessary information was laid down in the Letters Patent, Gordon Gairdner wondered "whether the applicant should be placed in possession of so much of that instrument as defines these

[896] Admiralty to Merivale 17 August 1859, f. 529, CO 234/2, TNA.
[897] Saunders to Newcastle 9 February 1860, f. 742, CO 234/2, TNA; For Saunders, see Bolton 1910. For a similar enquiry regarding the position of a particular boundary in Australia, see Archer to Stephen 12 March 1838, f. 10, CO 201/281, TNA.
[898] Saunders to Newcastle 9 February 1860, f. 742, CO 234/2, TNA.
[899] Saunders to Newcastle 9 February 1860, f. 742, CO 234/2, TNA.
[900] Draft letter to the Secretary of the Admiralty 20 August 1859, ff. 530-532, CO 234/2, TNA.

boundaries of the Colony".[901] Eventually, the civil servants decided to send an extract of the Letters Patent to Saunders, which contained the definition of the boundary. However, the secretary of state warned that the southern boundary might be altered by the legislatures of New South Wales and Queensland before the maps could be published.[902] An awareness of this information might explain the non-appearance of both boundaries of the colony on the map produced for Stanford's Establishment, which was published in 1860. What is relevant in both of these cases is that the information regarding the boundaries that was passed on was based on material published in the parliamentary papers, that is, it was in theory available to any interested party.

However, the wording used to define the boundary was somewhat confusing. Consequently, in September 1860 governor Bowen wrote to London in order to discuss the position of the western boundary. He reported that confusion existed in the colony regarding its location. Bowen noted that the publication of a dispatch addressed to the governor of New South Wales, with the reports of the law officers in the shape of a parliamentary paper, had challenged the assumption vis-à-vis the extent of the colony's territory.[903]

Previously to the appearance of these documents, the general belief here was the same which also seems to have prevailed at the Colonial Office; viz. that the western boundary of Queensland was identical with the eastern boundary of Western Australia, that is with the 129th degree of east longitude.[904]

However, the parliamentary papers sent to Denison contained a plan that suggested that the boundary could lie at the 141st meridian. This was considered a somewhat troublesome location in the colony, as it would cut off vital areas of the colony. Consequently, Bowen hoped to receive clarification regarding the location of the boundary.[905] He enclosed a map with his dispatch, which had been prepared by Gregory, an experienced explorer and the colony's surveyor-general, as well as a memorandum he had penned. Gregory urged that it was necessary to extend the boundary further west and that it was preferable to establish a new convict colony to the north.[906] To emphasize his territorial desires further, Bowen enclosed extracts from texts written by John Dunmore Lang, a Presbyterian minister and enthusiastic colonist, in which the latter commented on the possibility of colonizing the an area north of the Victoria River and the possible establishment of a new convict colony in this settlement.[907] Lang had been active in promoting the position of the

[901] Minute by Gairdner 13 February 1860 in Saunders to Newcastle 9 February 1860, ff. 742–743, CO 234/2, TNA; a minute by Merivale 13 February 1860 in Saunders to Newcastle 9 February 1860, f. 743, CO 234/2, TNA.
[902] Draft letter to Saunders 22 February 1860, f. 744, CO 234/2, TNA.
[903] Bowen to Newcastle 30 September 1860 no. 79, ff. 86–87, CO 234/2, TNA.
[904] Bowen to Newcastle 30 September 1860 no. 79, f. 87, CO 234/2, TNA.
[905] Bowen to Newcastle 30 September 1860 no. 79, ff. 87–88, CO 234/2, TNA.
[906] Memorandum on the Provincial division of the northern portion of the Australian continent by Augustus C. Gregory. Enclosure 1 in Bowen to Newcastle 30 September 1860 no. 79, ff. 97-104 CO 234/2, TNA.
[907] Extract from Dr. Lang's works. Enclosure 3 in Bowen to Newcastle 30 September 1860 no. 79, ff. 105–111, CO 234/2, TNA. See also Baker 1967.

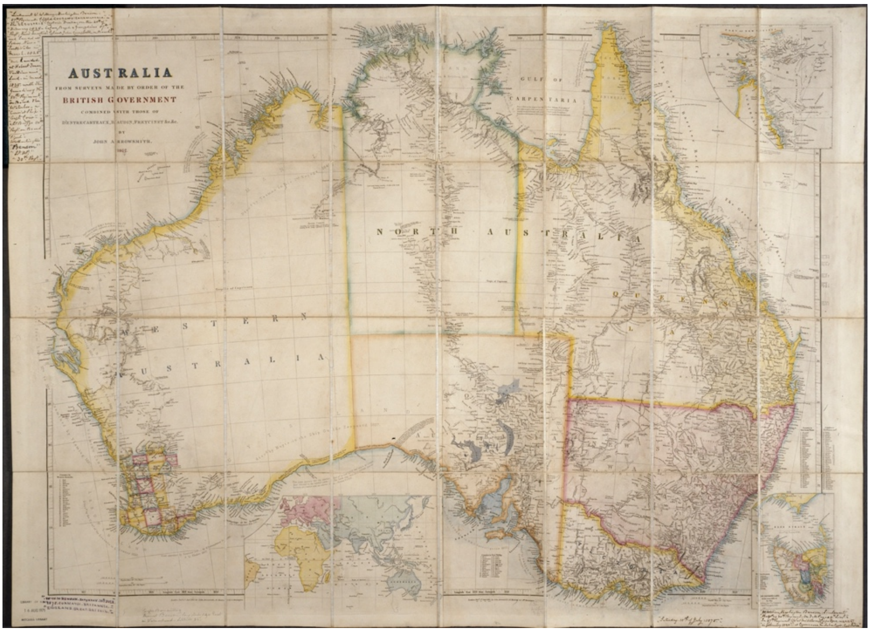
colonies and in articulating the need to ensure a degree of independence for the territories in regard to dividing the western coastal region into a further four colonies after Victoria had been established in the 1850s.[908]

As the clerk Gordon Gairdner read through Bowen's text in London he made annotations in the margin when he believed "that there was no definite idea on the subject." Indeed, he added that "The boundaries adopted were those furnished at last by the N. S. Wales Gov."[909] However, he also noted that the interpretation of the law officers, referred to by Bowen, was the "obvious reading of the Instructions in which the Boundaries were laid down".[910] The thoughts of Bowen and Gairdner reveal that communicating accurate information about the western boundary had not been entirely successful. In the Letters Patent, as Trelawny Saunders noted, there was no clear definition for the western boundary as it was only stated that the southern boundary continued until the 141st meridian East.[911]

Furthermore, if one examines the papers printed for Parliament, which Saunders referred to, it is apparent that the western boundary was not a matter of concern on the map printed with them. This document had been prepared at the Survey Office in Sydney and lithographed by Arrowsmith. Instead, the map focuses on visualizing the description of the southern boundary.[912] Consequently, it is understandable in this context that confusion about the position of the western boundary existed. As a result of the vague definition of the western boundary and the answer given to Saunders by the Colonial Office, it is unsurprising that the map published by Stanford's Geographical Establishment in 1860 did not depict the 141st meridian as the colony's boundary.[913] The same reasoning can possibly be applied to the maps produced by Arrowsmith and others: it was assumed that the boundary of the colony coincided with the boundary of Western Australia and this resulted in mapping the territory in the way it was. It is impossible to determine this without locating further material that would reveal something about the preparation of the maps. Such an understanding was, however, put forward by *The Moreton Bay Courier*, where one article stated the general agreement about locating the boundary at the 129th East longitude was so "confirmed" that "Arrowsmith marked Queensland down on his Australian map as extending from the meridian above mentioned to the Pacific".[914] Furthermore, the confusion about the position of the western boundary of Queensland does not fully explain how North Australia featured on most of the commercial maps. Perhaps this demonstrates the separate circuits of communication that existed when it came to legislative and administrative information.

