

Sovereignty through cartography

The impact of maps on Norwegian national identity in the eighteenth and nineteenth centuries

Anne Christine Lien

Thesis for the degree of Doctor Philosophiae (dr. philos.)
University of Bergen, Norway
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Abstract in English

Cartography has for centuries been used as a political instrument to support national pride, impact, and influence, whether through the use of a national prime meridian or local toponyms, by emphasising a country's extent through colour, or by underlining and even distorting its position and size through projection. Maps are thus one of the driving factors behind the emergence of modern territorial sovereignty.

In Scandinavia, the seventeenth to nineteenth centuries were times of upheaval. Affiliations shifted back and forth in large parts of central Scandinavia, there was a vast region of common use at the Arctic frontier, the border between Sweden and Norway was not settled until 1751, and political turmoil arose when Norway was ceded as war booty from Denmark to Sweden in 1814. Against this backdrop, I have delved into the theory of cartographic elements and their potential influence, as well as conducting an empirical analysis of maps produced by different cartographers, mainly Scandinavian. The purpose has been to investigate the role of cartography in Norway's struggle for national identity within the framework of two political unions, first with Denmark, then with Sweden, before finally achieving political independence in 1905. Through four peer-reviewed articles, I have explored different cartographic elements, namely prime meridians; national boundaries; map colouring; and map titles, dedications, and toponyms.

The empirical results indicate that various cartographic depictions of Scandinavia from the eighteenth to the nineteenth century reflect divergent perspectives on sovereignty. The findings seem to demonstrate that both Norway and Sweden used maps as instruments of political influence. Cartographic elements used on the maps analysed for this study are considered to support territorial claims not only in the Arctic region and central Scandinavia but also on Norway itself during the union period.

The topic has gained new relevance today when we see political use of cartographic elements in an ongoing territorial conflict in Europe. This thesis contributes to knowledge on the influence of maps, and on how sovereignty can be claimed through cartography.

Sammendrag på norsk

Kartografi har i mange hundre år blitt brukt som et politisk instrument for å støtte nasjonal stolthet og innflytelse. Det kan skje gjennom bruk av en nasjonal nullmeridian eller lokale stedsnavn, fremheving av landets areal ved hjelp av fargelegging av kart, eller understreking av landets posisjon og størrelse ved bruk av en velvalgt kartprojeksjon. Kart har dermed vært en av drivkreftene bak moderne territoriell suverenitet. I Skandinavia var 1600- til 1800-tallet en tid med store omveltninger, der flere regioner skiftet politisk tilhørighet frem og tilbake mellom nabolandene. Store arealer nord for polarsirkelen ble brukt som fellesområder av flere nasjoner, og grensen mellom Sverige og Norge ble først fastsatt i 1751. Det ble også langvarig politisk uro da Norge ble gitt som krigsbytte fra Danmark til Sverige i 1814.

Med dette som bakgrunn har jeg sett på hvordan kartografiske elementer kan ha innflytelse, samtidig som jeg har gjennomført en analyse av kart produsert av ulike kartografer, hovedsakelig skandinaviske. Hensikten har vært å undersøke hvilken rolle kartografi har spilt i Norges kamp for en nasjonal identitet innenfor rammen av to politiske unioner, først med Danmark, deretter med Sverige, og mot uavhengighet i 1905. Gjennom fire fagfellevurderte artikler har jeg utforsket ulike kartografiske elementer, blant annet nullmeridianer; nasjonale grenser; fargelegging av kart; og karttitler, dedikasjoner og stedsnavn.

Resultatene viser at ulike kartografiske fremstillinger av Skandinavia på 1700- til 1800-tallet reflekterte forskjellige syn på herredømme i regionen. Funnene viser at både Norge og Sverige brukte kart som verktøy for politisk påvirkning. Bruken av kartografiske elementer på de analyserte kartene antas å ha støttet territoriale krav, både på Nordkalotten, sentralt i Skandinavia, og krav på Norge som helhet i unionstiden. Temaet har fått ny aktualitet i dag når vi ser politisk bruk av kartografiske elementer i en pågående territoriell konflikt i Europa. Denne avhandlingen bidrar til kunnskap om kartenes påvirkningskraft, og om hvordan suverenitet kan hevdes ved hjelp av kartografi.

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In 2017, I finished a master's degree in geography at the University of Bergen (UiB), Norway. I studied part-time alongside my daily work at the Norwegian Mapping Authority, and the combination worked out well. I wanted to explore some of the topics from my master's thesis more thoroughly and was encouraged to start a doctoral education. However, admittance to the PhD programme required taking leave from the Mapping Authority, which I did not wish to do. After quite a demanding process, I was finally admitted outside the regular PhD programme, as an independent and self-financed DPhil-candidate (*Dr.Philos* in Norway).

During these six years of half-time doctoral studies alongside a full-time work position, many people have contributed to the research process, for which I am most grateful. First and foremost, a warm thanks to Professor Emeritus Anders Lundberg at the University of Bergen, Norway. Without his enthusiasm and interest in the subject during my thesis, I would not have considered pursuing my research interest further in form of a doctoral degree. His support was vital to the implementation of the project, and I particularly appreciated his contribution as co-author of the paper on boundaries.

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List of Publications

- 1) Lien, A.C. (2019): From Fortress Flagpole to the Greenwich Line: The Establishment of a Common Prime meridian in Norway in the Period 1770-1970. *Norsk Geografisk Tidsskrift – Norwegian Journal of Geography*, 74(4): 262-279. DOI: 10.1080/00291951.2019.1682035
- 2) Lien, A.C. and Lundberg, A. (2022): Lines of Power: The Eighteenth-Century Struggle over the Norwegian-Swedish Border in Central Scandinavia. *The Cartographic Journal*, 59(2): 102-119. DOI: 10.1080/00087041.2021.1995124
- 3) Lien, A.C. (2023a): Colouring sovereignty: How Colour helped depict Territorial Claims to the Arctic in Northern Europe on Sixteenth to Nineteenth Century Maps. In: Lange, D., van der Linde, B. (eds.) (in press). *Maps and Colours. A Complex Relationship*, 78-97. In the series Mapping the Past, Volume 3. Leiden: Brill.
- 4) Lien, A.C. (2023b): Waving the map for national identity: How cartography in Norway and Sweden was used as a nation-building tool in the eighteenth and nineteenth centuries. *Erdkunde*, 77(1): 13-34. DOI: 10.3113/erdkunde.2023.01.02

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- Lien 2023a: **Brill**, by Alessandra Giliberto, Acquisitions Editor, *History of Cartography*. Condition: Not use the publisher's layout.
- Lien 2023b: **Erdkunde**, by Dr. Dirk Wundram, *Erdkunde Editorial Management*, University of Bonn, Germany.

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Introduction

The current global situation is characterised by a large number of conflicts around the world. To mention a few, there is an ongoing war over territories in Ukraine, a critical development in the Israeli-Palestinian conflict, a potentially dangerous situation between China and Taiwan, and Russia is displaying its military power in the High North in an attempt to gain strategical control over important sea routes. A striking example of the constant appetite of sovereign nations for more territory is the previous U.S. president's stated ambition to buy Greenland, due to the island's important geographical location at the entrance to the Arctic (Hjorth 2019).

Against this geopolitical backdrop, cartographic knowledge is vital. This is underlined in remarks by the CEO of the Norwegian Mapping Authority, Johnny Welle, who in his introduction to the organisation's 2022 annual report emphasises the importance of a profound competence in cartography. He argues that this knowledge is crucial for meeting global challenges in areas such as energy and climate change, particularly given the current dramatic security policy landscape (Kartverket 2023a, 3).

A few years ago, the Norwegian government issued a report on digital everyday life. The overarching concept of the national geospatial strategy is that 'everything happens somewhere' (Norwegian Ministry of Local Government and Modernisation 2018). This spatial dimension affects all aspects of society and a socio-geographical approach to other disciplines is thus vital (Larsen 2023). As part of this broader picture, the mapping of spatial relations is essential to strengthen the foundation upon which society is built.

I have always had a great interest in this spatial dimension, in *where* things are or happen, and in the connections between places. My favourite schoolbook as a child was the Atlas of the World, and I remember learning all the countries in Africa by heart. In the 1990s, I studied one year of geography at the University of Bergen after completing a four-years' degree in languages. In the same period, I worked as a bus tour guide throughout Europe and used paper maps intensively. Coming back to the University in 2013 to extend my twenty-year old geography course to a part-time BA

in geography and a following MA, the huge school wall maps in the auditorium told me I was in the right place.



Figure 2: School wall maps in the main auditorium, Social Science Building, University of Bergen, Norway. Due to the substantial number of students using this auditorium, these maps' world view has a potentially significant impact (Photo: Anne Christine Lien)

Parallel my geography master studies, I obtained a position in the Norwegian Mapping Authority. Modern digital cartography appears very different from traditional maps. Yet the challenges are often the same, and the history of cartography can therefore contribute to our understanding of modern maps and digital geodata. However, the main benefit of my position has been the network of colleagues sharing my passion for historical maps and what cartography can tell us about society in the past. A decisive episode was an interview during the master process with Bjørn Geirr Harsson, one of the two authors of the history of the Norwegian Mapping Authority, 'Building the country with maps: Surveying and mapping of Norway 1773-2016' (Harsson & Aanrud 2016). Together with support and advice from my MA supervisor, Professor Anders Lundberg (now emeritus), this led to the perspectives and research questions in both my MA dissertation and my DPhil thesis.

The purpose of this thesis is to provide further insight into the use of cartography as a political instrument and the possible motives behind map-making. In this context, history is a source for improving our understanding of the world (Awati 2022). During my MA in geography, I therefore also took a few university courses in history, to better understand the historical context of maps. The basis for my research is historical maps, with a focus on selected cartographic elements that can be used to project sovereignty. Maps represent knowledge of territories and resources, and the selection and

distribution of geographical knowledge turns cartography into a powerful tool of power. As maps are often perceived as an objective record of the world, they can be highly influential. However, their depiction is a selective view of reality, reflecting the interests of the creator (Schüler 2011). Cartographic elements such as boundaries, prime meridians, projections, or colouring can reinforce or conceal discourses (Monmonier 1996, 2; Black 1997, 17). Hence, sovereigns may construct a world view that serves their strategies through the use of cartography. Maps are ‘not only representing a geographical reality, but they are serving to shape this very reality’ (Strandsbjerg 2010, 70). This is particularly evident in wartime when propaganda maps depict conquests not yet achieved. The function of maps as territorial documentation has throughout history been part of the basis for political decisions and formed a tool for constructing and supporting national pride.

There is much information in the existing literature on the relationship between cartography and national identity. An interesting example from Scandinavia is a study on how Danish cartography supported national identity in the border areas with Germany in the nineteenth century (Svenningsen & Dahl 2016). However, research on these themes in Norway is limited and the topic deserves closer attention. My ambition is to contribute to knowledge of the role of cartography in determining Norway’s identity as a nation in relation to its neighbours during a turbulent period from the eighteenth to the nineteenth centuries. In 1814, Norway’s more than 400-year-long political union with Denmark ended with the surrender of Norway to Sweden (Berg 2014). The transition from one political union to another coincided with the emergence of a Norwegian national identity, in parallel with an increasing focus on the concept of ‘nationhood’ throughout Europe during the period of Romantic nationalism. Through a systematic examination of a large number of historical maps, I aim to document whether and how Norwegians used such maps as a political instrument in their struggle for sovereignty. Although Norway did not become an independent country until 1905, there were various groups of influential people, many of them military officers, including land surveyors, who were active in social life and who emphasised the desired independence of Norway.

My focus is on determining affiliation in the Arctic parts of Scandinavia from the eighteenth century onwards, on how the Norwegian–Swedish boundary was established in 1751, and on independence efforts during the political union with Sweden in the nineteenth century. This is expressed in the following research question for the thesis as a whole:

How did cartography influence the development of Norwegian sovereignty in the eighteenth and nineteenth centuries?

The main focus of this thesis is analysis of empirical evidence as it is represented in the maps. However, it also aims to shed light on the process that lies behind what is mapped and to view cartography in a historical and political context. It is relevant to consider for the period under study the complex interdependence between cartography and territory (Nordman 2020, 164). Previous studies such as Ehrensward (2006), Berg (2009), and Hemstad (2018a) have referred to the political role of maps in a Scandinavian context, but most do not go into detail on how cartographic elements were used to promote political ambitions. It was therefore a need for developing theoretical approaches that could cover this aspect of Scandinavian political cartography.

In order to answer this research question, I critically reflect on the theoretical foundation of cartography as a science. I have considered the historical context of the maps as well as the ethical dimension of cartography. The research design involves a thorough qualitative examination of cartographic elements and a systematic compilation and evaluation of the available sources. The analysis indicates that the use of a variety of cartographic elements on Norwegian and Swedish maps during the period under study seems, to a certain degree, to have strengthened Swedish hegemony on one side and Norwegian national self-esteem on the other. The study therefore contributes to a better understanding of the importance of maps as a political tool in the struggle for sovereignty, and of the power of cartography in supporting territorial claims.

1. Background

In this part of the thesis, I supplement the articles by a definition of key terms and an explanation of the period under study (Vaglum 2010, 1633).

1.1 Key terms

Historical maps: ‘Historical maps’ can, in a specific context, refer to maps that depict an area at a given point in time, long before the map’s construction. One example is Gerhard Schöning’s map of southern Norway, produced in 1779 but depicting Norway in the Saga period around the thirteenth century. However, more often, the term ‘historical maps’ is used in the more general sense of ‘old maps’, that is maps constructed in the past and depicting the given area in its contemporary state. The latter meaning is applied in this thesis.

Nation: Anderson (2016, 6-7) [1983] defines the concept of ‘nation’ as an ‘imagined political community’ in which the inhabitants are tied together even if they do not have face-to-face contact. He also connects territoriality to the concept, implying that a nation is limited by borders. This is in contrast to Smith (1993), who claims that a nation may refer to a group sharing ethnic origins, history, culture, and/or religion, even without a delimited territory, such as the Kurds. Another example which is highly relevant for this thesis is the Sámi people, spread over the northern parts of the Nordic countries and north-western Russia. The Sámi conference of 1992, which also established 6 February as the Sámi National Day, concluded that ‘the Sámi are one ... nation [and] the use of the term nation does not presuppose a separate state’ (Sametinget 2023).

National identity: Closely connected to the concept of ‘nation’ is that of ‘national identity’, which is explained by Smith (1993) as loyalty to a nation, and a sense of affinity. He further argues that this relationship between an individual and their homeland can take a destructive form of nationalism. However, even if ‘nationalism’ has a negative connotation today, Anderson (2016, 8) states that it is also a positive term expressing profound love for one’s country and values that are cherished. Paasi

(2003, 477) adds that identity is formed through social processes related to elements such as nature, culture and language. He emphasises the difference between top-down and bottom-up contexts in the identity process, where the first relates to identity narratives imposed by the authorities, while the latter can rise from local initiatives or even resistance movements. In these processes, the mapping of places has a significance as a basis of identity formation (Paasi 2003, 478).

Nordkalotten/The Scandinavian Northlands: This is a central term in the third paper, on the use of colour to depict territorial claims. The Scandinavian Northlands include the areas north of the Arctic Circle in Norway, Sweden, Finland and Russia. Since the Nordic Council was set up in 1952, these Arctic areas have been referred to by the term ‘Nordkalotten’ (Mead 1974, 7; Ehrensverd 1984, 4). For many centuries, this was an area for shared use and interaction, and even today the different nations of Nordkalotten have common issues to be solved in cooperation.

Power: In geography, power is frequently connected to a political approach, in the form of control or authority over a territory (Coleman & Agnew 2018, 7). However, Foucault (2001) underlines the multiplicity of power, as it may take a variety of forms without being limited to one consistent term. Giddens (1979) suggests that power is the ability to mobilise resources and use them to secure a particular outcome. In the context of this thesis, these resources may be cartographic elements or the maps themselves.

Sovereignty: The notion of sovereignty has varied throughout history, but a general definition is ‘supreme authority within a territory’ (Philpott 2020, 1). Authority is the dominant power to order and be obeyed, and it is legitimated in the sense that the authority is commonly accepted. Supremacy implies that the sovereign’s authority is superior to that of others within the domain (Philpott 2020). Finally, sovereignty is defined by territoriality, as the sovereign state is located within boundaries. The supreme authority is only valid within this geographical territory. According to Taylor (1994b), territory can be regarded as a spatial ‘container’, loaded with the social relations and state functions that the modern nation-state is composed of.