[908] Lang 1852.
[909] Annotation by Gairdner in Bowen to Newcastle 30 September 1860 no. 79, f. 87, CO 234/2, TNA.
[910] Annotation by Gairdner in Bowen to Newcastle 30 September 1860 no. 79, f. 88, CO 234/2, TNA.
[911] Letters Patent establishing the Colony of Queensland 6 June 1859, Founding Docs.
[912] "Map shewing the proposed boundary between New South Wales and the Moreton Bay Colony and the Proposed Division of that Colony into Electoral Districts 1858", in *Papers relative to the Separation of the Moreton Bay District from New South Wales, and the Establishment of a Separate Government*, 1858.
[913] CO 700/Australia23, TNA.
[914] See "The Moreton Bay Courier", *The Moreton Bay Courier*, 15 December 1860, 2.

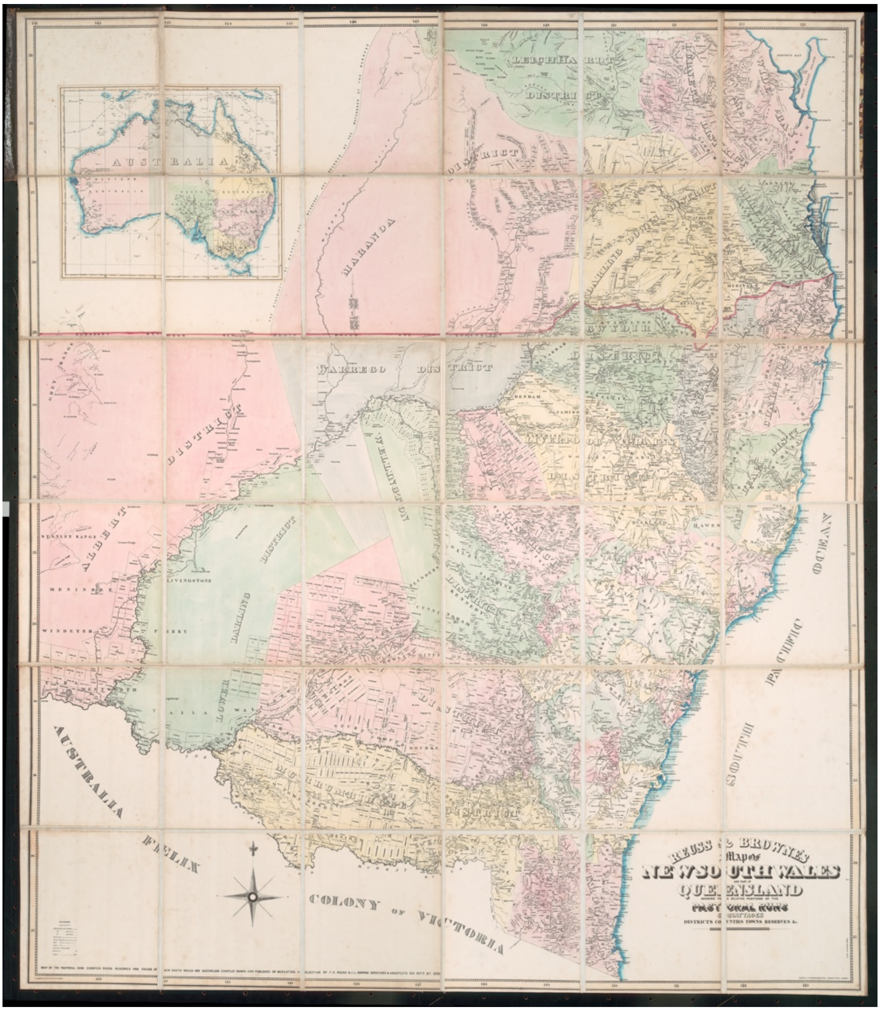
The reading of the Letters Patent and its cartographical implications in London can be further examined in comparison to the maps that were prepared in the Australian colonies that depicted the whole continent. Maps of the entire continent were generally few and far between and therefore making comprehensive comparisons to those that were published in Britain or Europe is impossible. Hence, these observations are in no way comprehensive, but are indicative. Nevertheless, it can be noted that the maps that were prepared some 16,000 miles from Great Britain in the beginning of the 1860s do not represent North Australia. For example, a map published by the government of Victoria and a subsequent imitation, which was published in 1861, document the northern territory as an unnamed portion of the continent.[915] The colonial territories are represented in a similar manner in an inset map printed in the corner of a large-scale map of New South Wales and part of Queensland that was produced by F. H. Reuss and J. L Browne in Sydney in 1860 (see the reproduction of the map on the next page).[916]



North Australia remained on John Arrowsmith's maps even though the cartographer acknowledged the establishment of Queensland as a separate territory. Arrowsmith, J. *Australia from surveys made by order of the British Government*, 1862, Z/MC 804/1862/1, SLNSW.

[915] Meek, J. *General map of Australia shewing the routes of the explorers* [...], 1861, MAP RM 869, TNA; Price, E. *General map of Australia* [...], 1861, MAP RM 868 (Copy 1), NLA.

[916] Reuss, F. & Browne, J. 1860, *Reuss & Browne's map of New South Wales and part of Queensland,* MAP NK 5928, NLA. A later edition of the map was part of the Colonial Office's map collection. See CO 700/NewSouthWales39, TNA.



The maps prepared in the Australian colonies differed in their representation of the colonial territories compared to the those prepared overseas. The inset map in Reuss and Browne's map of New South Wales represents the central-north areas of the continent as a territory without a name. Reuss, F. H. & Browne, J. L. *Reuss & Browne's map of New South Wales and part of Queensland,* 1860, MAP NK 5928, NLA.