1.2 Historical backdrop

Understanding the historical context for this study is vital for interpreting the empirical material. The important point is that even if the Scandinavia of today is a peaceful corner of the world, its history has at times been turbulent (Briså 2014). At the end of the ninth century, Norway was unified as one kingdom, and the country experienced a long period of independence throughout the Viking Age and to the last decades of the fourteenth century. Trade with Europe expanded during the Viking period, and the international connections were continued through trade with the German merchant organisation, the Hanseatic League, which had one of their foreign offices based in Bergen in western Norway (Gustafsson 2017). By the thirteenth century, the Norwegian kings had expanded their realm to include Iceland, the Faroe Islands, Greenland, and islands north and west of Scotland (Orning 2023).

The 1349-50 pandemic Black Death had major consequences for Norway, as approximately sixty percent of the population died (Aastorp 2004; Gustafsson 2017, 66). In 1380, Norway was incorporated into a political union with Denmark which lasted more than four centuries, until 1814. During this period there were numerous territorial disputes between the Danish–Norwegian union and a third Scandinavian country, Sweden. At the turn of the nineteenth century, the situation was particularly turbulent, and the mapping of the border areas with Sweden was of utmost importance (Harsson & Aanrud 2016, 16-17). As a consequence, the Borders Survey of Norway (*Norges Grændsers Opmaaling*) was established in 1773. This was the predecessor of the Geographical Survey of Norway (*Norges Geografiske Oppmåling*), today known as the Norwegian Mapping Authority (*Kartverket*).

In parallel with this increased focus on mapping Norway, there was a growing demand for a Norwegian university and other national institutions (Stagg 1956, 154-155). The organisation The Norwegian Society (*Norske Selskab*) was established in 1771, and the University of Oslo in 1811 (Collett 2009). Another important event was the establishment in 1809 of the Royal Norwegian Society for Development (*Det Kongelige Selskap for Norges Vel*), underlining ‘an ideological movement that pointed

to a strong Norwegian identity and Norwegian independence' (Dørum 2015, 40). Stories about Norway's proud history and geography were used to rebuild and strengthen a Norwegian identity, and maps became important tools in this process (Barton 2003, 8; Glenthøj 2009; Enebakk 2012).

This development paralleled similar processes in many European countries. The concept of nationality became more than just a question of who ruled an area, as people felt attached to their territory through national folklore and art (Murphy 1996, 97). Citizenship was thus linked not only to location but also to a shared culture, and national romanticism had a major influence on the construction of national identities (Taylor 1994b). Landscape and folk tunes inspired Norwegian national romantic painters such as Adolph Tideman and Hans Gude as well as composers such as Ole Bull and Edvard Grieg. Several of them, such as the painter J.C. Dahl, had perspectives and intentions beyond creating pictures, and some of them published their ideas in texts. The author and natural scientist Peter Christen Asbjørnsen (1812-1885) and the poet and bishop Jørgen Moe (1813-1882) collected fairy tales that were seen as a Norwegian cultural treasure, and thus supported the Norwegian national consciousness (Falnes 1933, 199, 214, 221).

Although there was no Norwegian state actor before 1814 and Norway was in personal union with Sweden until 1905, there were nevertheless strong forces that were part of the process of forming a separate Norwegian identity. Even Norwegian geologists contributed to an ideological framework, in which they reflected on how Norway had been formed physically. In relation to this, Rune Slagstad (2018, 15) claims that 'the search for the nation's interior was ... a scientifically motivated interest which eventually, via the painters (and poets), also became a patriotic, identity-forming interest'. Artists took to hiking in Norway's mountains and gave them romantic, nationalist names, such as Jotunheimen and Trollheimen (*Home of the Giants* and *Home of the Trolls*) (Enebakk 2012, 136). The new names were recorded on widely distributed maps, supporting a surge in national pride. Several leading Norwegians, among them the cartographer and historian Peter Andreas Munch (1810-1863) and the poet Ivar Aasen (1813-1896), aimed to construct a distinctive Norwegian language

based on dialects and old Norse words. Their achievements are still present in today's Norway, which has two official languages: a Danish-influenced language (book tongue, *bokmål*) and a constructed language based on Norse heritage (New Norwegian, *nynorsk*) (Venås 2015).

Within cartography, national romanticism was also expressed through elaborate cartouches (cartographic decorations). An excellent example of this is the Danish cartographer Christian Jochum Pontoppidan's (1739–1807) map of southern Norway from 1785. Its cartouche depicts typical Norwegian activities such as fishing, hunting, and logging, watercourses with several mills, small cabins and houses, and not least an overwhelming nature with high mountains and waterfalls. Central in the cartouche is a tall monument with a victory wreath and the Norwegian coat of arms. This relates to a strong sense of Norwegian identity. As this map was regarded as highly accurate, it was used as the official map of Norway for half a century and therefore had considerable influence (Ginsberg 2009, 126; Enebakk 2012, 132-133)



Figure 3: National romantic cartouche in the 1785 map of southern Norway by C.J. Pontoppidan (Norwegian Mapping Authority/Kartverket)

Napoleon's conquest of large parts of Europe in the late eighteenth century, and his final defeat, brought considerable changes to the map of Europe (Bregnsbo 2009). Denmark was on the losing side in the war and had to cede Norway to Sweden in 1814 (Steen 1951, 285). This did not occur peacefully, as Norway saw an opportunity for independence. During a hectic period in the spring of 1814, Norway managed to establish its own constitution, signed on 17 May, which is still celebrated as the National Day. However, after a short war with Sweden, Norway was forced to accept the new union, even if the struggle for independence continued within it.

The Swedish intention was to integrate the two nations under Swedish sovereignty (Berg 2009, 93). According to Hemstad (2018a, 58), this was part of Swedish Crown Prince Carl Johan's geopolitical plan and fulfilled what had been Sweden's foreign policy goal since the end of the eighteenth century: the conquest of Norway (Bregnsbo 2009, 34). Sverre Steen (1898-1983) was one of the most significant Norwegian historians in the twentieth century, and in his 1951 book on the decisive 1814 union process he wrote, just 'a glance at the map was sufficient for Carl Johan to document that the two countries [Sweden and Norway] by nature were destined to form one unit' (Steen 1951, 13). However, the emerging national institutions, including the Norwegian Constitution of 1814, proved resistant to the new union (Stagg 1956, 185). The Norwegian 'political container' was gradually filled with institutions representative of national culture and identity, including cartography (Berg 2017, 196-197; Hemstad 2018a, 58). This incremental process led to Norway's full independence in 1905.

This politically turbulent age coincided with rapid technological developments, not least within surveying and cartography (Edney 1994, 105-107). At the same time, there was a transition from confidential, military mapping to public surveys and publicly available map series. This adds to the uniqueness of the study period.

2. Theoretical approach

This chapter presents the theoretical basis for my research. According to Cresswell (2013, 6), theory can be considered a lens through which the perceived world is interpreted. In the following sections, I consider the current state of international research. This includes an elaboration of relevant theory and research literature beyond the presentations in the articles, along with an identification of gaps or ambiguities that my project may fill or resolve.

In this theoretical chapter, I will first examine the embedded power of maps, and how cartographic knowledge may be a persuasive tool. Next, I review literature on political geography, including investigation of expansionism and how maps can be used as political instruments. Furthermore, I explore the link between cartography, sovereignty, and national identity, before going deeper into the influential use of selected cartographic elements.

2.1 Powerful cartography

Perkins (2012, 351) states that ‘the ability to construct and read maps is one of the most important means of human communication, as old as the invention of language and as significant as the discovery of mathematics’. Consequently, the role of maps goes far beyond their main function as a storage tool for spatial information. The multiple purposes of cartography range from navigation or military planning to documentation of property, construction, and simple wayfinding or even decoration (Edney 1994, 107). This great variety of uses means that maps can influence many aspects of society, both deliberately and unconsciously (Ehrensverd 2006). For example, cartographic illustrations may lend authority to military and political leaders, as maps are often seen to be documents that can be trusted. The very nature of maps is to most people connected with accuracy, reliability and impartiality (Edney 1996, 186). Boria (2016, 97) mentions the frequent misconception of maps as ‘a neutral technical instrument’, and maps are widely considered to be an objective depiction of the world. Hence, they can be quite persuasive. The British geographer, cartographer and map historian John

Brian Harley (1932-1991) claims that cartographic knowledge is ‘a way to present one’s own values hidden under a veil of scientific neutrality’ (Harley 2001a, 54) [1988].

Even if the aim is to be objective, the geographic data presented may be old, distorted, inaccurate, or misinterpreted by the cartographer, contributing to the map communicating the original information in an imprecise way (Kraak & Ormeling 2010). In addition, the cartographer’s values will, to a certain degree, inevitably be reflected in the map. Harris (1991) argues that even at the moment it was conceived, the map already represents a subjective perception of the world. However, maps are often the product of more than one person’s work, and cartographic production may include different roles such as geodesists, field surveyors, and map constructors (Edney 1994, 107). Hence a map rather provides an intersubjective understanding of the world. There is often a strong patron behind the mapping process, and the cartographers themselves may be a medium to communicate the principal’s strategies (Edney 1994, 107). From the fifteenth century on, for example, many European rulers used cartographic representation to document control over their territory, and the ‘royal’ cartographer’s interpretations of their guidelines and of the world would be indicated in the map (Katajala 2011, 73). Their evaluation of the available data and subsequent selection are conducted with the purpose of the map in mind (Harris 1991). The resulting chart is thus a value-laden image (Harley 2001a, 53) [1988]. The cartographer’s deliberate or unconscious choices regarding what to include and what to omit have a strong impact on the resulting map, as does the necessary generalisation of the data during the construction process, when a boundless three-dimensional world is fitted into a delimited, two-dimensional map.

Consequently, a map can serve as an instrument of power, with the different cartographic elements used to influence the impression given by the map (Black 1997, Schüller 2011). Power is closely connected to knowledge, and maps are tools for accumulating knowledge (Edney 1994, 105). Crucial information acquired through maps may be related to strategic and economic benefits, and hence cartography also has an ethical dimension (Schneider 2007). Access to maps, or the ability to survey the

land and construct maps, has often been restricted to the upper classes, reinforcing divisions in society (Black 1997). Wealthy households often displayed precious maps and globes prominently as a demonstration of their knowledge and power (Cresswell 2013, 30).

During the eighteenth and nineteenth centuries, military mapping increased, and the authorities gained access to important geographical information (Edney 1994, 108). Military surveyors and cartographers could rise in the ranks via their cartographic achievements, and many of them became civil servants and part of the social elite with political impact. Throughout the nineteenth century, military cartography was professionalised (Berg 2001, 87). Society was changing rapidly, partly due to the incipient industrial revolution, and the military maps eventually became general national maps, combining the requirements of the military and civil society (Widmalm 1990, 267-268).

In Scandinavia, military officers were important for the physical nation-building, through construction of infrastructure such as railways and roads (Berg 2001, 91). Their way of spatial thinking was also valuable in the production of maps (Svenningsen 2015, 34). Important military cartographers included the Norwegians Carl Bonaparte Roosen (1800-1880), Andreas Vibe (1801-1860) and Nils Christian Irgens (1811-1878), and the Swedes Otto Julius Hagelstam (1785-1870) and Carl Gustaf Forsell (1783-1848). The two latter took part in the mapping of the new union partner Norway after it was transferred from Denmark in 1814. Both Norway and Sweden focused their defense and consequently their mapping projects traditionally on their border regions, but from the 1820s, the strategy was changed to a defence based on central fortresses, and cartographic activity covering larger parts of the territory (Widmalm 1990, 303-304). The two countries were consolidated through maps, and military cartographers supported the national identity via communication development and knowledge dissemination through the school system (Widmalm 1990, 311). Several of the military cartographers were also painters, and many of them travelled around and reproduced the typical national impression of the country (Berg 2001, 92).

Knowledge about the world is a tool to control it, and the expression of knowledge through maps can reflect the worldview rulers wish to promote (Cresswell 2013, 42). An example of this is maps used to suppress ethnic groups. In the Scandinavian context, maps of the Arctic parts of the region were used to suppress the Sámi people and their land use rights. The common ‘ownership’ that the indigenous people of Nordkalotten traditionally had of the area was neglected by the national authorities who mapped the region based on their own interests. This included drawing borders and changing names on the maps, censoring the Sámi culture, and promoting the worldview of those in power (Harsson & Aanrud 2016, 542).

As Harley (2001a, 75) [1988] claims, ‘to own the map was to own the land’. As part of decolonization, both political and cultural, indigenous groups in different countries have consequently produced cartographic representations of their regions from their own perspective. In this way, they have reconquered their territories cartographically. Bjørn Sletto (2009, 253) calls this ‘counter-mapping’, in contrast to the authorities’ ‘hegemonic mapping’. In this way, maps can be seen as a discursive tool, shaping the representation of reality. Scientific knowledge of the world should not be considered undisputable facts, but rather a process, in which cartography had a powerful role. This approach was developed among others by the French philosopher Bruno Latour (1947-2022). Through his Actor/Network Theory (ANT), Latour claims that the agency of humans in the production of the world is matched and enabled by the agency of the non-human world, and he argues that our world views are to a great deal produced by social forces and exist in networks of connections (Latour 2005). Hence a map can never be an objective representation of a static, unquestionable world, but is representing the world through a social process, as described by the British map historian and geographer Matthew H. Edney (1962-). He suggests a critical perspective to map history via a processual approach, which would encompass the circulation – both geographical and social – and consumption of maps (Edney 2014, 94). He also mentions how maps can be a non-human ‘actor’ in Latour’s actor-network theory, with its relation to its users (Edney 2014, 97). Furthermore, the processual approach focuses on social dimensions and cultural contexts through exploration of maps in different societies and identification of their interconnections (Edney 2014, 98).

Changes in history can be traced through maps, as cartography is embedded in the cultural values of contemporary society (Perkins 2012, 353). Maps therefore need to be interpreted with their historical context in mind. However, this can be a challenge because different users may read the same map in conflicting ways. One reason for this is that the visual image of the map is associated with different ideas for each user, and their cultural and social background will influence how they decode its significance (Bartram 2012). Nonetheless, the power of cartography is not restricted to its availability in a certain context, or what is presented in the maps. What is omitted can be just as important, where the cartographers or their patrons consciously or unconsciously exclude information from the map. Black (1997, 19) calls this the ‘silences’ in maps, where cartography ignore for instance places important to indigenous people or religious sites. Another example is atlases intended for children, which often provide an idyllic worldview where representation of cities and industries are omitted in favor of illustrations of exciting animals, influencing the children’s world view (Schneider 2007, 55). Cartographic information may also be censored, and deliberately misleading maps have historically been used as a ‘fundamental tactical weapon’ (Monmonier 1996, 113).

Technological advances during the past 50 years have revealed most cartographic secrets, even in nations with a tradition of censoring their information. However, even today, the majority of mapping projects are controlled by the state (Edney 1994, 112). Even in Scandinavia, where the authorities promote openness, some cartographic information is still regarded as sensitive. Examples include critical national infrastructure such as power stations or defence installations such as military harbours. The most detailed depth data for Norway’s territorial waters is also exempt from public access, although exceptions may be made. If a company, for instance, is planning a submarine pipeline and needs a map with a higher resolution than 50 x 50 metres, it is necessary to apply to the Norwegian Armed Forces via the Norwegian Mapping Authority for more detailed data of a limited area (Geonorge n.d.). Hence, even today, in well-known democracies, the authorities exercise power by suppressing cartographic

knowledge. Such political intervention in national cartography will be further explored in the next section.

2.2 Political geography

According to Garfield (2012), the ‘best’ and ‘worst’ qualities of humanity are reflected in its maps, where discovery and curiosity compete with conflict and destruction. Consequently, the power dimension of cartography involves questions regarding objectivity and ethics, as the credibility of maps facilitates the distortion or concealment of facts. One example is the 2016 water crisis in the village of Flint in Michigan, USA, where the drinking water was contaminated by lead. The authorities manipulated cartographic elements such as scale to hide the pollution source in an attempt to disclaim responsibility (New York Times 2016; Sadler 2016).¹

An important topic regarding the ethical dimension of powerful cartography is that of propaganda maps. During turbulent times, maps have been used for psychological warfare in order to support territorial claims or anticipate a desired result (Harley 2001a) [1988]. This could, for example, involve the depiction of boundary changes not yet achieved or the colouring of regions not yet conquered, giving the impression that they were already included in the aggressor’s realm (Kagge 2015). This tendency to use maps to anticipate the course of events is well known from numerous territorial conflicts throughout history (Thongcai 1988). While the use of cartographic elements can be a subtle tool of influence, propaganda is the deliberate use of misleading information as a means of gaining or retaining power. It is an extreme form of authority involved in manipulating the public sphere, and history has many examples of this practice. During World War II, the dictators Hitler and Stalin both took full advantage of propagandist cartography. Strategically chosen map projections made vital regions appear disproportionately large, and colouring could emphasise claims or aggression.