In the midst of the discussions regarding the location of the western boundary, governor Bowen urged the extension of the colony's boundary further west, as documented on Gregory's map. Simultaneously, the question of governing the north also attracted more attention from South Australia, for example. Finally—as the imperial government was reluctant to establish a new colony—it was necessary to determine whether the tract of land should be governed as a part of Queensland or South Australia.[917] The need to decide about the organization of administrative control over the area became acute when the civil servants became aware that settlers were beginning to reach the western boundary of Queensland.[918] The civil servants thought that the area should be annexed to Queensland, based on geographical accessibility. However, when they consulted the colonies in 1862 they received a unanimous response that the region was naturally more connected to Adelaide than Brisbane.[919] For the civil servants this was somewhat surprising, but not entirely unexpected. Gairdner, for example, commented that officials in Queensland probably had no interest in the area, as they wished to alter the boundary that had already been agreed in March 1862. Thus, in July 1863 a decision was made to expand the territory of South Australia to the northern coast.[920]

During the entire process about deciding the location of the boundaries, Bowen communicated up-to-date maps of Queensland that depicted the whole extent of the territory. This can be interpreted as an attempt to disseminate an up-to-date cartographic image of the colony. Bowen wrote to officials in London in 1862 and 1863 in order to convey reference maps of the colony for the Colonial Office, which he also asked to be communicated

917 The Colonial Office preferred waiting for a settlement to expand before determining who should govern the area. See Newcastle's response to MacDonnell's suggestion to annex the territory to South Australia. See Newcastle to MacDonnell no. 25 26 February 1861 GRG2/1/21, SROSA. For a similar opinion, expressed a few years before, see Gordon Gairdner's minute written in reference to a suggestion to plant a colony in the north, which was received from Victoria in the beginning of 1859, that is, a few months before Queensland was founded. A minute by Gairdner 12 April 1859 in Barkly to Newcastle 27 January 1859 no. 12, ff. 62-63, CO 309/48, TNA.

918 Rogers to Emigration Commissioners 11 August 1862, copy of letter as enclosure in Newcastle to Daly 21 September 1862 no. 39, GRG2/1/22, SROSA; Murdoch to Rogers 19 August 1862, ff. 395-400 CO 234/7, TNA. This information probably derived from Charles Nicholson (1808-1903), who approached the Secretary of State in July 1862 with a proposition to either establish a new colony in the north or to annex the "left-over" territory to Queensland. Nicholson, a man of many interests, had established his reputation in the political sphere in New South Wales and was the president of the Legislative Council of Queensland until 1862, when he travelled to Britain. In his letter, Nicholson argued that settlements were rapidly progressing to the north, north-west and west in Queensland. In Nicholson's view, it was necessary to immediately establish a separate government over the northern territory in order to avoid the creation of a chaotic zone of anarchy and crime that would be difficult to erase if governance would be later extended over the area. See Nicholson to Newcastle July 1862 in Newcastle to Daly 21 September 1862 no. 39, GRG2/1/22. SROSA.

919 The discussion is documented in the following letters and the minutes therein: Newcastle to Daly 21 September 1862 no. 39 GRG2/1/22; Draft letter to Young 21 September 1862 in Murdoch to Rogers 19 August 1862, 406-407, CO 234/7, TNA; Draft letter to Bowen 21 September 1862 in Murdoch to Rogers 19 August 1862, 408-410 CO 234/7, TNA; Extract from the minutes of the Executive Council, held on November 25, 1862 in MacDonnell to Newcastle 26 November 1862 no. 68, CO 13/110, TNA; MacDonnell to Newcastle 26 November 1862 no. 68, CO 13/110, TNA; A minute by Cox 22 January 1863 and a minute by Rogers 22 January 1863 in MacDonnell to Newcastle 26 November 1862 no. 68, ff. 299-300, CO 13/110, TNA; Bowen to Newcastle 18 January 1863 no. 5, ff. 24-33, CO 234/8, TNA; Proceedings of the Executive Council in Bowen to Newcastle 18 January 1863 no. 5. CO 234/8, TNA, ff. 36–40; Gregory to Bowen 23 November 1862 in Bowen to Newcastle 18 January 1863 no. 5, ff. 41-46, CO 234/8, TNA, ff. 41-46; A minute by Cox 24 March 1863 and a minute by Rogers 25 March 1863 in Bowen to Newcastle 18 January 1863 no. 5, ff. 33-34, 48, CO 234/8, TNA.

920 A minute by Cox 24 March 1863 and a minute by Rogers 25 March 1863 in Bowen to Newcastle 18 January 1863 no. 5, ff. 33-34, 48, CO 234/8, TNA.

to the RGS.[921] On both occasions Bowen sent the maps as part of book almanacs of the colony. However, in his letters he explicitly stated that he hoped to bring to the attention of the secretary of state the maps attached with the almanacs. Referring to one of these maps in 1862, Bowen wrote that it was "the fullest and most accurate, as well as the most compendious map of Queensland which has hitherto been published".[922] The map depicted the colony as it was at the time, but also depicted the suggested alterations to the boundaries. A year later Bowen noted that the map that accompanied the almanac was special, as for the first time it displayed the boundaries of the colony according to the Letters Patent of 1862. Bowen referred to the map as "the only authentic description of the boundaries and divisions of Queensland which has hitherto (so far as I know) been published".[923]

Bowen does not identify the almanacs by name, but presumably they were *Pugh's Almanacs*, which Theophilus P. Pugh (1831–1896), a journalist and politician, had been publishing since 1859. Pugh had been instrumental in the process that led to the separation of the colony from New South Wales and was the first unofficial government printer, who oversaw the publication of the first government gazettes from 1859 until 1863. The almanacs contained an abundance of information about the colony,[924] and on a few occasions maps like the ones referred to by Bowen.[925] Griggs notes that these maps of the colony were significantly more detailed than the ones published in Great Britain.[926] On both occasions, the maps transmitted by Bowen had been prepared by private printers—Thomas Ham and Pugh—not the Survey Department.[927] Bowen noted that Gregory, the surveyor-general, had revised the 1862 map and thought that "even in a mechanical point of view, it is a very creditable production for this young Colony".[928]

What is of interest in Bowen's dispatches is the way he emphasizes the maps as communicators of the latest and fullest information about the territorial extent of Queensland by representing its boundaries. As such, the maps served the interests of Bowen, who sought to promote immigration in order to boost the population and the use of the resources of the colony. It also served the interests of Pugh.[929] The governor of South Australia, Richard MacDonnell, did not make similar efforts, via the use of maps, to promote

[921] Bowen to Newcastle 8 January 1863 no. 2, f. 5, CO 234/8, TNA; Bowen to Newcastle 12 January 1862 no. 5, f. 52, CO 234/6, TNA.
[922] Bowen to Newcastle 12 January 1862 no. 5, f. 52, CO 234/6, TNA. The almanacs were transmitted according to the 251st article of Queen Victoria's Colonial Regulations.
[923] Bowen to Newcastle 8 January 1863 no. 2, ff. 4-5, CO 234/8, TNA.
[924] This information included for example directories, information about the weather and the tides, and a gardening calendar.
[925] Lack 1974; Fisher 2009, 217. The publication of the almanacs continued until 1927.
[926] Griggs 2017.
[927] Thomas Ham prepared the maps in Moreton Bay. The 1862 map was the first chromo-lithograph printed in the colony. Fisher 2009, 217.
[928] Bowen to Newcastle 12 January 1862 no. 5, f. 52, CO 234/6, TNA.
[929] Joyce 1969; Lack 1974.