¹ The topic is addressed in an unpublished paper: Lien A.C. 2018. Cartographic paradigms and maps as a discursive tool of power. VITSV900 Philosophy and ethics of social sciences. University of Bergen, Norway.

An example of the latter can be found in the Nazi news weekly magazine 'Facts in Review', published in English in New York, USA. On 30 November 1939, a map of German repatriation was published, with Russia depicted as a black threat, while Germany was attributed the white colour of innocence (Monmonier 1996, 106).

What is or is not propaganda is in the eye of the beholder. For example, many Argentinian maps will include as part of Argentina the Falkland Islands (called Malvinas Islands in Argentina), which might be considered controversial to some, as sovereignty over the islands is disputed. Great Britain asserted its authority in the area in 1833 and has ruled it since, but has been at loggerheads with Argentina, which asserts that the islands belong to it. In 1982, this dispute escalated into a brief war that the British won. In his 1991 book (2nd ed. 1996) *How to lie with maps*, the American Professor Emeritus of Geography and the Environment Mark Stephen Monmonier (1943-) refers to a map on an Argentinian stamp where the Falkland Islands are marked as Argentinian, and he mentions this as an example of propaganda (Monmonier 1996, 93-94). However, the Argentinian perspective would probably be that this is simply a map depicting the world as it is (Museo Malvinas 2023).

The link between geography and politics was theorised in the last part of the nineteenth century by the German geographer Friedrich Ratzel (1844-1904) and the British geographer Halford Mackinder (1861-1947) (Cresswell 2013, 43). According to Flint and Taylor (2018, 2), Ratzel may be called the 'father of political geography'. Inspired by Charles Darwin's theory of evolution and his concept of 'survival of the fittest', Ratzel established a parallel concept related to geographical space, which he called *Lebensraum* ('living space'). This was based on his reflections on how strong states will expand as far as they can reach, claiming territories from their weaker neighbours until each state has found its 'natural' size (Murphy 1996, 98). According to Ratzel, the driving force for this expansion is the desire for fertile land; meanwhile, others, such as the Danish archaeologist and geopolitical writer Gudmund Hatt (1884-1969), criticized this 'relationship between people and land' and claimed that access to resources and markets was vital (Hatt 1928, 230; Larsen 2011, 40-41). In both cases, the implied consequences of Ratzel's geopolitical landscape are that the most dominant

would suppress the most vulnerable, just as the fittest would survive in Darwin's ecosystem (Flint & Taylor 2018).

Alongside Ratzel's work, other geopoliticians, among them Mackinder, were concerned about the global power of the British Empire, which was at its peak at the turn of the twentieth century (Murphy 1996, 99). Until this point, the European powers had expanded globally almost without hindrance. However, as the world was now more or less conquered, any further expansion would have to be made at the expense of other European powers. Mackinder's concern was that the declining importance of Britain's dominance at sea and the rapid expansion of railways would open up a land-based alliance between Russia and Germany, threatening the British realm (Black 1997, 110). This was visualised in Mackinder's 1904 geopolitical map of the world, in which the Russian–Asian continent was highlighted as a pivotal area (Cresswell 2013, 44). The map was criticized for depicting the British Empire as larger than it actually was through the use of Mercator's projection, which is known to exaggerate areas with increasing latitude (Black 1997, 110). This is an example of how a cartographic element can promote a particular worldview, although it is uncertain whether Mackinder did this deliberately, or he simply applied the preferred projection of that time. Mackinder further argued that geographical knowledge would be vital to meet the new challenge, including an understanding of the geopolitical structure (Cresswell 2013, 43). Control of resources and the coastline was imperative (Murphy 1996, 99).

A focus on the territorial extent of states had close connections with the rise of nationalism. Murphy (1996, 100) argues that the idea of strong nation states controlling and expanding their territories contributed to the prelude to World War I. The way the map of Europe was redrawn after the war due to boundary changes and the creation of newly independent states caused embittered feelings and led to the emergence of extremist nationalism. Ratzel's theory of *Lebensraum* was embraced by the Nazis,

justifying their following invasion of their neighbours (Black 1997; Cresswell 2013, 45).²

In Scandinavia, Sweden was for many centuries a great power with an expanding realm (Mead 2020, 215). The internal power struggle in Scandinavia led to, among other things, the Kalmar War (1611–1613) and, from 1625, resulted in Danish and Swedish intervention in the Thirty Years' War (1618–1648), in which Sweden threatened territories as far south as Austria. At the Peace of Brömsebro in 1645, the union of Denmark–Norway had to cede large areas to Sweden, including the regions of Jämtland and Härjedalen in central Scandinavia (Gustafsson 2017, 104-106). In 1658, Denmark–Norway lost further areas to Sweden: Bohuslän, Skåne and Blekinge, as well as Trondhjems len (county), although the latter was regained by Norway in 1660 (Mead 2020, 216). In the 1720s and again in the 1740s, Sweden was at war with Russia and lost some provinces in the east; in 1809, the whole of Finland was lost.

Another Scandinavian geopolitical conflict which was reflected in maps was the Danish-Norwegian conflict over Greenland. When Norway was transferred from the union with Denmark to a new union with Sweden in 1814, Denmark kept Greenland, the Faroe Islands and Iceland, which originally belonged to Norway. After Norway's independence in 1905, there was a strong campaign to achieve Norwegian sovereignty over Greenland, as 'they considered the loss of Greenland in 1814 a national humiliation' (Blom 1973, 326). The conflict was not just about Arctic fishing and hunting rights, but about Norwegian national self-esteem (Blom 1973, 154). As part of the strategy to assert sovereignty, both Norway and Denmark built a network of trapper cabins in the area and financed several expeditions. Norway also established a weather measurement and telegraph station in eastern Greenland and actively opposed Denmark doing the same (Svendsen 2017, 59, 63, 67-68, 70). This corresponds to the

² The topic is addressed in an unpublished paper: Lien A.C. 2019. Norwegian national pride through maps. An analysis of cartographic elements as catalysts for Norwegian nationalism on 18th and 19th century maps.

National PhD-course in Political geography. University of Umeå/University of Uppsala, Sweden.

eighteenth-century situation in the Scandinavian Northlands, where the union Denmark-Norway and Sweden both tried to strengthen territorial claims by sending several scientific expeditions and by establishing settlements (Lien 2023a).

During the period 1900-1933, a range of Norwegian maps were published depicting the controversial area. On many of them, parts of eastern Greenland were renamed as Eirik Raudes Land, after the Norse explorer (*Eirik the Red*) said to have established the first settlement in Greenland towards the end of the tenth century (Blom 1973, 54; Norwegian Polar Data Center n.d.). The sovereignty dispute between Denmark and Norway lasted several decades and culminated in a Norwegian occupation of the disputed area in 1931 (Arnesen 1932, 97; Blom 1973, 55; Svendsen 2017, 13, 73). The following year, the Norwegian lawyer and polar explorer Helge M. Ingstad (1899-2001) was appointed governor (*sysselemann*) of Eirik Raudes Land (Svendsen 2017, 14). The occupation process included official Norwegian presence, the use of toponyms with nationalistic significance as a cartographic tool, and ground-breaking surveying and aerial photography (Arnesen 1932, 160). However, despite these efforts, Norway finally lost its claim on Greenland in the Permanent Court of International Justice (from 1945 named International Court of Justice) in The Hague in 1933 (Rasmussen 1933). One of the court's main arguments in favor of Denmark's claim was the comprehensive Danish mapping projects in Greenland that supported their sovereignty assertion (Strandsbjerg 2022, 29).

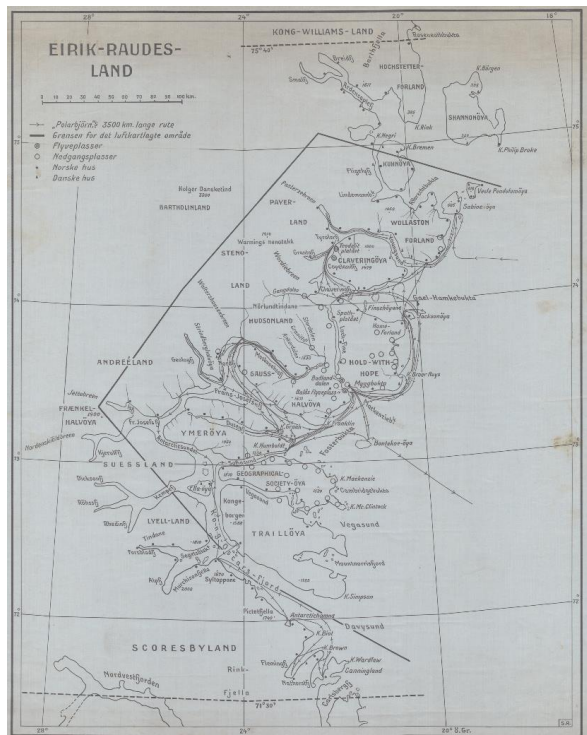


Figure 4: Map of Eirik Raudes Land, 1932 (Gunnar Scott-Ruud, Norsk Polarinstituttets kartarkiv)

Regarding research into the political use of maps in Scandinavia, there have been several inspiring projects by, among others, Professor Kimmo Katajala at the University of Eastern Finland. In his 2011 article ‘Maps, Borders and State-building’, he outlines the development of cartography in general and borders in particular. The connection between state-building and cartography is examined in a case study on the establishment of the Swedish–Russian border up to the end of the seventeenth century (Katajala 2011). This provides highly interesting knowledge on the phenomenon of geopolitics from a Scandinavian perspective. Other studies on the historically complicated relationship between Norway and Sweden have been conducted by Gustafsson (1995), with focus on the history of the national boundary; and Sørensen & Nilsson (eds.) with their 2005 book on ‘Norwegian-Swedish relations for 200 years’.

According to Berg (2009, 95), Norway in the mid-nineteenth century provides a good example of how cartography was used as a political instrument. The mapping of Norway by Norwegian cartographers was aimed partly at reinforcing the boundary separating it from Sweden, and several orders from the Swedish king on a common framework for the mapping of the Scandinavian peninsula were rejected by the Norwegians (Harsson & Aanrud 2016, 178).

2.3 Sovereignty and national identity

With the previous section’s outlining of the political power of cartography as a background, I explore more deeply the map’s impact on state formation and national identity in the following section.

A map is the perfect tool to symbolise a nation (Monmonier 1996, 88). Sovereigns have for centuries been eager to map their realms, and cartographic elements such as colour, boundary lines, or projection have supported their claims. The British Empire even had its own colonial dye, a pinkish red, which covered large parts of the world map, demonstrating the extent of the Crown (Anderson 2016).



Figure 5: *Imperial Federation*. Map of the world showing the extent of the British Empire in 1886. British territories coloured red. (Colomb & Crane, David Rumsey Collection, Stanford University, USA)

The cartographic division of the world between Spain and Portugal in 1494, the allocation of the colonies in Africa in 1884/85, and the Treaty of Versailles after the World War I, are all examples of the great powers' use of cartography to gain political influence (Schneider 2007). Often, lines on the map were drawn without taking groups of people, political conditions, or physical terrain into account, and the mapping legitimised the conquests and manifested European imperialism (Harley 2001a, 59 [1988]). Harley (2001a, 57) [1988] claims that maps are 'the weapons of imperialism', and unexplored regions known as *terra incognita* were mapped as if they were unknown to all mankind (Wood 1992). Western cartography totally ignored the spatial understanding of the indigenous population (Schneider 2007). This cartographic discourse created new narratives of the conquered area that were intended to support a territorial claim (Thongchai 1988; Losang 2018). For many countries, a national mapping project was a tool to maintain ownership of the cartographic discourse. One example is the Philippines, which emancipated itself from Spanish rule in 1898. The

following year, Filipinos managed to map their country and issue a national atlas. In this way, they created their own cartographic discourse, just before they were again conquered, this time by the United States (Losang 2018).

The cartographic system of demonstrating dominance backfired in some cases on the colonial powers when the colonies became independent. According to Anderson (2016), cartography helped facilitate decolonisation by challenging the Eurocentric world view. As early as the 1780s, the newly emancipated British colonies on the North American continent drew up a map of their new nation. This manifested their independence, further emphasised by a new American prime meridian that displaced the European meridians (Barber and Harper 2010). During the twentieth century, other former colonies would also publish identity-building national map collections (Monmonier 1996). In other cases, colonial cartography continued into the independence period, for example in Sri Lanka and Botswana, where selective perception of what was considered important led to misleading depictions of the landscape and agricultural resources (Axelsen & Jones 1987, 453-454).

In Scandinavia, there are several examples of mapping projects connected to national identity. One of them is when Finland published what is regarded the world's first national atlas in 1899, contributing to the national cartographic discourse in a period of growing opposition to Russian rule (Ormeling 2015, 96). Another example from the same period is Norway's polar imperialism, in which exploitation of polar resources such as whales in Antarctica and coal on Spitsbergen became an important part of Norwegian nation-building in the first half of the twentieth century (Jones 1999, 141-143). A recent example is the mapping of Greenland, where Denmark signed an agreement with South Korea in 2013 on cartographic assistance. This led to strong reactions, with many Danes believing that the outsourcing of a national mapping project challenged Danish sovereignty over Greenland at a time when there is growing global interest in the Arctic. The political dimension in the mapping project developed into a major issue. Two years later, Denmark took responsibility for the mapping itself and implemented the project in the period 2016-2022, thus marking Danish sovereignty over the geostrategic important Greenland (Strandsbjerg 2022, 6).

Cartographic representation of territory can also be powerful enough to depict state-building that has not yet taken place politically (Schneider 2007). One example is Canada, where Taylor (1994a, 15) argues that the territory was given political meaning through cartography before the nation came into being. His research indicates that cartographic knowledge through four centuries of mapping projects have influenced Canadian identity and supported the state creation; all the way from the explorations in the sixteenth century, via the union of colonies into a federation in 1867, and until the last in a row of provinces joined Canada in 1949.

However, cartography alone is normally not powerful enough to build a foundation for state formation. For example are the world's many micro-‘nations’ unlikely to develop into independent nations, although cartography can be a tool for drawing attention to them. One example is the micro-‘nation’ of Seborga, an Italian village close to France. Historically it was an independent principality until sold to the King of Sardinia in 1729, and it proclaimed independence from Italy in 1963 (Klieger 2012, 177). In the 1990s, the ‘principality’ was included in an online atlas, and ‘the very fact of featuring in an atlas proved encouraging enough [for them] to start minting Seborga’s own coins’ (Vitaliev 2019, 27). Still, the cartographic depiction of this micro-‘nation’ turned out not to be sufficient for taking state formation further.

Unlike the example above, the emergence of new nations towards the end of the nineteenth century was closely connected with the transition from old dynastic societies to industrial capitalism (Anderson 2016). Fundamental changes in society were thus a driving force, and cartography was one of several tools enabling the wave of nationalism. In this context, many countries used their school system to support nation-building processes, as the new generations were influenced by the world views presented to them through maps and atlases (Taylor 1994b; Schneider 2007, 9; Baron 2022). Scientists also had great influence and were able to promote their views about the world via schoolbooks (Jones 1999, 138). In Norway, the 1860 law on primary education made knowledge of the world mandatory. Several Norwegian cartographers such as Carl B. Roosen and Georg Prael (1798-1883) constructed maps intended for school use. Together with later cartography depicting the results of Norwegian polar

expeditions, they influenced geographic perception and contributed to national pride (Berg 2017, 198-199, 205). On the other side of the border, Swedish cartographers had a similar influence. Many of the military officers were directly involved in teaching or as authors of textbooks as well as constructors of school maps (Widmalm 1990, 327).

In some places, however, the nation-building process was slow. The vast common areas in Nordkalotten had ambiguous sovereignty and unsettled boundaries for a long time. Katajala (2011, 80) points out that when the border was drawn between Sweden and Russia after the peace treaty in Teusina in 1595, the northernmost part of the border was neither surveyed nor marked with border cairns. This lack of cartographic interest had a parallel in the lack of distinct national identities in Nordkalotten. Even after a new attempt in 1617, the border commission failed to establish exact borders in the area (Katajala 2011, 82-83).

Today, sovereignty is still expressed through cartography, which interprets certain geographical phenomena. The cartographic depiction of space has thus a political role in shaping images of the world. The fundamental point is that our current system of states depends on maps that link territory and sovereignty, and cartographic presence in a region demonstrates territorial claims (Strandsbjerg 2022, 30). Even international law refers to cartographic positions, for example in the demarcation of exclusive economic zones (Strandsbjerg 2019, 38). After a long period of globalism, the last decades have seen an increasing trend towards deep structure changes such as regionalism (for instance Cataluña in Spain), separatism (exemplified by Brexit) and stronger national identities. This has also cartographic consequences, as sovereignty is a boundary regulating mechanism (Klieger 2012). Still, sovereignty is today a concept of authority that mainly is taken for granted all over the world. For some theorists it is comparable to a similar idea of power within fixed borders on the map, which is private property (Philpott 2020). Just as a map has an official status, it also has an authoritative value, explicitly so when ownership of an area is documented by a cadastral map (Boria 2016, 101).

Even the visual form of a nation is coded with meaning, comparable to logos in which complex information is boiled down to a single shape such as the Mercedes star or the Nike swoosh (Bartram 2012; Svenningsen & Dahl 2016, 6). Many people learn at school that Italy resembles a boot, and even children can recognise the shape of the African continent. Another example of the visualisation of a nation is the flag of the Republic of Cyprus, which depicts a map of the island on a white background. In the case of Norway, the country was depicted in its correct shape for the first time when Peter Andreas Munch constructed his map of Norway in 1845 (Enebakk 2012, 131; Harsson and Aanrud 2016, 363). This enabled the very outline of Norway to be connected with Norwegian national identity.

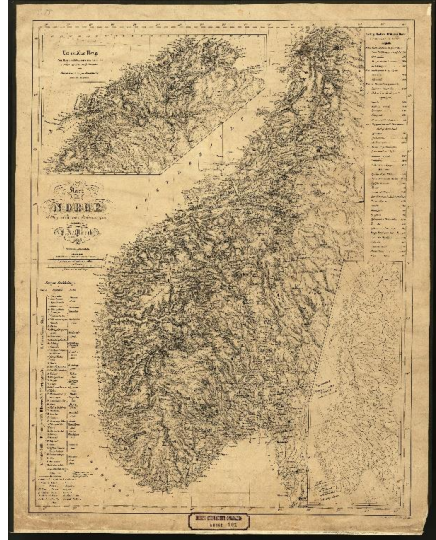


Figure 6: P.A. Munch's 1845 map of Norway, with the country's correct shape (Norwegian Mapping Authority/Kartverket)

In connection with the Norwegian Mapping Authority's 250th anniversary in 2023, the Bank of Norway (*Norges Bank*) issued a commemorative coin. They argued that 'the establishment of the Norwegian Mapping Authority [was] a significant national event at a time when Norway was not yet an independent state. The maps helped to define the nation, they supported the defence of its territory and the establishment of infrastructure and communications [...]. In a broad sense, the Norwegian Mapping Authority has shaped who Norwegians are as a nation [...]. The verso side of the coin shows a stylised map of Norway and Svalbard, giving associations to map sheets or to the piksels that now dominate the Mapping Authority's work' (Norges Bank 2021).



Figure 7: Commemorative coin motif 'Triangeltekst' by Torgeir Husevaag. (Photo: Nils S. Aasheim/Norges Bank)

As explained in Section 1.2 on the historical backdrop to this topic, national identity in the Scandinavian region is a complex concept that mainly took shape during the nineteenth century. One reason for the partial divergence of loyalties across borders is the turbulent history of the region. Today, the term ‘Scandinavia’ includes the countries of Norway, Sweden, and Denmark (not to be confused with the ‘Nordic countries’, which, in addition to Scandinavia, include Finland, Iceland, the Faroe Islands, and Greenland). Scandinavia has always been a region where the different nations have much in common, whether it is history, culture, or languages, and Norwegian, Swedish, and Danish are still mutually understood by most inhabitants.

Geographically, Scandinavia consists of the Scandinavian peninsula (covering Norway and Sweden), plus Denmark (Mønster-Kjær 2011). Although the term itself was mentioned in the first century AD, it was only in the nineteenth century that ‘Scandinavia’ really came to the fore. From the beginning of the Norwegian–Swedish union in 1814 until the 1840s, Sweden used it as a geopolitical term that included only the geographical Scandinavian peninsula, that is, Norway and Sweden (Hemstad 2018b, 114; Lien 2023b). In the second half of the nineteenth century, a Scandinavian movement emerged that at this point also included Denmark. This was based, among other things, on scientific collaboration between the three countries. This sense of unity was supported by some leading Norwegians who identified themselves as Scandinavians, but it was resisted by many other popular and respected people, such as the writer Henrik Wergeland (Falnes 1933, 29). His ironic poem from 1845 is a symbol of this resistance to a common Scandinavian unity: ‘Where is the famous country Scandinavia? I stare as hard as I can through the blue of the air, because if it is somewhere, it is probably on the moon’³ (Hemstad 2018a, 62).

³ The original text of the Norwegian writer Henrik Wergeland is as follows: ‘Hvor ligger det berømte Land Scandinavien? Jeg stirrer hvad jeg kan igiennem Luftens Blaanen; thi ligger det etsteds, det ligger nok i Maanen’ (Wergeland 1845, 30).

2.4 Elements with influence

Following these examples of their deliberate use, this section explores the theory of cartographic elements in more detail.

The first cartographic element I consider is the prime meridian (Lien 2019). This line indicates zero degrees of longitude and is a starting point for all east-west positioning in mapping (Dunn & Higgitt 2014). Dozens of prime meridians have been used over the centuries, one of the most popular being the line that runs through the small Canary Island of El Hierro, called Ferro in Portuguese. Its use is documented back to the second century AD, and it was frequently applied until the end of the nineteenth century (Kennedy and Regier 1985; Vilicic & Lapaine 2018). At the same time, there were about 25 other prime meridians in use, of which several were used to support national identity, such as the line through Paris in France or Greenwich in Great Britain (Howse 1980). Together with a number of local prime meridians, this diversity led to challenges in cartography, trade, shipping, and science (Withers 2017).

In Norway, for a long time, it was not common to use a coordinate system in the maps (Dahl 1914). Later, there was an abundance of local prime meridians linked to local solar time in different parts of the country. Gradually, as better infrastructure linked remote parts of the country together, the need for a common system grew. Towards the end of the eighteenth century, a national prime meridian was established through Kongsvinger, a fortress town near the border with Sweden (Ekman 2011). Later, several other national prime meridians were established, of which the line through the capital Christiania (now known as Oslo) was the most frequently used. This prime meridian was established in 1847 during the political union with Sweden. Its establishment was highly controversial, as the Swedish sovereign regarded the new Norwegian prime meridian as having symbolic power as an expression of national identity and support for independence (Pettersen 2014). The Swedish authorities were eager to co-ordinate the two countries' cartography and issued several royal decrees on the matter (Harsson & Aanrud 2016, 127; Berg 2017, 196). However, the Norwegian

firm resistance was reinforced through the Norwegian national mapping series, which ignored the Swedish requirements (Lien 2019).



Figure 8: Kongsvinger meridian. The text on the plate at the flagpole translates: 'The flagpole at Kongsvinger fortress was from 1779 to 1909 the starting point (origin) for the mapping of southern Norway'. Sweden can be seen in the background. (Photos: Anne Christine Lien)

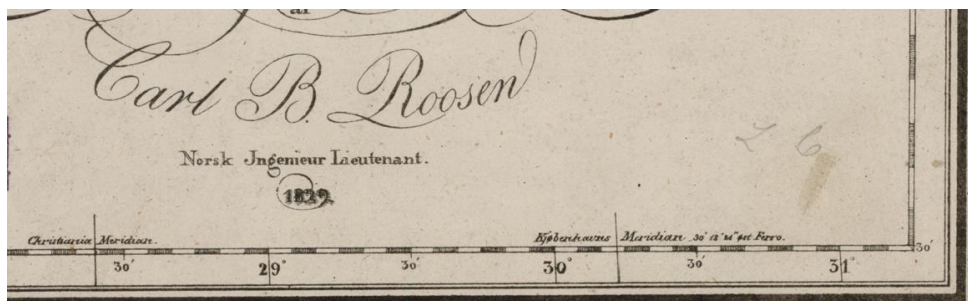


Figure 9: Extract from C.B. Roosen's map of Norway from 1829, depicting a variety of prime meridians: Copenhagen, from the former political union with Denmark; Ferro, the widely used international prime meridian of the time; and Christiania, the not yet officially established national meridian. (Norwegian Mapping Authority/Kartverket)

An agreement on a common, global line of zero degrees longitude was formalised at an international conference in 1884 (Higgitt & Dolan 2009). However, it took decades before the prime meridian of Greenwich was adopted around the world (Bartky 2007).

In the case of Norway, there has been little research into the development of the country's prime meridian. As part of my research project, I explored whether I could find the same significance between the prime meridian and the building of national identity in Norway as in, for example, the United States, France, and England.

To be able to answer the main question on sovereignty through cartography, I had to explore further cartographic elements. The second element I chose to examine was borders between nations and how they might have a role as a political instrument (Lien & Lundberg 2022). According to Barber and Harper (2010), borders are essential for organising the distribution of resources and territory. Through the centuries, the drawing of boundaries on maps has been disputed partly due to their resource allocation function (Newman 2011). As early as 1323, the Peace Treaty of Nöteborg between Sweden and Russia mentioned valuable resources such as good fishing places, demonstrating that a fair distribution of wealth may be among the conditions for establishing a border (Katajala 2011, 78-79). This was also an important issue in the eighteenth century during the process of establishing the border between Norway and Sweden in central Scandinavia. In 1734, Swedish authorities organised an excursion by Swedish botanist Carl Linnaeus (ennobled von Linné in 1757). His mission was to explore the region's resources, possibly as part of the strategy in the border positioning negotiations (Linné 1734; Larspers 1986; Lien & Lundberg 2022). Linnaeus himself called his system of species identification a 'map of nature' (*mappa naturae*) (Edney 1994, 105). Mapping of resources increased during the nineteenth century, and even today the mere potential existence of future exploitable resources can lead to contested borders and territorial disputes (Black 1997, 84-87).

Before the mid-seventeenth century, few borders were marked on maps in general. People had loyalty to religion, tribes, or even influential families that ruled large areas (Flint & Taylor 2018, 133). Only gradually, as state formation evolved, did a focus on the delimitation of territories grow. However, the maps would often depict rulers' ambitions rather than their actual realm (Katajala 2011, 74). Furthermore, changes to boundaries due to alliances or treaties were not always updated in maps, as ambiguous boundaries were in the interest of rulers with an appetite for more territory (Briså 2014).

Total hegemony within fixed boundaries was a concept that, in particular, evolved during the seventeenth and eighteenth centuries (Nordman 2020, 163). According to Branch (2013), this development was partly driven by cartography as a tool for demonstrating the spatial extent of political power. When a boundary was defined on a map, it was regarded as an official affirmation from both sides of the corresponding dividing line in the terrain (Black 1997). The cartographic boundary also had influence in its own right as a powerful line on the map, even if not always in accordance with territorial reality (Schneider 2007). Mead (2020, 215) similarly states that territorial claims were legitimized by boundaries demarcated on the map, even if reality did not correspond with the cartographic image. In regions with frequent border revisions, the connection between border treaties, depiction of borderlines in maps, and demarcation of the line on the ground often did not correspond with the imagined border in the mind of the inhabitants (Katajala & Lähteenmäki 2012, 8).

Different approaches to defining a border ranged from using natural dividing lines, such as rivers or mountain ranges, to establishing boundaries between groups of people with shared language or culture (Pounds 1954; Jones 1959). Borders can also be characterised as ‘soft’ or ‘hard’, depending on the level of aggression on either side and whether they form a barrier or a permeable zone. Normally, the boundary line is demarcated to define a nation and keep threats out, but it has also acted as an instrument to keep the inhabitants within and isolate them from influence from abroad (Paasi 2011).

The prevailing view today is that borders should not be moved. One exception is the adjustment of the border between Denmark and Germany in 1920. The basis for this was a referendum, which came about as the result of Germany’s defeat in World War I and the Versailles Peace Treaty of 1919. The border was moved approximately 50 kilometres south, so that Danish-speaking Northern Schleswig (*Sønderjylland*) became recognised as Danish (Fink 1979). Another example is the handing over of the Petsamo Corridor from Russia to Finland by the Tartu Peace Treaty in 1920. The corridor was given to Finland to fulfil an agreement made in 1864, when Finland transferred the munitions factory and town of Sestroretsk (*Siestarjoki*) to Russia in return for the

promise that Petsamo would become Finnish. This was however not realised until 1920 after Finland's war of independence (Engerengen & Holm-Hansen 2023). On the other hand, there are contrasting events demonstrating how inviolable and firmly established a nation's borders can be. One example is a Norwegian proposal to give Finland a mountain peak as a gift for its 100th anniversary as an independent state in 2017. Through the border being moved by 40 metres, a Norwegian mountain peak would end up on the Finnish side and become Finland's highest mountain (Samuelsen 2015). The idea was met with enthusiasm by many people, but was rejected by the Norwegian prime minister, who emphasised that 'border adjustments between countries raise challenging legal issues' (NRK 2016).

There are several different borders and topics involved in Norway in relation to the neighboring countries. Norway has the world's second longest coastline, and twelve nautical miles outside the base line, the maritime territorial line constitutes the Norwegian boundary to the south and to the west (Røeggen 2022). In addition to borders with Sweden and Finland in the east, Norway has an almost 200 kilometres long border with Russia. The areas formerly used and taxed in common by Norway and Russia (which from 1809 included Finland) were divided between them by the establishment of a boundary line as late as 1826 in a detailed treaty (Lovdata 1826; Black 1997, 128). 75 percent of the present-day Norwegian-Russian boundary line follow rivers and lakes (not including the section between Norway and present-day Finland) (Politidirektoratet 2018). The 1826 Treaty specifies that the dividing line should follow the deepest part of the waterbed. A challenge with borders along such natural lines is that they lack precision (Sahlins 1990, 1441). Parts of the Norwegian-Russian boundary have recently been adjusted due to shifting riverbed, a comprehensive process that was finalized in 2019, and that demonstrates the complicated nature of changing a border. The result also required 18 new border maps to be constructed, indicating that cartography represents dynamic spatial phenomena (Wernersen 2018). This was also emphasised during the border revision between Norway and Sweden in the period 2021-2023. A stream in Dalsland in Sweden had changed course, and the border was moved accordingly, increasing the Swedish realm by 500 square meters (Callstam 2023).

Parts of the Norwegian-Swedish border are among the oldest in the world, established as long ago as the tenth century (Ehrensverd 2006, 318). Other parts have historically proved highly controversial, mainly due to conflicts over border resources. This is especially true in the northern regions and for a stretch in central Scandinavia, where the positioning of the dividing line was bitterly contested (Nielsen 1874, 16). The final shape of the Norwegian–Swedish border was concluded by a border treaty in 1751, after a challenging process (Gustafsson 2017). According to Berg (2009, 91-92), the new border has ‘gradually solidified as a consequence of the development of modern cartography’. The repeated depiction of the border on various maps has ensured the dividing line to stuck in people’s consciousness. However, there was a missing link between the Norwegian–Swedish borderline and the role of cartography in its final positioning, which needed to be investigated as part of my overarching research question (Lien & Lundberg 2022).



Figure 10: Border cairn no. 127 on the Norwegian-Swedish boundary in the Trysil area in central Scandinavia. (Photo: Anne Christine Lien)

I next explored the literature on colours in cartography, to learn how this element might influence perceptions of affiliation (Lien 2023a). As a cartographic tool, colouring has been used to add boundary lines and identify territories (Monmonier 1996, 170; Delano-Smith 2007, 555). Colouring as an instrument to strengthen borderlines can be seen in a 1507 atlas based on Ptolemy’s cartographic guidelines (Katajala 2011, 67). Katajala (2011, 75) also refers to an early map of Scandinavia from 1427, where rather schematic borderlines between the three kingdoms are emphasised by colouration. The positioning of borders and the extent of the identified units may have been a result of instructions to the cartographer from a patron (Woodward 2007, 603). Based on black-

and-white originals, different printed copies were hand-coloured for diverse purposes, pleasing various clients for various motives (Ehrensvärd 1982, 38; Woodward 2007, 606). The consequence was a range of copies of the same original, each of them depicting the world in a different way (Pelletier 2007, 1499).