the cohesion of the expanded colony. However, a map depicting the territory did accompany a pamphlet speedily compiled in 1863 by the government of South Australia in order to be used as a guide for the area. This map contained descriptions of the area. In combination, the pamphlet and the map transformed a dry legal act into a vivid colonial geography that could be communicated "to the use of intending settlers or purchasers".[930]

Maps, such as these, that displayed the limits of colonial territory in order to promote migration, or to highlight the resources of the territories, stand out when examined in comparison to the other maps of the colonies. If we consider the maps of the colonies that were in circulation in the mid-nineteenth century, it is apparent that the colonies were in sync with the surveyed areas of the territories until the 1860s. Alan Atkinson notes that this is evident in the way Thomas Mitchell, for example, wrote about New South Wales,[931] and it is also apparent from the different maps that were prepared of the colonies. It was necessary only to depict the immediate proximity of settlements, not the entire territory.[932]

Consequently, a map promoting the colonial territory and its limits as a whole was produced in a different manner. The content of the maps was not commented on by the civil servants or by fellows of the RGS, where Bowen's maps were sent. The traces left concerning the map are of a practical nature: in 1862, the map was loaned to the RGS and after it was returned it was stored with the dispatch. No references exist that the maps would have been shown to Arrowsmith: this was perhaps due to Arrowsmith's retirement in 1861. The civil servants were interested in the references Bowen made in his dispatch, regarding the documentation of the routes taken by the Victorian Exploring Expedition on the map and the content of the almanacs.[933] The RGS was interested in receiving the promised copies of the almanac, and in 1863 announced the arrival of the map and new data by conveying

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930 "Northern territory of South Australia. Accompanied with a map. (Adelaide 1863)" in Daly to Newcastle 26 November 1863 no. 76, CO 13/112, TNA.

931 Atkinson 2004, 86–87.

932 See, for example, the following maps of Western Australia that were once part of the collections of the Survey Department: Arrowsmith, J., *Discoveries in Western Australia from documents furnished to the Colonial Office,* 1833, AU WA S50- cons3423 185, SROWA; Arrowsmith, J. *The Colony of Western Australia from the surveys of J.S. Roe, etc.,* 1839, AU WA S50- cons3423 202, SROWA. For maps of South Australia in circulation at the time see, for example Arrowsmith, J. *South Australia shewing the division into counties* [...], 1858, MAP T 1444, NLA. See also Mitchell's maps of the colony. See MPG 461, TNA.

933 A minute by Cox 20 March 1862 in Bowen to Newcastle 12 January 1862 no. 5, f. 54, CO 234/6, TNA; Draft to the Secretary of the RGS 3 April 1862 in Bowen to Newcastle 12 January 1862 no. 5, f. 57, CO 234/6, TNA; Annotation by Cox 24 March 1863 in Bowen to Newcastle 8 January 1863 no. 2, ff. 5-6, CO 234/8, TNA; Annotation by Rogers s. d. in Bowen to Newcastle 8 January 1863 no. 2, f. 6, CO 234/8, TNA; Draft to the Secretary of the RGS 16 April 1863 in Bowen to Newcastle 8 January 1863 no. 2, f. 7, CO 234/8, TNA; See also Bowen to Newcastle 12 January 1862 no. 5, ff. 53-54, CO 234/6, TNA.

the information at a meeting and by printing it in its *Proceedings*.[934] It is likely that Arrowsmith saw the maps at the RGS if not at the Colonial Office as he served on the society's council until 1868.[935]

The very limited clues remaining do not reveal how the maps were read. What is clear is that Arrowsmith's maps of the continent did not document the alterations to the sizes of Queensland and South Australia. As Prescott has identified, the last state of Arrowsmith's map of the continent depicts the altered western boundary of Queensland, whilst retaining the name "North Australia" on the map. Prescott deduces that the last state of the map she has been able to locate was printed in 1863, thus incorporating the alteration made in March 1862.[936] As no later states of the map have been located, we do not know if Arrowsmith ever documented the extension of the territory of South Australia to the northern coast, which took place in July 1863. As Coolie Verner notes, Arrowsmith's obituary in the *Ocean Highways* by geographer and cartographer Alexander G. Findlay (1812–1875) contains a reference to "some very fine and elaborate maps of each of the great Australian colonies unfinished, and awaiting for the perfection he wished for, but could never attain".[937] What these maps were, neither Verner nor anyone else has identified accurately. We do know that Edward Stanford bought Arrowsmith's plates and his stock of maps upon the cartographer's death. Stanford utilized the plates when publishing his two different "editions" of *Stanford's Atlas of Universal Geography*, which were his last major works.[938]

An important question to consider when examining the way Arrowsmith and other mapmakers acknowledged the political territories that were created, is to ask how such maps were read. This is impossible to settle without material being available that would help us find out more about how the maps were read. Moreover, without documentation we do not know how encounters with these maps produced meaning. Based on the material that I have examined, the civil servants at the Colonial Office made no references regarding the inclusion of North Australia on the maps. It seems most probable that they did not attempt to alter its representation on the continent.

Neither have I been able to locate any extensive discussions about the constant mapping of North Australia on British maps in other archives. The inclusion of North Australia on the maps did not provoke heated discussion in the colonial press, as was the case with

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[934] Shaw to Rogers 4 April 1862, f. 458, CO 234/7, TNA; Draft to the Secretary of the RGS 11 April 1862 in Shaw to Rogers 4 April 1862, f. 459, CO 234/7, TNA; Shaw to Rogers 30 April 1862, f. 460, CO 234/7, TNA; Shaw to Rogers 17 April 1863, f. 139, CO 234/9, TNA; *PRGS*, vol. 7, no. 3, 1862, 110–111; *PRGS*, vol. 7, no. 3, 1862, 111–116.

[935] Verner 1971a, 3.

[936] Prescott 2012o.

[937] Verner 1971a, 4. See also Findlay 1873, 124. *Ocean Highways: The Geographical Record* was a journal established by Clements C. Markham in 1874 to communicate geographical knowledge in a more popular form. See Cameron 1980, 203; Butlin 2005, 26.

[938] Verner 1971a, 7; Herbert 1989; Herbert 2004. The two "editions" were the Quarto Edition issued from 1882 and the Folio Edition issued from 1887. See Herbert 1989, 110. Prescott has identified that Stanford prepared at least two different states of Arrowsmith's east and west sheet plates for the atlas. See Prescott 2012a; Prescott 2012e.

Arrowsmith's choices in his representation of the physical environment. At the RGS meetings in March and May 1863, in which the geography of the interior was discussed vis-à-vis the organization of the colonial administration, the president of the society, Roderick I. Murchison, briefly referenced the "mapping out of North Australia" on maps published in the late 1840s. Murchison noted that " [a]lthough a great many years ago they had marked upon a map of the Society of Useful Knowledge the colony of 'North Australia,' no such colony had ever been formed [...]".[939] On these occasions, the maps that featured the colony designed by Lord Stanley are referred to as records of something that never came to be. Simultaneously, they were regarded as testimonies of a colonial enterprise on the northern coast that had once existed. It remains an open question how other individuals read these maps, and, for example, why Arrowsmith chose to leave the name of the short-lived colony on his map into the 1860s. Ultimately, the long map-life of North Australia demonstrates that maps were not the primary records of territorial sovereignty in an Australian context. Rather, legal instruments were.