Coloured maps can be used politically to influence users' conceptions of the political division of the region in question, or of the image of the country. As such, they are part of what American Professor Emerita of Geography Judith Tyner describes as 'persuasive maps ... whose main object ... is to change or ... influence the reader's opinion' (Tyner 2018, 439). A red colour covering the area of the former Soviet Union could for example be interpreted as symbolizing 'the red danger' of Communism during the period of the Cold War (the geopolitical tension c. 1947 – c. 1991) (Monmonier 1996, 170-171). On other maps, the persuasive aspect has been underlined by placing a national coat of arms over the claimed territory. This political effect is still embedded in cartography today, whether it is used unconsciously or on purpose (Robinson 2010, 76). As an example, there was an incident arising from a 2017 Norwegian television newscast about the autonomous community of Catalonia in Spain. As an illustration on the screen, the entire Iberian peninsula was marked with the Spanish colours and flag, giving the visual impression that Portugal had been annexed by its neighbour. The event led to a Twitter storm in Portugal and also received great attention in the Norwegian press, with headlines such as 'Spain conquers Portugal' (Drefvelin 2017). The reasons for most misleading cartographic depictions of our time are probably not political aggression. Nevertheless, incorrect maps due to slovenliness or lack of knowledge still leave an image of a political division in the area that does not correspond to the actual situation.

A much more dangerous context lay behind the map of Russia published in 2015 in an Italian journal of geopolitics. On the map, the Crimean peninsula was coloured orange, just like Russia, in contrast to the purple colouring of Ukraine (Canali 2015). According to Boria (2016, 97), this was, in 'the language of political cartography', virtually the same as declaring Russian sovereignty over Crimea. This is an example of the performative power of maps, capable of having the effect of change. These theories

and examples on the colouring of maps were considered useful for answering the main research question of this thesis. However, there was a gap in the literature regarding the connection between this cartographic element and the historical development of perceptions of sovereignty in Norway. Until the middle of the eighteenth century, large parts of Nordkalotten were common taxation areas without established lines of demarcation (Branch 2013, 32). However, there were historical patterns of administrative and ecclesiastical control regarding which country different settlements belonged to. For example, the Sámi village of Kautokeino was under Swedish administration until the boundary was demarcated in 1760 following the 1751 Border Treaty. To explore the complex issue of sovereignty in this region, I decided to examine coloured maps of this area.

Finally, I dived into different cartographic elements such as map titles and dedications, decorations, map symbols, and toponyms (Lien 2023b). These details on maps may support nation-building processes and exert a geopolitical impact (Hemstad 2018b, 122). The map title may reveal the cartographer's opinion on the affiliation of the depicted territory, and the dedication may emphasise a connection to a ruler or another source of financing for the map's construction. Through the map decorations, the cartographer has the possibility to tune the overall impression in a certain direction by visualising information outside the simple topographical map (Schneider 2007, 137). According to Harley (2001b, 161) [1989], decorations may add an intertextuality to the map and turn it into a tool expressing sovereignty. National romantic elements supporting national identity could be part of this additional expression.

Furthermore, symbols on the map may simply represent the practical need for depicting for example the country's infrastructure. But the motives behind the use of map symbols may also be to underline certain aspects of society, whether it be flourishing industries, a strategic network of fortresses, or prospering settlements with good harbours. Niemi (2005, 402) points to an example of the deliberate use of symbols on maps, namely the unusually large number of schools and churches found on nineteenth-century maps of northern Norway's border areas. Many of them were constructed to homogenise the culture of the population along the border as part of the nation-building

process, and cartography served as a demonstration of this ‘national bulwark’ symbolised on the maps.

Likewise, the use of toponyms may be linked to national self-esteem or the suppression of it, even if place names more frequently have just a practical locational function (Keates 1996). Monmonier (1996, 110) calls naming ‘a powerful weapon of the cartographic propagandist’, and Falnes (1933, 282) claims that nationality and language are closely connected. One example of the significance of toponyms is the 1507 Waldseemüller world map, which features the name ‘America’ for the first time. The map’s wide distribution dethroned all other names that were used for the South American continent, such as Terra Nova (*New Land*) and Terra Papagalli (*Land of Parrots*), and had an important impact on American national self-esteem (Schneider 2007, 9; Garfield 2012, 120).



Figure 11: Extract of Martin Waldseemüller's 1507 map of the world, 'Universalis cosmographia', featuring the name 'America' (Library of Congress, Washington D.C., USA)

A more recent example is how Google Maps was forced by Russia to change Ukrainian toponyms in Crimea to Russian after the 2014 invasion (Bjørnstad and Henden 2016). This was a demonstration of cartography legitimating a territorial claim and has its parallel in the way the European empires renamed their colonial conquests, with no regard for the existing culture in the defeated areas. Names such as New York and New Holland (Australia) are examples of this language imperialism (Schneider 2007, 9). By contrast, toponyms have also been used by colonies as an emancipation tool. One

example is the Indian authorities' efforts to replace colonial-era toponyms with names of local significance. Two of many changes were the city known as Bombay during the period of British rule, changing in 1995 to Mumbai; and Madras, which was changed to Chennai (Nambiar 2016). This exemplifies what Chloupek (2019) calls 'the cartographic language of a rising nation'.

There are also many examples of the suppression of indigenous and minority toponyms around the world, including in Norway. As late as 1848, the Norwegian Ministry of Finance referred to the Arctic parts of the country as a Norwegian colony. These remote areas were used for deportation of criminals from Denmark and southern Norway from the seventeenth century until the Criminal Law in 1842 (Odelstingproposisjon 1848, 23; Pedersen 2020). The Norwegianization of the indigenous population in this region was for a long period official policy, including renaming of original Sámi toponyms. This policy was first changed in the 1970s. In a letter to the Ministry of Transport in 1972, the Norwegian Mapping Authority declare that they realize that there has been a discriminatory use of names on maps in Northern Norway, and that 'maps are significantly degraded as a means of communication' when toponyms in maps and place names used by the local population do not correspond (Truth and Reconciliation Commission 2023, 474). In 2018, the Norwegian Parliament appointed an independent commission to scrutinize the injustice done to the indigenous population. Chapter 16 on 'Norwegianization of names' refers among other things particularly to toponyms on official Norwegian maps of the period and emphasizes the connection between place names and territorial rights. The use of traditional toponyms is closely linked to the inhabitants' mental maps, and place names established in maps become an expression of which identity is recognized in the region (Truth and Reconciliation Commission 2023, 462, 468).

With these theories in mind, I wanted to review the role of selected cartographic elements on Norwegian maps in the studied period and consider their significance for the rising Norwegian desire for political independence.

3. Research questions

The literature review in the previous chapter constitutes the theoretical framework for the research project and forms the basis for defining the points at issue. The review reveals that there is not sufficient knowledge in the literature on the cartographic elements of Norwegian maps used as a political tool. Thus, the fundamental research question of this thesis is as follows:

How did cartography influence the development of Norwegian sovereignty in the eighteenth and nineteenth centuries?

The four articles are based on a review of the literature and extensive analysis of historical maps. Each examines one or more of the cartographic elements discussed in chapter 2.4 and considers the role of certain maps within their historical context. The articles aim to answer the following research questions:

Article 1:

How did the use of prime meridians in Norwegian maps develop from 1770 to 1970?

To what extent was Norwegian cartography under the influence of Swedish authorities in the early decades of the political union between Norway and Sweden, from 1814 onward?

What traces, if any, can be found in Norwegian maps in the years 1770-1970 that indicate that different actors in Norway used cartography as an instrument of power to demonstrate the will for independence?

Article 2:

What was the cartographic depiction of the borders in the Femunden region in central Scandinavia before and after the 1751 Norwegian–Swedish Border Treaty?

How did the boundary-establishing process proceed, and what role did valuable resources in the area play?

Was cartography used by Norway and Sweden to pursue territorial claims in the border-establishing process, and if so, how?

Article 3:

Did the cartographic depiction of Nordkalotten between the sixteenth and nineteenth centuries affect territorial claims and perceptions of possession in the region, and if so, how?

How might the use of colouring as a cartographic tool have helped promote the interests of different nations in Nordkalotten?

Article 4:

How was Norwegian nation-building in the late eighteenth and early nineteenth centuries reflected in maps of the period, through cartographic elements such as map titles, dedications, and toponyms?

How might Swedish maps of Scandinavia from the late eighteenth and early nineteenth centuries reflect Sweden's attempts to assert its authority over the Scandinavian peninsula?

During the research process, the aim has been to answer the above-mentioned research questions using a comprehensive selection of maps, examined through relevant methods, and with consideration of their historical and political context. The following sections address some of these elements before the research questions are discussed in depth in chapter 6.

4. Methods

Within the framework of the individual published articles, it was not possible to elaborate sufficiently on methodological considerations. The project's choice of method and the justification for this will hence be more thoroughly explained in the following. This section presents the research design and the scientific theoretical point of view, as well as the process related to data collection and analysis. It also includes reflections on the data's reliability and validity and ethical perspectives on the research process. The main purpose is to justify the choice of methods and discuss how weaknesses in the data or methodological evaluations may have affected the results.

4.1 Development of research design

Research design is the chosen strategy for using empirical data to explain and answer research questions by linking data collection, methods and techniques, analysis, and interpretation (Clifford et al. 2012, 7). The research design serves as a reference frame that helps guide the researcher towards the goal, defining what will be investigated and how this will be carried out (Krumsvik & Røkenes 2016, 66; Brottveit 2018, 63). In the process of determining a specific design suitable for my research, I have considered a range of factors.

First, the overall research objective was established, where the purpose of my study is to investigate potential relations between cartography and political assertiveness. This implies a causal design suitable for finding explanations and connections. The identification of gaps in the literature led to the themes to be addressed. The specific research questions were prepared, but as occurs often in qualitative research, they developed during the process as the data material was explored. The empirical material includes, first and foremost, historical maps from the study period, but comprehensive literature placing the maps in their historical and political context was also essential. In this way, primary research (research conducted by me, such as the analysis of maps as primary sources) was combined with secondary research (referring to research conducted by others, available through textbooks, journals, websites, and so on)

(Krumsvik & Røkenes 2016, 70). Regarding data pattern to be examined, I rejected the extensive research design, which focuses on large datasets for a 'representative' generalisation. By contrast, my research has an intensive research design, as it describes a small number of selected items, analysed in maximum detail for a causal explanation (Clifford et al. 2012, 11).

An important methodological reflection was to choose which method would be most suited for the collection of data. The data in this project do not lend themselves easily to counting or measurement. They are qualitative data, documents subject to interpretation in which the content is analysed, and can only be explored through qualitative methods. Qualitative research is characterised, among other things, by the fact that the process does not follow a straight course. Data is often obtained from several sources, and different methods are combined (such as document analysis, interviews, and observations) (Ryen 2002, 201). This is called 'triangulation', where multiple sources or methods overlap to ensure a maximum of understanding, increase the verification of results, and reduce sources of error (Jick 1979, 602; Gray 2004, 256; Clifford et al. 2012, 8). However, the ontology of my study is subjectivistic-relativistic, meaning that phenomena are not considered unquestionable. This is within the Heraclitean ontology of *becoming*, which emphasises the changing world (Gray 2004, 16). This is connected to the epistemology of hermeneutics, with a focus on a deeper level of comprehension. The complex social reality is understood through interpretation (Gray 2004, 22). As previously mentioned, this also implicates that the research question may change along the way as the picture is clarified (Ryen 2002, 75; Brottveit 2018, 64).

To summarise, my research design is qualitative, causal and intensive, focusing on explanations derived from a limited selection of sources. It is connected with a subjectivistic-relativistic way of thinking and a hermeneutic research tradition. I consider this to be suitable for the aim of the thesis, going in depth into a relatively narrow field, although a slight shift towards a more extensive research design with a considerably higher number of analysed maps could have contributed to further nuances.

4.2 Scientific theoretical perspective

The science of cartography is a tool for representing geographical perspectives by imparting spatial data. How these perceptions are produced can be seen from different methodological viewpoints. In the hermeneutic perspective that characterises my research, the interpretation process is described as being circular (Brottveit 2018, 130). The researchers' background knowledge, or 'pre-understanding', is based on their own experiences and perspectives, including results from previous research (Grønmo 2016, 393). During the new research process, they increase their understanding and insight through exploration of the data material. New knowledge derives from interpretation of the examined material, and through analysis and discussion of the research question from the new perspective, the original background knowledge is adjusted. Based on this, new research questions arise, and the hermeneutic process continues in a circle.

Hermeneutics is strongly connected to qualitative research design, and emphasises different interpretations of phenomena, claiming that there is no objective truth (Brottveit 2018, 65). The interpretation takes place within a larger social, cultural and historical context (Grønmo 2016, 391). In this context, maps are considered to be 'interpretations of places, halfway between text and images, between the subject and the object, and between science and art' (Furia 2021, 56). Over the centuries, an incredibly large variety of maps have been made by different people, from military officers to priests, who have taken their own perception of space as a starting point. This interpretation of reality, expressed through maps, leads cartography to be seen as hermeneutical by nature (Furia 2021, 63). This variety of meaning is reflected in the empirical material in my research. The analysis of the maps in the published articles demonstrates that Scandinavia was interpreted differently depending on whether the cartographer was a historian with a focus on the past, a military officer investigating a nation's resources and its ability to defend them, or a cartographer constructing maps for the king. This accords with Matthew H. Edney's concept of cartography as a human practice, where the different originators of maps will present their own perspectives, a fact very often not noticed by the map users. Edney further argues that maps have been perceived as having a natural authority in themselves and thus have been treated as a

subject, while the new theoretical approach to cartography emphasizes that maps are made by people and defined by their cultural context (Edney 1996, 187-188).

To map the maps, the chosen methodological approach is to analyse how the maps can support or suppress discourse. A discourse is a shared opinion about a phenomenon, and with maps as instruments, a common understanding of the world can be created. According to Black (1997, 18), ‘spaces were created through the exercise of power’. Different cartographic elements can be added, omitted, or adjusted to influence the picture, and the question arises of whether cartography shapes discourse or whether contemporary discourse determines the depiction of the world through maps.⁴

4.3 Preparations and fieldwork

The project was planned as a part-time research process over a period of at least five years. Fieldwork, in the sense of ‘hands-on’ research in archives and institutions, was scheduled to fit into periods when I could take some days off my daily work, and travels were planned accordingly.

When one is planning for fieldwork on historical material, the preparations differ greatly from more common fieldwork on landscapes or people. Historical material such as maps is what Hodder (1994) calls ‘mute evidence’, as the authors or constructors are long gone. Our interpretation process is thus left without a range of valuable qualitative research methods that could shed light on the origin of the map. Another important aspect is that historical sources can provide information about the geography of the past, but the question is often to what extent the material is preserved, in what state it is kept, and how accessible it is (Ogborn 2012, 89). This is partly connected with power, as a fragile map will only survive for future generations if someone thinks ‘it is worth keeping and [has] the ability to keep it secure and legible’ (Ogborn 2012, 92).

⁴ The topic is addressed in an unpublished paper: Lien A.C. 2018. Discourse analysis and maps as a discursive tool. GEO901 Production and interpretation of qualitative data. University of Bergen, Norway.

These points turned out to be highly relevant to my research. In some cases, the literature described maps that were not to be found in any archive. This was particularly the case with a seventeenth-century map of central Scandinavia, produced by the Swedish cartographer Stenklyft and important for establishing the boundary line between Norway and Sweden. It would have strengthened my research if the map itself could be analysed and not just referred to in the literature. It was also a challenge because some of the archive material I was going to analyse was very fragile due to its age and normally not available for physical analysis. Nonetheless, I managed to obtain the necessary admissions through procedures well ahead of the visit, and the selected maps were made ready for me upon arrival. Some of the most interesting findings were digitised by the archive and sent to me after the visit, and some sources I photographed myself on site.

My intention was also to explore documents that could shed light on the process behind the construction of the maps. It was not unusual for many cartographers to supplement their maps with informative handbooks, often including notes on the cartographic process and background. However, reaching this aim turned out to be a challenge, as the connection between the maps and their background material was often missing. During fieldwork, I had to concentrate on the maps themselves and on the information I could obtain from the archive staff. The written sources were the basis for the analysis, but they were supplemented by informal conversations with relevant professionals. The selection of these informants was made by the 'snowball method', which, according to Valentine (2005, 117), is a chain reaction in which the first informant suggests another person with knowledge on the subject, and so on. As part of the preparations, I formulated questions covering the areas to be illuminated and set up meetings with the informants at the different sites visited. These very useful conversations led to a better map selection and contributed to the background information that formed the context for the map analysis.

4.4 Selection of maps

This section describes the process of choosing maps for the study. The aim is to take a more in-depth look into how the selection has been composed. The important terms are representativeness as well as a self-critical perspective on how weaknesses in the selection process may have affected the results. During the selection process it is also important to realize that the maps do not stand alone, they coexist with, for example, legislation. An example is the law on watercourse regulation between Norway and Sweden, where the borderline on the map did not prevent the locals from damming up the water on one side, fishing the river empty, or using the waterway to float timber (Lovdata 1929). These cross-border activities are regulated through laws, that consequently have a complementary function to the maps.

As a starting point for the selection of maps, I have used a number of different archives. I have visited the National Library of Norway and the National Archives of Norway, both situated in Oslo, and HM The Queen's Reference Library in Copenhagen, Denmark. The latter has many Norwegian maps from the time of the political union with Denmark until 1814. A great number of the examined maps have been accessed digitally, with the main source being the digital archives of the Norwegian Mapping Authority (*Kartverket*). Other maps were obtained from the University Library of Bergen and the Norwegian University of Science and Technology in Trondheim (*NTNU*).



Figure 12: The author at fieldwork at the National Archives of Norway

The maps represent the nations of Scandinavia and its neighbours and ensure a certain geographical variation. In addition to the digital versions of the archives I visited physically, I have explored the digital collections of the Royal Library of Sweden, the Swedish Land Survey, the Regional Library of Lapland in Finland, and the Russian Geographic Society. Other maps have been accessed digitally from cartographic collections at international universities, such as the University of Amsterdam in the Netherlands and Stanford University in the USA. Sources of further information include the Royal Library of The Hague in the Netherlands and William Ginsberg's extensive collection of historical Norwegian maps.

The complete list of archives used for my selection of maps are:

- National Library of Norway
- National Archives of Norway
- HM The Queen's Reference Library in Copenhagen, Denmark
- Norwegian Mapping Authority
- University Library of Bergen, Norway
- Norwegian University of Science and Technology in Trondheim
- Royal Library of Sweden
- Swedish Land Survey
- Regional Library of Lapland, Finland
- Russian Geographic Society
- University of Amsterdam, the Netherlands
- Stanford University, USA
- Royal Library of The Hague, the Netherlands

- William Ginsberg's collection of historical Norwegian maps

The selection of maps in this study is intended to cover a relatively broad range. The selected maps are mainly general maps at a European to regional scale, representing a wide range of cartographic perspectives on the political division of Scandinavia in the studied period. During this period, there was extensive technical development in cartography, which caused extraordinary diversity among the available maps.

In the first part of the selection process, the source material was roughly sorted. I selected maps that covered the geographical area in question, that were constructed during the studied period, and that (nearly all) were drawn by a Scandinavian cartographer. The latter was defined as a cartographer born in or mainly working within Scandinavia. Most of them signed their work, and if not, other sources contributed to reveal the originator. I excluded incomplete sketches, special maps that depicted a very limited area or phenomenon, or other maps that, for various reasons, were not informative enough to shed light on the research questions.

Next, I went more specifically into the maps and looked for relevant cartographic elements. In the process of writing the first article, I looked for maps with a prime meridian, and for the second article, I looked for maps from central Scandinavia with a well-marked national boundary between Norway and Sweden. For the third article, I searched for differently coloured maps of the Scandinavian Northlands, and for the fourth article, I looked for various nation-building cartographic elements such as titles, dedications, or symbols. From the original selection, there were relatively few maps that clearly included these elements, and the final selection was therefore narrowed down. In the following paragraphs I will review the map selections for each of the four articles and critically try to identify any deficiencies in the selection.

The first article, on the prime meridians, has an extensive selection of examined maps, with 101 analysed maps listed in the article's appendix. However, in the eighteenth and at the beginning of the nineteenth century, maps often lacked a coordinate system, and consequently, they did not display a prime meridian. In order to find more than 100 maps with a prime meridian, I had to examine at least three times as many maps. The

selection was relatively random, as I looked for maps in various archives, with time frame, geographical area, and a coordinate system as the only search criteria.

Most of the examined maps depicted Norway or parts of the country, and a number of them depicted Sweden or both countries on one map sheet. The large number of maps ensured a relatively good level of representativeness, but it would have strengthened the survey if I had managed to find more maps of Sweden, with a possible different prime meridian to the majority of the detected meridians in the study. The complete lack of maps with the union meridian, the use of which supposed to be mandatory by Swedish royal decree, is the most important deficiency and could perhaps have been rectified by more intensive searches in Swedish archives. Regarding time frame, the selection extends to the mid-twentieth century, as part of the purpose of the article was to follow the development of the use of prime meridians on Norwegian maps until the dominance of the international meridian of Greenwich, which came fairly late.

The second article, on the borders in central Scandinavia, also presents a relatively wide selection, with 47 analysed maps. As with the first article, it was necessary to examine a much larger number of maps to identify a sufficient group of maps with a clear boundary line in the relevant area. This was mainly because it was quite common not to include borders on maps during that period, which may indicate that borders had low importance. The large number of maps examined was also partly due to the relatively poor quality of the cartography of the time. The maps in this article are, in general, older than the selected maps in the other articles, as the article includes thirteen maps from the seventeenth century. The reason for this is that the border treaty between Norway and Sweden was signed in 1751, and maps from the preceding century were important for the negotiations leading to the treaty and consequently also for the selection of maps for my article. A disadvantage of this was the challenge of finding an adequate number of accurate maps in order for the selection to be sufficiently representative for the studied area and period.

Regarding the third article, on the colouring of sovereignty in Nordkalotten, the empirical data base was very different from the previous two. The starting point was a

selection of only seven maps, but they were consciously chosen to represent each of the northern nations, including one Danish–Norwegian map, one Swedish map, and one Russian map. Three of the other maps in the selection were compiled by Dutch cartographers, as the first part of the study period was characterised by Dutch dominance within European cartography. The last of the selected maps was constructed by an American, and it was included as it represented the period after the political boundaries in Nordkalotten had officially been settled by treaties.

To answer this article's research question, it was important to find as many coloured editions as possible of the above-mentioned seven black-and-white originals. For some of the originals, I found only a few coloured copies. For others, a very large number of coloured copies were available, of which I included up to six in the final selection. It was, however, a challenge because it is not possible to trace how many copies in total were made of each map, and an even more extensive search could perhaps have uncovered further coloured variants. This is a selection deficiency that may have affected the results, as other coloured copies may have represented affiliation in the region in a conflicting way compared with what I found during the process. However, I had to base the analysis on the available empirical material, and the chosen maps for the analysis were considered sufficient for the purpose.

The fourth article has a quite limited selection of maps, as the aim of the article was to examine a relatively small number of maps more thoroughly. Some of them were presented in William Ginsberg's cartobibliography (Ginsberg 2009), and others were accessed from the National Library of Norway and the Norwegian Mapping Authority. The final selection for this article included five Norwegian and four Swedish maps. Nonetheless, a certain level of variety regarding scale, year of construction, the cartographer, and other features was secured. However, this is probably one of the four articles where the relatively narrow selection might have influenced the result. The risk of drawing wrong conclusions can thus only be countered by a thorough awareness of the disadvantages of small selections.

4.5 Map analysis

As mentioned in the previous section, the selection of the maps to be analysed was a thorough process, resulting in a group of maps that represented a cross-section of Norwegian cartography in the period under study. The purpose of the analysis was to examine the selected maps in relation to the research question and to be able to draw some conclusions on the expression of sovereignty through cartography in Norway in the eighteenth and nineteenth centuries. This section will describe the method, justify its choice, and elaborate on the methodological considerations.

Each of the maps was studied in detail in order to obtain all the necessary information. Regarding the physical maps, I ensured I was allowed sufficient time in the archive, and I used a magnifying glass when necessary. Some details had to be clarified and discussed with the archive professionals. Regarding the digitised maps, most of them were continuously accessible from online archives. Other were sent to me via systems with a time frame, meaning that I had to download them before the time limit was up. In both cases, it was a huge advantage to be able to study the maps as often and as long as I wanted. The zooming function enabled me to examine the maps in an extremely high-level detail as long as the map was digitised with sufficiently high resolution. This greatly eased the process of detecting the interesting features of the maps, and is an important methodological point, demonstrating the potential of digitisation. For each map, systematic notes were made on the relevant cartographic elements, in addition to details about the map and the cartographer. The result was a comprehensive table for each of the four articles, which, together with the maps themselves, formed the basis for further analysis.

In the case of the first article, the first step in the analysis included identifying prime meridians on the various maps. The data material was comprehensive, with over 100 selected maps, and the resulting table was accordingly extensive. As mentioned in Section 4.1, analysis of qualitative data involves considerable interpretation. Consequently, a thorough assessment of the dataset was carried out. Among other things, I considered the combination of the cartographer's nationality and their use of

the prime meridian in order to find possible connections that could be explained by political assertiveness.

In this process, it was a challenge that a number of maps included two or more prime meridians. This was often a combination of a standard international meridian, such as Ferro, and a more controversial national meridian, such as Christiania. Even on maps with only one prime meridian, it was difficult to interpret whether the use of a national meridian was a deliberate decision to demonstrate independence or an unconscious choice. In some cases, however, other cartographic elements supported the argument for the deliberate use of the prime meridian. During the analysis, it was therefore important to see the map as a whole and not only focus on one selected cartographic element. To increase the reliability of my results, I reviewed 33 textbooks on geographical information to trace the contemporary development of the term 'prime meridian' in society. This complemented my interpretation of this element on the selected maps.

Regarding the second article, on the Norwegian–Swedish boundary in central Scandinavia, a methodological challenge arose due to the inaccuracy of the contemporary cartography, in which maps often had distorted proportions. I may have misinterpreted the cartographic information during the process of detecting boundary lines and noting the details in the table, as it often turned out to be difficult to relate the geographical position of the border drawn on the map to the current cartography. This was made even more difficult by the fact that during the period under study, it was relatively common to orient the maps east-west instead of north-south or even in a diagonal direction. Together with a lack of height curves and the ancient spelling of place names, or even missing place names, this sometimes made it complicated to orient oneself while looking at the map. However, I was very aware of this challenge, and I spent a lot of time on correct positioning to avoid imprecise data. An extension of the analysis to also include digital methods such as for example GIS (Geographic information system) could probably have contributed to the process, as this can be an efficient tool to evaluate digitised historical maps (Svenningsen 2015, 35).



Figure 13: Extract of J.C. Spidberg's 1714 map of the borderline between Norway and Sweden in central Scandinavia. The map is oriented with east (Sweden) upwards and north to the left. Notice the disputed borderline through Lake Femunden (Norwegian Mapping Authority/Kartverket)

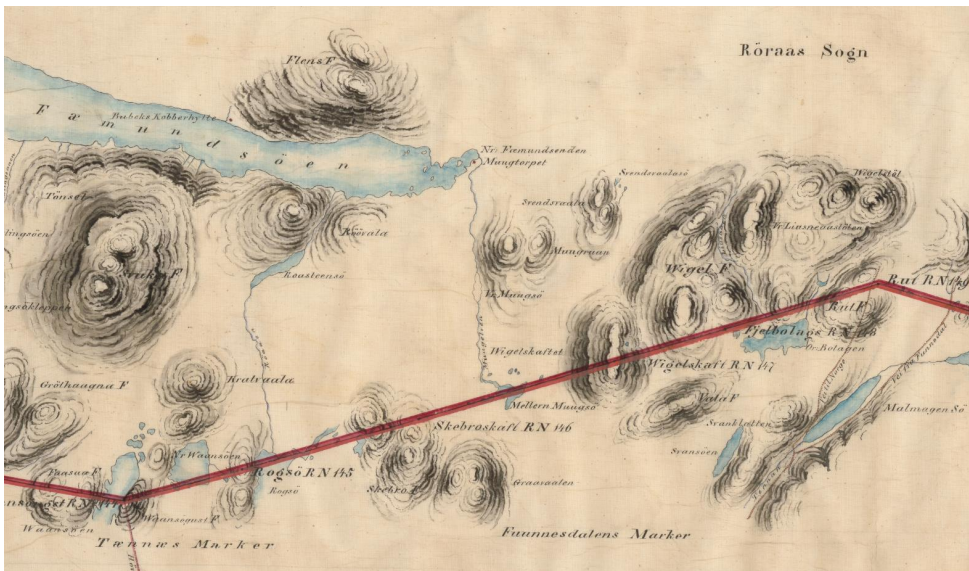


Figure 14: Extract of Swedish map, c. 1814, depicting the borderline with Norway in the Femunden area. The map is oriented with west (Norway) upwards and south to the left, opposite of the Norwegian map in Figure 11. Notice the correct position of the borderline according to the 1751 Border Treaty. Unknown cartographer (Sverige Topografiske Kartor, The Military Archives/The Swedish National Archives).

The aim of the third article was to examine how different nations' divergent colouring of maps of the Scandinavian Northlands reflected varied perspectives on sovereignty in the region. In the analysis, I investigated how this area was coloured in various ways on the different versions of the same original black-and-white map. All the maps were coloured by hand, and the use of colours indicated the extent of each nation's territory in this Arctic area. On some maps, for instance, Sweden was depicted as covering a vast area as far north as the Barents Sea, while other maps demonstrated through colouring that Norway was apparently in possession of the entire Kola Peninsula. Political affiliation in the region was consequently depicted very differently on the various coloured copies of the same map. As part of the analysis, I investigated whether there was a certain colour scheme adopted by all the colourists. It seemed, however, that there was no consistent system in the use of different colours depicting certain nations.

Another challenge was that there was little or no information about the people colouring the maps, their patrons, or their nationality. Hence, it is difficult to know for sure whether various coloured depictions of affiliation in Nordkalotten were used deliberately with a political agenda. My interpretation of the different coloured versions has nevertheless been justified in this article as far as possible.

In the fourth article, there were several cartographic elements to analyse, and therefore the maps were thoroughly examined from different perspectives. First, the relevant cartographic elements with nation-building potential were identified. They were systematised together with an overview of related aspects from the literature. For each map, the map title, dedication, and decoration were reviewed in order to determine whether the cartographer connected the map to a certain sovereign or nation. Secondly, the map was examined to find out if there was an established boundary line, and if so, whether this was clearly marked as a division line between Norway and Sweden or more subtly depicted. Any colouring of the map could also have the same separating or unifying function, which was investigated. Likewise, the map's prime meridian, if any, was identified and analysed in relation to its significance as a possible political tool.

The knowledge acquired from the first three articles was useful in the above-mentioned process. Furthermore, the toponyms on the map were meticulously examined. Most of the maps included the Danish-influenced spelling, but a number of them displayed place names in their original Norse form. Finally, other cartographic elements, such as map symbols, were explored. In addition, in this article, I had a special focus on maps intended for educational purposes, as their distribution and consequently their impact are substantial.

A possible source of error is the small number of maps examined for this article. Another challenge could be the selection of the cartographic elements examined, as there might be other elements with significance for national self-esteem, such as map projection. This element is described by, among others, Axelsen & Jones (1987, 450-452). However, to a large extent it was not possible to identify the projection in many of the selected maps.

With regard to the empirical analysis as a whole, historical maps are certainly an important source, but it is vital to interpret them from the perspective of their contemporaries (Harris 1991). This contextual dimension is crucial to cartographic analysis. The cartographic communication process is, therefore, complicated by the fact that the maps reflect the values of their period. Awareness of this is a highly significant part of map analyses. In his 1985 article on data sources and values, Michael Jones points out the importance of investigating the values that are embedded in the historical sources, including considerations of the reliability of their author(-s). A Eurocentric world view is mentioned as an example of values with impact on the cartographic depiction of reality (Jones 1985, 66-69).

It is common to take the meaning of objects for granted, but changes in context can change the meaning of objects. Consequently, the context of the maps has to be considered. With this in mind, I have used available literature on cartography, history, political geography, and other relevant subjects to inform the map analysis. Theory is used to understand the empirical evidence and explain the results, thereby shedding light on the research questions, in line with the hermeneutical perspective. It is

undoubtedly challenging that the period studied is so far back in time, and background material on the maps may have been lost. In addition, much of the literature about the period in question was written several centuries after the events took place. It is therefore a methodological weakness that it is not possible to trust completely the correctness of all the information referred to in the thesis. In many cases, however, information in the literature complements empirical findings, increasing their credibility. One example is the colouring of maps in the Nordkalotten region: the results mainly correspond with the political agenda of the different rulers in the region at that time, as described in the literature.