My examination of the fluid representation and understanding of depicting boundaries on maps of Australia and the importance of the legal instruments in defining them warrants some further contemplations regarding the significance of cartographic representations of the extent of colonial territories. The roles of different kinds of map in making visible particular territories as historically and geographically coherent has received excessive attention by scholars of different geographical and temporal contexts. The importance of cartographical techniques in making the territory visible connects these studies: surveys made the country legible and the assignment of boundaries through legal instruments constituted territorial sovereignty.[940] However, as Stuart Elden notes, the central questions to consider when examining the importance of cartography in these processes are "what kind of map is required, or what kind of cartographic techniques are needed for the production of territory"?[941] Often these type of questions are posed in an international context, in which mapping and the establishment of boundaries serve the interests of the administrators of different nation-states.[942] It has been suggested that in colonial contexts the implications of early modern European boundary-making processes in overseas territories constituted the development of territorial sovereignty in Europe.[943]

Elden's observations can be developed further by comparing them to Raymond B. Craib's work on nineteenth-century Mexico. Craib notes that small-scale maps in Mexico in the nineteenth century did not have a practical role in the daily administration of the

939 *PRGS*, 1862, vol. 7, no. 3, 91. See also *PRGS,* 1862, vol. 7, no. 3, 116.
940 For example, see the following studies: Edney 1997; Biggs 1999; Michael 2007; Fedman 2012; Greenlee 2015.
941 Elden 2014, 326.
942 For example Konvitz 1987; Edney 1997; Craib 2004; Strandsbjerg 2008; Strandsbjerg 2010; Craib 2012.
943 Branch 2012.

country, due to their level of accuracy in documenting the territory.[944] Consequently, general maps served a different purpose: they were effective tools in legitimating the external and internal aspects of political territories. Thus, in Craib's interpretation the map of the Mexican nation state could be used to visually argue for the existence of a coherent territory and to symbolically affirm the existence of a political reality.[945]

Viewed in the context of the Australian colonies, the argument made by Craib proves to be temporally and geographically contingent. In terms of administration it was important to assign clear boundaries, but it appears that affirming them through cartography was not that central. Indeed, the equivalent for Craib's point is clearest in the case of Queensland, where the locations of the boundaries were subject to discussion. Prior to this, the cartographic representations of the continent were characterized by fluidity, which epitomized the problems inherent in the circuits of information at the time regarding the positions of the boundaries. Maps of Queensland in the 1860s, as well as maps of the entire continent, affirmed the status of newly established and expanded territories through the publication of small-scale maps.

If one examines the decisions to establish new colonies and expand their territory with the maps that were produced in different parts of the globe, one can see how we cannot take for granted that "imperial" maps would serve territorial interests in a straightforward manner. The examples studied in this work evince the risk of reading maps as manifestations of clearly defined interests and intents. Instead, they demonstrate the need for contextual sensitivity as John Pickles has previously pointed out.[946] In effect, my findings demonstrate how what we see on a map should always be considered—when possible—in relation to the other material documenting spatial understandings. Similarly, my findings also serve to demonstrate the geographically conditioned ways whereby maps produce the world that for example Denis Wood and John Fels have stressed.[947] Simultaneously, however, the small-scale maps of the continent serve as important reminders that maps could "produce and reaffirm" territories, but that they could also contest them. Contextual analysis that traces the production, circulation and consumption of maps—the study of "mapping actions and mapping effects" to borrow James Corner's phrasing—thus has enormous potential to shape our understanding of how maps constantly remake territories instead of fixing them.[948]

To conclude, the discussions and decisions that shaped the size of the territories demonstrate how the continental space was akin to a jig-saw puzzle, which could be experimented on and broken into pieces as a result of different motives. They demonstrate in a very straightforward manner how maps participated in the production and construction

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944 Craib 2012, 37. See also Edney 1997; Edney 2007.
945 Craib 2012, 34–35, 37–38. See also Craib 2004.
946 Pickles 2004, 174. Pickles 2004, 174.
947 For their arguments see, for example, Wood & Fels, 2008.
948 Corner 1999, 213.

of territorial realities in many different ways. In essence, they make clear that the cartographic representation of the decisions that were made was context-dependent. Furthermore, it should not be presumed that the depictions found in maps aligned with the decisions made by colonial officials.

Chapter Conclusions

This chapter has examined the role of John Arrowsmith as an important ally for the Colonial Office and as an individual actor who had a significant role in making geographical knowledge through his maps. Arrowsmith was trusted by the Colonial Office and was rewarded with an authoritative position as a constructor of Australian geographies. Arrowsmith's symbiotic relationship with the Colonial Office brought about important steps in the process of synthesis vis-à-vis different types of maps. Arrowsmith's role was diverse: he was both a private practitioner and an official collaborator with a government department, whose work shaped the way different actors thought in regard to the Australian colonies and the continent as a space. Consequently, Arrowsmith emerges as an influential knowledge-broker who managed the abundance of cartographic and geographical data and materialized it in new ways. Arrowsmith's maps enabled multiple audiences to see the main characteristics of the continent and its colonies at a glance.

My examination of the different material clearly demonstrates how Arrowsmith's participation in the construction of Australian geographies was affected by many factors besides the cartographer's own search for perfection. Mundane issues, especially the availability of accurate and comprehensive information, influenced the depiction of political as well as physical geographies of a particular area. This also affected the speed at which maps could be prepared. These points become clear in the way North Australia was mapped on Arrowsmith's, but also on many other British maps for an extensive period of time. My findings also point to the need for further research especially in terms of the mapmakers' practices of copying and referencing each other in regard to the circulation of cartographical knowledge.

My examination also emphasizes how we cannot assume that the geographies of Australia that were represented on maps necessarily corresponded with other documents that contributed to the process of spatialization. My investigation of Arrowsmith's mappings of the Australian continent aptly demonstrates points made by for example Matthew Edney. Edney highlights the acknowledged, yet often forgotten, point that maps should not be equated with spatial understandings and should not be seen as the only material that produced spatiality. Furthermore, as Doreen Massey states: "maps [...] give the impression that space is a surface",[949] but this is not enough to understand space. Similarly, Edney has argued that examining other materials, such as texts, when examining maps is essential in order to realize how they also produce spatial relations.[950] As my examination of the different maps of Australia demonstrates, these documents formed only a part of a constant process of producing geographies. Moreover, they cannot be equated with the conceptualizations held by the majority of actors who were involved in Australian affairs. Many other types of representation—legal instruments in the case of political entities for example—played important roles in this process.