During the map analysis process, source criticism was an important methodological aspect. According to the Danish historian Kristian Erslev's (1852-1930) functional source concept, the sources will have different value depending on how they are used. A source is used as a relic if one seeks information about who made it and in what context, while the source becomes a narrative when one examines the content and meaning behind it. In the analysis of maps, both perspectives are important for a thorough understanding, but the reliability of a narrative source depends on how the depiction of the past has been influenced by the observer's individuality (Edelberg & Simonsen 2015, 218-219). Peter Andreas Munch is an example of a Norwegian cartographer and historian focusing on the importance of source criticism. He based much of his work on narrative sources such as the Norwegian sagas (Hatlen 2020).

In the process of evaluating the selected maps, the very nature of historical sources such as old maps was to be subject to a certain scepticism in which the authenticity of the map was considered. As mentioned in the theory section, a map is an intersubjective interpretation of the world at the moment of its construction (Harris 1991). What is included in the map, and not least what the cartographer has chosen to omit, should be considered in our interpretation (van Mingroot & van Ermen 1988, 30). It is also important to reflect on the origin of the map. The process of transferring the world to a map entails both conscious and unconscious choices, which means that the resulting map, besides not necessarily being a neutral depiction of reality, may even have been 'manipulated to exercise power' (Bartram 2012, 133).

4.6 Processing and presentation of data

Selected details from the analysed maps have been presented in tables, published as part of the four articles. They provide an overview of the maps' attributes such as geographical area covered, year of construction, scale, cartographer, nationality of the cartographer, and other interesting aspects of the individual maps. The systematic overview of the analysed material served as a useful basis for the interpretation of the results.

Maps are also a very visual depiction of the world, and relevant maps and extracts with important details are hence presented in the articles as figures. The intention is to facilitate the readers' understanding of the findings related to the research questions.

4.7 Reliability, validity and bias

LeCompte and Goetz (1982, 55) claim that 'to attain absolute validity and reliability is an impossible goal for any research model'. Nevertheless, it is vital to consider how deficiencies in the data material may have influenced the results. The quality of the research process must be assessed through questioning important aspects such as the transparency of the research and whether the data are suitable for illuminating the research theme (Gripsrud & Olsson 2002). A reliable research process implies that the review can be verified by other researchers, which means that they can apply the same conceptual structure to the analysis and reach the same results (Elster 1979). As LeCompte and Goetz (1982, 32) argue, validity 'is concerned with the accuracy of scientific findings'. It concerns whether the researcher has investigated what was intended and to what extent the results are credible, both for the selection examined and for comparable situations or selections. In addition, the role of the researcher should be considered from the perspective of bias to ensure that personal perceptions do not influence the implementation and results.

My project is to a large degree based on interpretation and assessment. I have, however, been very transparent about the research process, regarding both how the data have been selected and analysed and the information about the context within which the

maps are interpreted. It should be possible for other researchers to repeat the process in a similar way and reach the same conclusions. To ensure the reliability of the selected sources, I have obtained maps from recognized institutions. Where I have used digital maps, the origin of the maps is known, as the digitised versions are grounded in physical copies in an acknowledged archive. However, we do not know for sure whether any cartographic elements may have been changed or added after the initial maps were made. Especially when it comes to colouring, there is little knowledge about who financed the work, who carried it out, and when it was done. This is difficult to solve, and I had to rely on the historical context to be able to form a reasonably well-founded assumption about the potential motive behind the colouring. Hence, it was all the more important to be open about the challenge so that the thesis could be read with the necessary level of scepticism. In total, I consider my research to have as high reliability as possible within the approach.

Regarding validity, the problem with historical sources is that important material may no longer be available. It is also difficult to determine exactly which maps could be available where, and therefore there might exist valuable data that are not included in my research. This is also a matter of capacity and of what can be achieved within the framework of the thesis, but it is always useful to have an even better data base to increase the survey's validity. More background material linked to the maps themselves would also have been an advantage to ensure valid results. However, to strengthen the validity, I have used triangulation, as mentioned in Section 4.1. The combination of different methods, a variety of sources, maps from different periods and cartographers, and an emphasis on the context of the data material has entailed a substantial improvement in the research's validity.

There is an important reflection about bias, that is, whether I unconsciously searched for what I expected to find. According to Ryen (2002), bias can affect both the selection of data and the analysis process. This vulnerability has been explored by Monmonier (1996), who claims that readers are liable to draw conclusions based on their own interests and each individual's perception of the map. Similarly, there is a potential for overlooking data that does not comply with a possibly prejudiced conclusion (Ryen

2002). However, many of the findings in this project were unexpected, and I consider my work to be within the framework of unbiased research. I have reflected further on this in section 6.5.

4.8 Other reflections on the research

The Norwegian National Research Ethics Committee regularly publishes revised guidelines for research ethics in the social sciences and the humanities. These guidelines are one of several sources for reflection on the important ethical questions to be continuously considered during any research process. The guidelines mention challenges such as research under pressure and the need for independent and verifiable research carried out in a responsible manner by reliable and critical researchers (NESH 2021).

According to Hay (2012, 35), ethical research is about acting ‘in accordance with notions of right and wrong’. Ethical behaviour ensures a good climate for further scientific research and cooperation, and everyone depends on their colleagues having integrity in their work. In addition, there is an increasing public demand for accountability and a greater emphasis on ethical behaviour. Some common ethical dilemmas in geographical research are the consent of participants; the confidentiality of the information they provide; the safe storage of data; ethical behaviour during field work; and consequences of field work, such as pollution.

Cartographic research is quite a specialised field compared to other geographical fieldwork, and most of the ethical dilemmas mentioned above do not apply to my project. There are nevertheless certain points to reflect upon regarding my research. One of them concerns my formal position and its implications. In the social sciences, positionality and reflexivity have been much in focus, with its relations to institutional belonging and cultural context. Reflexivity is defined by Gray (2004, 404) as ‘the monitoring by a researcher of her or his impact on the research situation being investigated’. Finlay (2002, 209) adds that the different approaches to reflexivity have their strength and weaknesses. She also underlines that the concept can be understood

as ‘examining one’s own personal, possibly unconscious, reactions’ and that the idea is to explore how the researcher’s ‘position, perspective and presence’ would influence the research (Finlay 2002, 224-225). This is thus an issue that I have considered through a critical self-reflexive methodology. As a Norwegian citizen, as a geographer, and as an employee of the Norwegian Mapping Authority, my acquisition of knowledge and my interpretation of the empirical findings may be influenced by this position. The topic in my research project could have a different interpretive outcome if, for example, the analysis was carried out by a Swedish researcher with background as a historian or as a military officer. This reflexivity is based on a recognition that knowledge is not absolute but can be interpreted in different ways depending on the context, both in terms of the origin of the material, and the researcher who interprets it.

Another point to reflect upon is the question of independence, and whether there are connections or obligations in relation to the implementation of the research project. According to Gray (2004, 259), sponsors or funders should not set unacceptable conditions or have an influence on the project that goes beyond the researcher’s ethical responsibility. I am an autonomous and self-financed candidate, and therefore I have no commitment to anyone, financial or otherwise. This ensures independence in my research.

5. Synopsis of the published articles

The main purpose of this thesis has been to examine to what extent and how cartographic elements may have been used as political instruments to achieve sovereignty. The research process has proceeded systematically through four scientific articles, each of which focuses on one cartographic element with potential influence and explores a range of such elements in each of the examined maps. In the following section, a brief summary of each article provides an overview of its main points.

5.1 From Fortress Flagpole to the Greenwich Line: The Establishment of a Common Prime Meridian in Norway in the Period 1770–1970

This article focuses on the nation-building role of prime meridians. A wide range of Norwegian maps from the period 1770–1970 are analysed to document the progression from a time of multiple local prime meridians and throughout a period of two different political unions. The article investigates the use of international and Scandinavian prime meridians in parallel with the emergence of a dominant national Norwegian prime meridian. The development is followed through to the decades after Norwegian political independence in 1905 and the establishment of the Greenwich longitudinal line as the prime meridian on Norwegian maps. Such a thorough examination has not been done before, and it contributes to a greater understanding of the development of this central element in Norwegian cartography.

In addition to documenting this vast range of prime meridians, the article aims to examine whether prime meridians on Norwegian maps were used as political tools during the union period between Norway and Sweden (1814–1905), as part of resolving the main research question of the thesis. In that time of upheaval, the struggle around the union's cartography turned into a symbol of Sweden's geopolitical ambitions for a united Scandinavia (without Denmark), as well as a tool for Norway's resistance to the repeated Swedish royal decrees on homogeneity within cartographic issues (Ottoson

2001). The controversy over which prime meridian to use on Norwegian maps was an important part of the struggle.

The findings indicate that Norway opposed the orders to use Swedish meridians and controlled its own narrative through its national cartography (Widmalm 1990). Evidently, Norway used national prime meridians as symbols of independence, especially the new prime meridian of the Norwegian capital, Christiania (Pettersen 2014). The Christiania meridian was first used alongside international prime meridians such as Ferro and Paris, but it became dominant on Norwegian maps in the second half of the nineteenth century. Swedish meridians were used only on Swedish maps, while the common union meridian, imposed by Sweden, was not found on any of the examined maps, neither the Norwegian nor the Swedish. This could be seen as an affirmation of Norwegian national consciousness manifested in maps as well as an indication of the political power of the prime meridian, which is a substantial contribution to the thesis's main research question.

5.2 Lines of Power: The Eighteenth-Century Struggle over the Norwegian–Swedish Border in Central Scandinavia

This article was written together with Professor Emeritus Anders Lundberg at the University of Bergen, Norway. As a continuation of the path towards solving the central research question of the thesis, this article follows up on the previous article and delves into the use of another important cartographic element, namely the establishment of boundary lines and their impact on the formation of nations in general. The article's point of departure is the eighteenth-century development with increased delimitation, dozens of boundary agreements in Europe, and maps used to justify territorial claims. In parallel, the positioning process of the boundary between the central parts of Norway and Sweden is examined. This long-standing boundary line was much disputed until the Border Treaty of 1751 was accomplished (Gustafsson 2017). Through the analysis of a large selection of historical maps, the article explores the motives behind the border region's shifting affiliation. This includes different

sovereigns' struggles for hegemony over the area in question as well as conflicts over its valuable timber resources.

The results of this article demonstrate the important role of cartography in the final determination of the central parts of the Norwegian–Swedish border. This is new scholarly knowledge that, for this region, has not been unveiled until now. In the turbulent political situation in which the border negotiations took place, maps documenting an easterly historical boundary line secured a vast and valuable region for Norway, as a direct affirmation of this thesis's theme on sovereignty through cartography. Even if the boundary process was challenging, the cartographic documentation for the final line proved resilient through the centuries, and the border between Norway and Sweden has remained unchanged until today.

5.3 Colouring Sovereignty: How Colour Helped Depict Territorial Claims to the Arctic in Northern Europe on Sixteenth- to Nineteenth-Century Maps

This article is in press in the book *Maps and Colours: A Complex Relationship*. The book title indicates that the cartographic element of colouring can raise multiple problematic questions. My investigation of this element emphasises the connection between colouring as a cartographic element and authority over territory, thus contributing to the thesis's main focus on cartography as an instrument for sovereignty.

Until the mid-nineteenth century, most maps were coloured by hand. This meant that various copies of the printed black-and-white original could be differently coloured, frequently on the order of a patron. This often included the establishment of a boundary line and the depiction of territorial units (Ehrensward 2006, 68). Consequently, the various copies could leave different impressions of the depicted area through, for instance, presenting divergent political affiliations (Woodward 2007, 603). Colour is thus a cartographic tool with a high potential impact, helping sovereigns to obtain a desired world view (Monmonier 1996, 170; Delano-Smith 2007, 555).

In this study, maps from Nordkalotten, the Scandinavian–Russian Arctic frontier region, were examined from a period during which this vast region had ambiguous boundaries and shifting affiliations. The aim was to examine how the cartographic depiction affected territorial claims and perceptions of possession in the region, with a focus on the Norwegian part. Furthermore, the use of colouring as a cartographic tool was explored to detect how this may have helped promote the interests of the different nations.

The results demonstrate that sovereignty in the far north was gradually established over centuries, with maps as one of several tools for territorial claims and for exerting control. The powerful cartographic element of colouring contributed to perceptions of political affiliation and was part of the strategy to gain dominion. The map analysis reveals that on maps from the sixteenth to as late as the mid-nineteenth century, the north-eastern part of Norway was alternately coloured as being under Finnish, Swedish, or Russian sovereignty, in addition to being depicted as part of Norway. These maps may have had political effects. There is limited information on the use of map colouring in the literature on historical cartography (Ehrensvärd 1987). This article contributes to new empirical knowledge and presents how the use of colour on historical maps contributed to the determination of sovereignty in the Arctic parts of the Nordic countries, including Norway.

5.4 Waving the Map for National Identity: How Cartography in Norway and Sweden Was Used as a Nation-Building Tool in the Eighteenth and Nineteenth Centuries.

The main focus of this article is to investigate the impact of various cartographic elements such as map titles, dedications, toponyms, and map symbols, in addition to connecting to the three previous papers on prime meridians, boundaries, and colouring. The ideas of national romanticism throughout Europe in relation to the national state are part of the backdrop for the study (Falnes 1933, 50-51). In line with the thesis' main theme, this article considers the role of cartography in the emerging Norwegian national identity at the turn of and into the nineteenth century.

Through analysis of Scandinavian maps, the aim of this article has been to identify whether and how cartographic elements had an impact on Norwegian nationalism on the one side and/or Swedish hegemony over the Scandinavian peninsula on the other side. The results indicate that the selected Swedish cartographers depicted Norway and Sweden, to a certain degree, as an entity through the use of different cartographic elements. Among them were the use of a faint boundary line, and the use of 'Scandinavia' in the map title, emphasising the connection between the map and the Swedish union king. On the other hand, Norwegian cartographers supported their national identity through elements such as a national prime meridian, colouring underlining the national boundary line, or toponyms with Norwegian spelling. Symbols indicating industries, infrastructure, or military facilities were also applied as a possible statement of financial independence and defence capability.

My findings show that cartography contributed to one narrative about the political union in Sweden and another in Norway. The results also indicate that maps for educational purposes reinforced the influence of cartography (Taylor 1994b). The article's empirical evidence from the Scandinavian region regarding the relationship between nationalism and cartography extends the conclusions of the existing literature on the topic. In addition, this article provides new knowledge that the picture in Scandinavia is documented to have been more balanced than previously thought. Some of the examined maps followed tradition, with international prime meridian and Danish-influenced toponyms, rather than being used as a nation-building tool, although the picture is mixed.

6. Discussion

In this chapter, I discuss the main findings of the thesis in the light of existing research literature and evaluate my results to consider whether there is consistency with the theory review in Chapter 2. The individual research questions from the four articles are presented in italics and discussed in sequence, but a vital part of this thesis is that the research questions and conclusions presented in the separate works are examined in relation to one another to document the integrated nature of the work and how each part contributes to answering the main research question. In this chapter, I also address a few methodological challenges. The discussion chapter ends in conclusions that are rooted in this specific project. A section at the end provides suggestions for further research.

6.1 Article 1: Prime meridians

To contribute to answering the main research question, my first article focused on the cartographic element of the prime meridian. The selection of maps for this article was extensive, and the triangulation methods of map examination, textbook review, and theory exploration provided a reliable basis for the conclusions. The first research question was as follows:

How did the use of prime meridians in Norwegian maps develop from 1770 to 1970?

An examination of more than 100 selected maps revealed that the cartographic development in Norway was partly in accordance with what is described in existing literature. The international diversity of prime meridians mentioned by Withers (2017) was also reflected in maps constructed by Norwegian and Swedish cartographers, as the map analysis demonstrated the use of as many as ten different prime meridians. Among them, the prime meridian of Ferro was used extensively on Scandinavian maps until the end of the nineteenth century. This accords with Kennedy and Regier's (1985) and Vilicic and Lapaine's (2018) descriptions of this dominant line, which was frequently used since it passed the westernmost point of Europe and consequently ensured that maps of Europe did not have negative degrees of longitude.

On the other hand, other empirical results differed from what was expected based on theory. While many countries had already adopted the global meridian of Greenwich by the turn of the twentieth century, as mentioned by Higgitt and Dolan (2009), the findings revealed that, for further decades, Norway held on to its important national prime meridian through the capital Christiania (Oslo). This meridian was predominant in Norwegian maps from the mid-nineteenth century and to the mid-twentieth century, and I even found it on a few maps before it was officially established.