Determining how different actors acknowledged the relationship between a variety of material is often challenging, due to the limited documentation related to the consumption of maps. Arrowsmith's maps were often commented upon on the occasions when their content was disputed. The debates over the significance of particular observations, between different actors and localities, demonstrate the layered and interactive nature of knowledge formation that occurred simultaneously in the colonies and in Britain. They also exemplify how different types of material, such as maps and newspapers, together participated in the making of geographies. My investigation demonstrates how newspapers can be a particularly valuable source when seeking to trace at least some of the instances of how maps were read and to consequently examine how readers fixed their own meanings to the maps. In sum, my examination of Arrowsmith's mapping of Australia demonstrates that filling in the "blanks" on the Australian continent was a contingent process. It was constituted as much by the circulation of different material between different geographical locations as it was by the processes of selection, compilation and construction that served to generate generalized geographical conceptualizations about the continent.

[949] Massey 2005, 145.
[950] Edney 2011b, 338.

CONCLUSIONS AND IMPLICATIONS

This study began with Richard MacDonnell's remarks in 1863 regarding the difficulty in describing "what Australia is" due to material that is "so vast, and so difficult of arrangement". I set out to examine how British geographies of Australia were made in the mid-nineteenth century. Consequently, I have explored the processes and practices that constituted the management of the enormous amount of information that the exploring and surveying of the Australian continent produced. This study adopted recent theories and methods that have been developed in the history of cartography and the history of knowledge. In particular I approached my research problem with *circulation* as my main methodological tool, which was utilized to analyze how the process of knowledge formation occurred.

The substantial chapters that followed examined the flow of geographical and cartographical data that circulated from the colonies within the official correspondence. As has been shown in the course of this study, a complex network of different actors participated in the analysis of the different material. However, different actors gained access to this material in varying ways and thus the processes of analysis had different outcomes in terms of publication, preservation and utilization of the information in different locations. Consequently, the empirical findings presented in the three main chapters demonstrate the processional nature of knowledge-making. They highlight the importance of acknowledging the simultaneous knowledge-work and knowledge brokering of multiple actors in the process of forming geographical knowledge of Australia.

In the first chapter I focused on what the civil servants did with the different material they received, in terms of how they analyzed the geographical knowledge therein and how they consulted the maps that had been sent. The second chapter turned to examine how civil servants selected texts and maps that were published in the parliamentary papers and how they transmitted sections of the material to the RGS. This chapter also examined what the society did with the material it received. In the third chapter, I examined the role of the cartographer John Arrowsmith and his maps in the process of circulating geographical and cartographical knowledge. In all chapters I analyzed the numerous complexities that were part of the process of knowledge formation at different sites. These included factors affecting the movement of the material, the mediation of their content, and questions regarding their preservation. Throughout this study I have aimed to uncover what different individuals thought of the material they worked with and consequently what purpose this material served in communicating and forming geographical knowledge of the continent.

My research methods were based on reading the different material as parts of the process of forming geographical knowledge about the Australian continent. I examined the marginalia contained in the different material: primarily the insertions found in the official correspondence between the Australian colonies and the Colonial Office. I also analyzed the other correspondence and investigated the different types of textual and cartographical material (manuscript and print) that the different actors had at their disposal in different locations. When pertinent, I examined the material that was produced and analyzed by the main actors that are the focus of this study, with the other textual and cartographic material that was in circulation at the time in the Australian colonies, Britain and Europe. My empirical research has resulted in numerous research findings that corroborate and advance the observations and conclusions of previous research. In what follows I will present five statements based on my empirical findings in reference to the existing research this study relates to and contemplate their implications for future research.

1: The production of British geographies of Australia was a spatio-temporal process

The empirical findings of this study demonstrate how the location of knowledge-work and the practices of communication influenced the type of knowledge that the actors were able to form. In addition to being spatially conditioned, temporality also played a crucial role in determining the type of knowledge that was produced. The knowledge-work undertaken by the governors, civil servants, the RGS and John Arrowsmith resulted in the formation of types of knowledge that constituted their understanding of the geography of the continent. This geographical knowledge depended on the pace at which different material became available in various locations. It was contingent on the tempo with which the information they contained was publicized in different locations and the ideals and criteria of evaluation that were applied by the individuals charged with assessing the data. The significance of a piece of knowledge regarding Australia depended on the interests of the individual using the data: for geographers, cartographers and settlers the 'unknown' areas were lucrative targets for exploration; for the colonial and imperial government geographical expansion of the settlements was also a question of administration in addition to providing opportunities for acquiring further resources.

The proximity to the field of governors, explorers and surveyors, as well as colonial developments and the latest geographical knowledge available, played a role in how conclusions were drawn. This contrasted with the filtered information that reached Britain and the type of knowledge that was formed there by officials and the public. As such, this study brings to the fore the observations made in present scholarship regarding the geographies of scientific practices. Simultaneously, it goes beyond the situated nature of knowledge making by taking the connections between the different locations as the starting point for knowledge formation.

The examination of the links between the various places studied in this study and the ways different actors worked with the information in order to transform it into knowledge demonstrates that both the 'local' nature of knowledge, as well as its generalizations, emerged as a result of the processes of circulation and knowledge work of different actors. Consequently, the making of geographies was highly dependent on sites of knowledge-work, but also on the interconnections between these localities. The multilayered character of the processes that took place constituted the complex processes of establishing and contesting particular structures of knowledge.

These points, regarding the geography of knowledge-making and understanding the process of knowledge-making as a geographically occurring process, have implications for the ways we should assess how maps were produced, for example, but also regarding how they were used and consumed in different locations. Historians of cartography have stressed that we should be very cautious when deducing how maps were used in the hands of the different individuals that consumed them. This argument connects with the idea of the 'unfixed' nature of maps: the significance of cartography cannot be assumed based on the map itself. Instead, they have to be studied by engaging with the processes where they are used and by being sensitive to the geographies of map production and consumption.

The observations that I make throughout this study regarding the uses of maps corroborate these views. They also raise the question of their representativeness, as well as the problematic issue of trying to ascertain how the maps were routinely used. Civil servants in London and the Australian colonies, for example, seem to have recorded minutes when a map was deemed to warrant special comments. However, the majority of instances that involved the examination of maps escape our attention. Special occasions inform us about what was considered extraordinary and how these situations were dealt with. The disputes that arose in the Australian colonies regarding the depiction of particular features on Arrowsmith's maps demonstrate the reactions to perceived errors. At the same time, they inform us about the expectations attached to how these maps should be used. However, these instances do not inform us about the multitude of ways that different maps were consumed. Thus, they should not be treated as such in an uncritical manner. Consequently, it is a challenge to ascertain how Britons in the Georgian and Victorians ages actually understood Australia as a space through the different maps that they encountered. The implication of these observations is that the geographies that were made not only differed geographically but their materializations as maps and texts could and were consumed differently according to location.

Acknowledging the spatio-temporal character of the process of knowledge-making brings to the fore the complex and crucial questions of how shared understandings of a particular phenomenon actually occur in practice. As has been shown in the course of this study, directing attention to the social practices that underpinned these processes is vital when seeking to understand how pieces of geographical knowledge produced in different parts of the continent became embedded into systems of knowledge that stretched across a variety of spatial scales. In essence, research on the production of knowledge requires being sensitive to the 'geographies' of knowledge-work and the interconnections between different locations.

2: Geographical knowledge of Australia was produced by chains of knowledge brokers

An important research finding of this study is the identification of the roles of different individuals as mediators and knowledge brokers, whose actions influenced the contents of the knowledge that was made. The civil servants, cartographers, and the RGS forwarded or withheld material and information from other actors as they worked with them on a daily basis. The research findings herein demonstrate how the networks of communication that existed can be characterized as a system of knowledge work. This study identifies a chain of communication that filtered and funneled information, which effectively constituted the production of British geographies of Australia. My research demonstrates that the different actors closely involved in these chains of communication were knowledge brokers with varying roles: they linked, managed and enhanced accessibility to geographical knowledge and consequently constituted the making of geographical knowledge of Australia.

This study identifies how governors and, in particular, permanent government officials accumulated knowledge through encounters with different pieces of information. This process was marked by different stages of synthesis, whereby information was put into perspective. This knowledge work necessitated an ability to evaluate the new pieces of information that continued to arrive on the desks of the civil servants. These officials had to make decisions about how this data should be used in government publications and they had to organize how it was circulated to different actors. This knowledge also played a significant role in how they understood the colonies and the Australian continent as spaces for colonization.

Similarly, the RGS was an important manager of geographical knowledge and it functioned as the Colonial Office's primary means to circulate geographical knowledge to the audience that was interested in exploration and geography. The knowledge work that the RGS undertook constituted a different stage of analysis, as the civil servants had already selected what should be forwarded and when. The work of the council of the society was important in determining what was read, refereed and published from the different pieces of information. These chains of analysis marked practices of synthesis that became public. This was most visible in the publications issued by the RGS and in the meetings where the geography of the continent was discussed. Consequently, the RGS created spaces for analysis, which enabled comparison and contemplation of the different pieces of information that were available: the publications that included different types of cut-and-paste article accumulated into a specific kind of record of the knowledge that had been gained.

This research recognizes John Arrowsmith as an important knowledge broker in the chain of communication: he enhanced the accessibility of the multitude of knowledge that was produced by the various surveys and exploration undertaken in Australia. He liaised with many different parties in order to compile a generalized form of geographical knowledge on his maps. His work was essential in constructing comparative knowledge of the continent. The maps that Arrowsmith prepared represent the process of funneling: his general maps, in particular, served as a filtered interface between the extensive amount of information that arrived in London from different parties and the generalized output that reached the public. He was simultaneously an important link between the Colonial Office, the consumers of the parliamentary papers and the publications of the RGS, through his work on preparing maps for print. Consequently, Arrowsmith was an important node in the overall process of circulation: he facilitated the work of others and provided entirely new forms of knowledge for different audiences to consume. However, his work depended on the functioning of the overall system of transmitting information.

Depending on the situation, the type of mediation varied: for example the civil servants at the Colonial Office acted as links between the different actors, such as the explorers, governors and the RGS. In other situations they themselves enhanced the availability of the knowledge by making it accessible to different parties. They also worked with the knowledge they received in preparing it for publication in the parliamentary papers. My research therefore demonstrates that colonial actors often worked with the geographical knowledge they encountered in many ways, according to their own needs and the assumed needs of others. Hence, it is difficult and unnecessary to apply strict categorizations to their work.

This study corroborates the theoretical and methodological possibilities of circulation that posits that it is possible to build frameworks for empirical studies regarding the making of (geographical) knowledge. In my view, it is not possible to investigate why something starts to circulate as knowledge without taking into consideration questions of mediation. This study has demonstrated the fruitfulness and importance of engaging with these instances in order to understand how knowledge and conceptualizations are established from a large mass of information. Engaging with circulation as a process of translations and transformations, which were constituted by instances of knowledge brokering, also enforces the need to be critical when using 'circulation' as an analytical tool. This is especially the case when bearing in mind the criticisms expressed by historians of science and knowledge vis-à-vis the need for rigor when attempting to uncover the formation of knowledge. In essence, my research points to the usefulness of paying attention to the complexities and the "multidirectional and messy" nature of circulation in order to be able to grasp the fabric of the multifaceted process of knowledge formation.

In sum, research on knowledge circulation enables us to analyze the nodes of transformation that functioned as constitutive parts in the production of knowledge. Moreover, it also helps to identify the key practices and individuals in this process. The different knowledge brokers had a variety of roles in the process, whereby information was synthesized. However, their work was also co-constitutive and interlinked.

3: Copying and multi-modality contributed to the production of geographical knowledge

The empirical findings of this study suggest that copying and multi-modality should be analyzed as a way to understand how geographical knowledge was formed. My research documents that the governors' dispatches had a significant role in communicating geographical knowledge from the Australian colonies to Britain, where they were employed in different publications. As a formal form of correspondence, the dispatches constituted many of the papers that were printed for the House of Commons. In addition, they were important for the RGS, which published pieces in its journals that were based on the governors' dispatches. This demonstrates the role of the dispatches as useful condensed accounts of the developments that had taken place in the Australian colonies and the information that had been gained. Furthermore, the RGS occasionally reprinted articles from the colonial press and composed summaries of the information that had arrived. The roles of the dispatches, as a part of the communications that were sent to the RGS, and their extensive use in the publications are noteworthy. They point to the important epistemological role they played and the convenient form they took in terms of knowing the Australian continent.

This study has also demonstrated the interconnected nature between the maps that arrived from the colonies and those that were printed individually and as part of the parliamentary papers in Britain. However, my examination has not confirmed the assumption that a similar straightforward connection would exist between Arrowsmith's maps in the publications of the RGS, for example, and those he prepared for the parliamentary papers, or the ones he prepared to accompany the published travel accounts of explorers. The present research has examined some aspects regarding the circuits of cartographic material from the field to the public sphere in Britain and back to the Australian colonies. In so doing, it has documented the multifaceted and routine character of these processes.

Historians of print culture have recently argued for the need to take the practices of printing seriously when examining how travel and exploration altered European views of the world from the late eighteenth century to the mid-nineteenth century. Similarly, historians of cartography have argued for the need to examine the map production process in order to determine what purpose maps were designed to serve. Knowledge about the production process is vital in order to be able to determine the meaning of maps. I agree with these views. However, I would further stress that in addition to the availability of different types of material synthesis, repetition and the publication of different types of materials – maps and texts next to each other - also have to be taken into account more precisely when considering the ways in which the variety of material shaped individuals' perceptions of the world. I make this point especially in reference to the need to be sensitive to the co-constitutive relationship between maps and texts in the process of making knowledge.

4: Cartographer John Arrowsmith was a key individual in the process of mapping and forging geographical knowledge of Australia

The findings of this study regarding Arrowsmith's work demonstrate how the mapping of Australia in mid-nineteenth-century Britain was heavily indebted to his work. Arrowsmith operated in London but had a transoceanic impact on the way the Australian continent and its colonies were constructed cartographically. He achieved this by preparing a multitude of different types of maps that were consumed in the hands of multiple actors.

The criticism faced by Arrowsmith's work, as the semi-official cartographer of the colonies, as the colonies gained self-government testifies to an emerging shift in the position of his maps as mediators of generalized spatial knowledge. Furthermore, the debates regarding the methodological choices he made in compiling the data demonstrate that Arrowsmith's mappings provoked discussion in a similar manner as occurred in other geographical contexts. In other words, debates often occurred between the people conducting the work in the field and those forming generalizations based on the different sources at their disposal. The character of these discussions, however, points to the interconnected character of the colonies and the metropolis, and therefore of the processes of knowledge making.

The important position of Arrowsmith's maps in the process of forging generalizations about the continent emerges when they are considered as knowledge brokers. As multimodal material, which combined pieces of text and graphics, Arrowsmith's maps emerge as in-between objects; as material that is perhaps most visibly "cooked" information into knowledge. Consequently, their knowledge statements about the world are similar to the ones made in the printed texts: they often stand as evidence of individual observations. Moreover, on the small-scale maps they were put side-by-side with observations that derived from other explorations and surveys. Simultaneously, the textual information in Arrowsmith's maps demonstrates how the cartographer filtered generalizations or representative descriptions of the environment when completing his maps of the continent.

In spite of gaining an authoritative position, Arrowsmith's maps were only one part of a larger and rapidly expanding pool of different types of cartographic material, which depicted Australia in circulation at the time. Empirical findings point to strong interconnections between mid-century cartographies of the continent, especially in Britain, but also those produced in Europe and North America. This study has pointed towards interesting findings regarding commercial map production that occurred in the colonies, when viewed in comparison to those produced overseas. In sum, they draw attention to the contingent nature of nineteenth-century cartographies. Consequently, they point to further circulations of geographical knowledge and of the maps that were prepared and printed.

Comparisons between the maps produced by Arrowsmith and other map-makers demonstrate important interconnections in the character of the knowledge that was depicted. A case in point is the circulation of boundary lines and the name of the short-lived colony of North Australia on many of the maps of the time. However, an examination of the connections that enforced the prevalence of these shared traits has been beyond the scope of this research. This research points to the fruitfulness and possibilities of conducting such research in a networked and processual framework. Examining these processes would require obtaining more details about how these cartographies reflected and participated in the process of forming knowledge about the world by engaging with their production, movements and use. Focusing on these processes could, for example, help to inform us about the interconnected nature of the production of cartographic knowledge in Britain but also about the practices that constituted the movements of locally-produced knowledge beyond Britain to different parts of the globe.

5: The processual approach is required for the history of knowledge

The three chapters of this study demonstrate that using a processual approach has many benefits for researching knowledge-making, as it is very informative vis-à-vis the practices of knowledge-work and mediation. It draws attention to *circulation* as a useful analytical tool to examine the transformations that occurred when material moved and was consumed in different locations. My empirical findings point to the usefulness of understanding networks of knowledge as sites of constant circulation. Consequently, circulation, when understood as transformative mobility of knowledge offers a tool to uncover how knowledge is established as a result of the knowledge-work of various individuals in various locations.

The method of tracing marginalia reveals the different ways in which material relating to geographical discovery and explorations was consumed. It also discloses the factors that influenced the conclusions that were made and how the material was put into motion, either by communicating it to other parties or by publicizing endeavors. Similarly, this study demonstrates that it is crucial to examine material related to the production process of different types of printed text and maps, when aiming to understand why particular parliamentary papers or an article in the publications of the RGS emerged as it did. This study has proven that the original correspondence between the Colonial Office and the Australian colonies is rich in annotations and minutes, which inform us how many of the maps and texts were discussed and what was done with the different pieces of information that arrived in London.

Analyzing the process of the use of the different material that arrived from the Australian colonies brings to the fore some of the practices that constituted the formation of British conceptualizations of the Australian continent as a geographical whole and a target for colonization. The practices of circulation testify how the understandings of the continent as a landmass with the hypothetical inland sea shifted towards an understanding of the interior as an arid desert and finally to a more multifaceted comprehension of the environmental characteristics. The knowledge-work undertaken in different locations by various actors demonstrates how Australia as a space for the British came to exist. Consequently, my empirical findings and my method has implications for future research in terms of aiming to understand, for example, to what extent and with what kind of variations the British conceptualizations became shared in different parts of the globe. Furthermore, applying the processual approach to different geographical and temporal contexts would be informative vis-à-vis the question of how particular pieces of information do or do not become shared and acknowledged on different geographical scales or between, for example different social, political or ethnic groups.

The empirical findings of this research also have important implications in relation to understanding archives as a result of circulatory practices. The pieces of information that are often bypassed by researchers, including annotations and minutes, have proven their value when seeking to understand the historical processes that produced the different material held by the archives today. The links between the different institutions and actors, in this case the colonies, the Colonial Office, the RGS and Arrowsmith, in particular, constituted the heavy intertextuality of the different forms of knowledge in different locations. They also accounted for the relocation and disappearance of some material, especially some map tracings, reports and manuscripts. My research has therefore given us new information about how the interconnected routines of these different actors and the archives that accumulated constituted the fluid process of producing geographies. Thus, it has informed us about practices that constituted the colonial enterprise and which cannot be grasped from the explorers' texts or the maps themselves.

This study demonstrates that studying annotations and minutes often comes with numerous challenges for researchers. It also highlights how these challenges may be overcome. The feasibility of studies on the historical process of knowledge formation is largely constituted by the very practical matter of being able to locate the right kind of material. Evidence is scattered in numerous and sometimes unexpected places. Annotations and minutes tend to be fragmentary by nature and therefore many things are often left unrecorded. Often only a portion of the relevant material exists. For example, in this study the major limitation relates to the nonexistence of material related to the Arrowsmith map firm. Nevertheless, my research demonstrates that systematic research of an abundance of material, combined with critical examination of material held by the different archives, helps to determine the typical practices that are informative when examining the likely reasons why a particular piece of information, for example, exists on a map or in a text.

To conclude, the empirical observations that this study presents are informative in answering the challenging question of how the British geographies of Australia were made in the mid-nineteenth century. In doing so, they also produce an understanding of the social processes and everyday routines that underpin transforming the "unknown" into something "known" and highlights the historically contingent nature of these processes. My study demonstrates the power of the everyday routine practices in establishing knowledge about the world that have had consequences for the spatial structures that exist today.

This research demonstrates what is gained by plunging into the fragmentary data documenting different steps of the processes of knowledge formation. It demonstrates the processual and 'unfixed' nature of mapping and knowing the world but also inform us of the practices that—due to the inequal power relations—led to the naturalization of British spatial structures that overwrote indigenous spatializations as the primary ways of relating to the land. Consequently, my research documents the social processes that constituted the production of geographical knowledge. Therefore, my observations provide future scholars with data that can be applied when using the processual approach, vis-à-vis studies that focus on (geographical) knowledge as a historical phenomenon. In sum, my observations point to the fruitfulness in diving into archives in order to understand how geographies and knowledge of the world were made.

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MPG Maps and plans extracted to flat storage from records of the Colonial Office

MR Maps and plans extracted to rolled storage from records of various departments

The Royal Geographical Society (London, United Kingdom)

CB 2-4 Correspondence Blocks

JMS/13 Journal Manuscript Archives

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