Another deviating result was that the Norwegian national prime meridian of Kongsvinger, described by Ekman (2011) among others, was only found in two of the examined maps, both produced before the establishment of the much more popular national prime meridian of Christiania. The map selection did not display any of the other Norwegian prime meridians described in the literature, such as Trondheim, nor was the disputed Swedish union meridian found, in spite of its injunction by Swedish decree. This leads us to the next research question:

To what extent was Norwegian cartography under the influence of Swedish authorities in the early decades of the political union between Norway and Sweden, from 1814 onward?

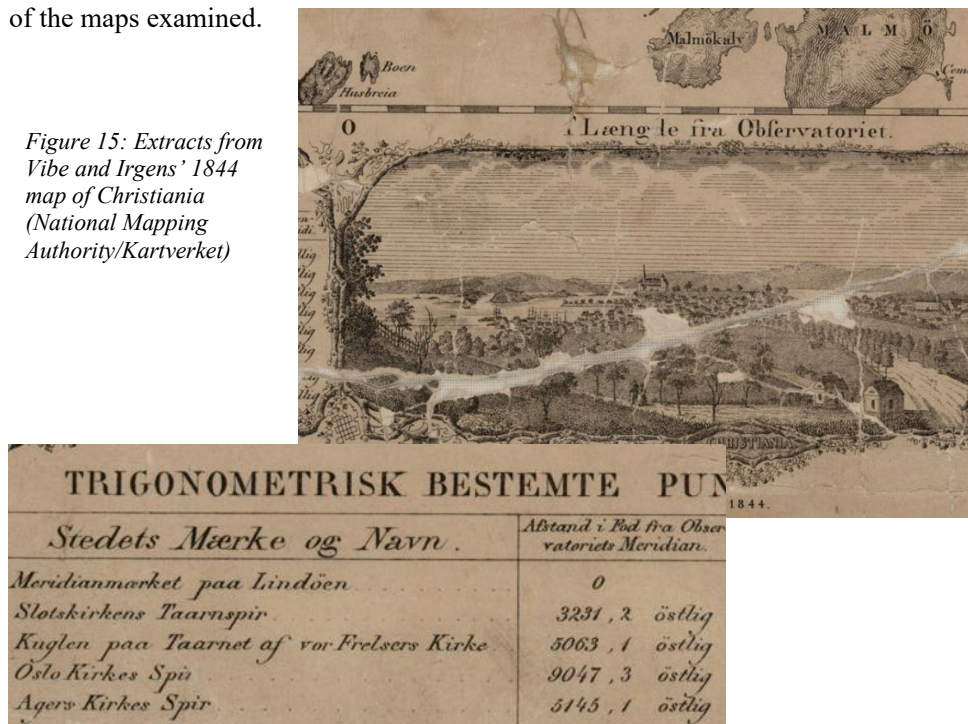
The literature states clearly that the Swedish authorities to a large degree tried to intervene in Norwegian cartography. This included personal involvement from the union Crown Prince Carl Johan (King from 1818), as mentioned by Berg (2017). A Norwegian attempt to survey Norway was blocked, and the establishment of the new national prime meridian through the capital was not accepted. However, Harsson and Aanrud (2016, 178-179) claim that the Swedish instructions were never adhered to. This corresponds with the empirical results, in which there is no trace of the Swedish intervention. The union meridian may exist on maps, but not on any of the several hundred maps (most of them Norwegian) examined in this study. This indicates that it was resisted by influential groups in Norway, in line with Black's (1997, 19) description of the 'silences' in maps.

After having built an argument via a description of the development of the prime meridian and an outline of the cartographic relationship between Norway and Sweden, the last research question of this article is directly connected with the main question of the thesis and reads as follows:

What traces, if any, can be found in Norwegian maps in the years 1770-1970 that indicate that different actors in Norway used cartography as an instrument of power to demonstrate the will for independence?

According to Pettersen (2014), the prime meridian of Christiania was very controversial from the Swedish perspective, due to its symbolic power with regard to national identity. This statement from the literature was confirmed by one of the examined maps (Vibe and Irgens' 1844 map), which not only displayed this prime meridian before its official establishment in 1847, but also focused on its origin through the new Observatory and on its 'father', Professor Hansteen (1784-1873). In addition, the main empirical findings document that the Swedish decrees on a common union cartography were disobeyed by Norway, as the union meridian was not found on any of the maps examined.

Figure 15: Extracts from Vibe and Irgens' 1844 map of Christiania (National Mapping Authority/Kartverket)



The theory section included an example by Losang (2018), explaining how the Philippines succeeded in producing their own national atlas in 1899, thus creating a national cartographic discourse, in the short transition between Spanish rule and a new period under American control. Ormeling (2015, 96) described a Nordic example, with Finland's national atlas, also from 1899, manifesting national Finnish identity under Russian rule. This can be compared to how Norwegians mapped Norway, after the resolution of the union with Denmark and after having been forced into a new union with Sweden. During the transition period and the first formative years of the new union, many Norwegian maps were constructed based on Norwegian cartographic standards. In light of the royal Swedish orders on a common union cartography, this can be seen as an expression of a demonstrative will for independence, verified by the total lack of Swedish meridians and the mandatory union meridian on the examined maps. This use of cartography as a political instrument coincides with similar uses of prime meridians to support national identity in countries such as France, Great Britain, and the United States, as mentioned by Howse (1980). The unveiling of the use of Norwegian prime meridians is thus a substantial contribution to the thesis' main point of issue.

6.2 Article 2: Boundaries

Sovereignty is a central aspect of the main research question, and national border lines are essential cartographic elements for defining and delimiting the territory of supreme authority. This process also includes the role of resource allocation in the disputed area. The theme of this article is thus an important part of the integrated thesis. The method used in this article was a combination of a literature review and a detailed examination of a wide range of maps. As with article one, the first research question in article two was about outlining a thorough review of the available cartographic material:

What was the cartographic depiction of the borders in the Femunden region in central Scandinavia before and after the 1751 Norwegian–Swedish Border Treaty?

To be able to document the perception of affiliation in this central Scandinavian region, I investigated a considerable number of maps. Around a quarter were from the seventeenth century, with its implications such as inaccurate cartography, but I nonetheless succeeded in identifying and locating their borderlines. Nordman (2020) has described how the concept of defined borders became increasingly common during the seventeenth and eighteenth centuries, and this trend was very clear in my selection of maps. It should also be mentioned that most of the Norwegian maps from the seventeenth century that I examined had poor cartographic quality, and Sweden seems to have been further ahead in its development of mapping during that period. After the 1751 Border Treaty and continuing into the nineteenth century, cartographic quality improved substantially, and eventually, all the examined maps had a clear borderline.

In the period before the Treaty, there was inconsistency between Norway and Sweden regarding the cartographic depiction of the border area in central Scandinavia. This can probably partly be explained by the historical context. The preceding century had seen large regions changing affiliation back and forth between Denmark-Norway and Sweden, affecting the local communities in the border region with shifting nationality. The frequent adjustments in the political realities may not have been reflected in the inhabitants' imagined border, as explained by Katajala and Lähteenmäki (2012, 8), adding to the lack of consensus in the region's cartography. The examined maps can mainly be grouped into two groups, one including maps with a borderline through Lake Femunden, and the other including maps with a more easterly borderline, leaving larger areas on the Norwegian side. Almost all the maps with a westerly borderline (through the lake) were produced by Swedish or non-Scandinavian cartographers. As the Border Treaty of 1751 established the official borderline well to the east of the lake, most of the post-1751 maps that I examined displayed borderlines in accordance with the Treaty. This phenomenon is supported by Berg (2009), who claims that cartography played a major role in the solidification of the new national border. However, several maps from this study continued to depict the westerly line in favour of Sweden, and with one exception, none of them were Norwegian.

Having established a cartographic backdrop for the area in question, I moved on to explore the process behind the final positioning of the Norwegian-Swedish border:

How did the boundary-establishing process proceed, and what role did valuable resources in the area play?

The process behind the 1751 Border Treaty was very challenging, with the aforementioned historical turmoil as a backdrop. The border negotiations were also complicated by power struggles on several levels, including the main Norwegian negotiator having personal financial interests in the forest resources of the disputed area east of Lake Femunden (Dahle 1894; Storø 2009). The importance of these resources complements Newman's (2011) suggestion that the positioning of a borderline can be controversial due to its function as a resource allocator. Nielsen (1874) adds to this by asserting that this was also the case in Scandinavia, as the border process was to a considerable degree influenced by the resources in the area. In addition, Katajala (2011) mentions valuable resources as being important for border positioning. This corresponds with one of the main findings of this article, namely the important role of these large forest areas east of Lake Femunden.



Figure 16: Official border map from 1759 of parts of the national borderline between Norway and Sweden. The orientation of the map is west (Norway) upwards and north to the right. The borderline is correctly represented according to the 1751 Border Treaty, with the valuable forests east of Lake Femunden on the Norwegian side of the borderline (J.N. Holm, HM The Queen's Reference Library, Copenhagen)

Was cartography used by Norway and Sweden to pursue territorial claims in the border-establishing process, and if so, how?

Cartography played an important role in the border negotiations. Some of the Swedish maps depicting a westerly borderline (through the lake) might have been influenced by, as Katajala (2011) describes it, boundaries depicting ambitions rather than reality. Moreover, Briså (2014) confirms that ambiguous boundaries leave an expansion margin for expanding rulers, and it could be argued that each of the two countries deliberately established their cartographic boundary where they wanted it to be in the terrain. This accords with Barber and Harper's (2010) notions that boundaries have been used as political instruments through the centuries. Furthermore, Branch (2013) contends that cartography is an important tool to indicate the relationship between political power and geographical space. The demarcation of a boundary line takes place simultaneously in the terrain and on the maps, and there is an interaction between these two that goes beyond the empirical evidence.

With these results from the map analysis, a link has been established between the final positioning of the borderline between Norway and Sweden and Norway's striving for sovereignty over large and valuable areas of central Scandinavia. The article uses historical maps as evidence for territorial claims before the 1751 Treaty and as an instrument to consolidate the border in the decades after.

6.3 Article 3: Colouring

In the period preceding permanent borders, different hand-coloured copies of black-and-white printed maps could represent political affiliation in various ways. Colouring of maps was thus an important cartographic tool to explore, with its implications for perception of possession and representation of sovereignty. This was expressed by the first research question of the third article as follows:

Did the cartographic depiction of Nordkalotten between the sixteenth and nineteenth centuries affect territorial claims and perceptions of possession in the region, and if so, how?

During the selection process and the subsequent map analysis, a great variation of the colouring of maps in this region was revealed. Most of them were quite distinct in their colouring, in line with Monmonier's (1996, 170) thoughts on cartographic colouring identifying political units. The variation can be exemplified by Ortelius' 1570 map of Scandinavia, of which I analysed eight coloured copies. They were quite contrasting, and the extent of for instance Sweden was depicted in highly different ways, from stretching all the way northeast to the Kola Peninsula, or northwest to the Lofoten islands, both giving Sweden access to the sea in the north; to maps depicting Norway and Russia as connected in the north, leaving Sweden farther south. The many different coloured copies found in this study correspond with Ehrensvärd's (1982, 38) description of how different editions of one map were hand-coloured in various ways to please different requests from the clients. Another relevant point is that the distribution of the many coloured copies ensured a much larger influence than the single black-and-white original would have had. The results document clearly that the cartographic depiction of Nordkalotten, represented through different coloured versions of maps, affected perceptions of possessions in the region. Regarding documentation for different sovereigns' territorial claims, it is more complicated, as we do not have sufficient information on the colourists, their patrons, and their motives. Still, the next research question tries to establish a connection between colouring and territorial claims, as follows:

How might the use of colouring as a cartographic tool have helped promote the interests of different nations in Nordkalotten?

Even if the coloured copies of maps from Nordkalotten region stand alone without their background information, it is possible to interpret them in light of the historical context and information from the literature. For example, we know from theory, represented by Murphy (1996, 99), that control of resources and access to a coastline was highly important for sovereigns in general. The resources in Nordkalotten were for centuries little known, but from the seventeenth century onwards more attention was paid to the potential exploitation of resources in the north, in line with Larsen's (2011) description on how this could be a driving force for expansion. Katajala (2011) has also indicated

how this increasing interest in valuable territory triggered a delimitation of the realms in Nordkalotten. This is important background information for the map analysis, as it outlines possible reasons for the colouring of the different nations' extent. The maps depicting Sweden as reaching far north to the sea can be seen as representing an ambition to control the coastline, which historically did not belong to the Swedish nation. On the other hand, the 1596 Treaty of Teusina might, according to Ehrensvärd (2006, 127-128), provide an interpretation that justified this coastal access. However, this was rejected by the Sámi in the area. Other examined maps, depicting Norway in possession of the entire Kola Peninsula, may have been drawn based on the frequent Norwegian presence in this region due to trade, but they may also be a depiction of the situation Norway hoped to achieve. This accords with Mead's (2020, 215) statement that boundaries have been plotted on the map in order to obtain the same result on the ground. Another perspective on this is that the cartographers of that time were inclined to copy one another, and an abundance of coloured copies depicting a certain political affiliation may originate from one single coloured map. Still, the mere existence of maps depicting a certain political affiliation would have an impact on the reader and facilitate the implementation of politics that coincide with the ambitions in the map.



Figure 17: Extract from a coloured version of Jan H. van Linschoten's 1594 map of the Nordic countries (National Library of Norway)

6.4 Article 4: Various cartographic elements

Based on the three first articles, the fourth and last article built on their results, and extended the examination of cartographic elements further. Map titles, dedications, decorations, toponyms and map symbols were analysed in sequence, with a view to their possible significance for national identity. The article's first research question was hence as follows:

How was Norwegian nation-building in the late eighteenth and early nineteenth centuries reflected in maps of the period, through cartographic elements such as map titles, dedications, and toponyms?

The relatively few maps examined in this article were explored thoroughly from different perspectives. Regarding map titles, none of the Norwegian cartographers used the union term 'Scandinavia'. On the contrary, two of the Norwegian cartographers took advantage of the map's title as a tool to allude to Norway's greatness in the Saga era, in line with Barton's (2003) emphasis on this period's importance for the new Norwegian national identity. The cartographer Roosen applied the Norse term 'Noregr' in addition to Norway, while Schöning entitled his map 'Ancient Norway'. As for dedication, none of the Norwegian maps were dedicated to the (union) king. Instead of a royal dedication, the 1844 Vibe and Irgens map was dedicated to the patron of the Norwegian national prime meridian through Christiania, which, taking information in the literature and the historical context into consideration, was a strong political statement supporting Norwegian independence. This prime meridian was also a powerful cartographic element in itself. It was indicated on three out of the article's five Norwegian maps despite the Swedish decree on the use of a union meridian. This exemplifies Pettersen's (2014) statement on this cartographic element expressing national identity.

In addition to the above-mentioned results, the 1844 Vibe and Irgens map seems to have played an even more significant role in the nation-building process. As one of the few maps with decorations, the two Norwegian cartographers used the map frame to depict important Norwegian national institutions, in line with the theory of Schneider

(2007) on visualization of information in the map contributing to a desired impression. Vibe and Irgens' illustrations are 'crowned' with a depiction of the new Observatory in the capital, through which the new prime meridian was established. This relates to Harley's (2001b) [1989] descriptions of how decorations may reveal cartography as an instrument with political power.

Several researchers, among them Keates (1996) and Monmonier (1996), have outlined the importance of toponyms on maps, and how they can be used as an instrument of emancipation. The results from this map analysis unveils that two of the Norwegian cartographers applied what Monmonier (1996, 110) calls a 'powerful weapon'. Schöning focused on Norse toponyms on his map from the Middle Ages, while Munch contributed to the rising Norwegian national pride through his Norwegianising of the traditional Danish-influenced toponyms. According to the Truth and Reconciliation Commission (2023, 462), place names are also part of our cultural heritage, indicating belonging. This is in line with Chloupek (2019), stating that a suitable cartographic language can support emerging national identity and facilitate independence.



Figure 18: Extract from P.A. Munch's 1845 map of Norway, with an abundance of place names and symbols for infrastructure, industries, harbours and settlements (Norwegian Mapping Authority/Kartverket)

In addition, several of the Norwegian maps focused on vital national infrastructure, symbols for industries, harbours, or military fortresses. These may of course have been depicted on the maps for practical reasons, but it is also possible that these symbols and lines were highlighted in order to indicate that the junior union partner Norway was capable of an independent existence. The importance of map symbols have been explained by, among others, Niemi (2005), and his description of the ‘national bulwark’ of schools and churches can be seen as a parallel to my findings of other similar symbols related to national identity.

The main focus of this fourth article was to examine the maps from the perspective of Norwegian nation-building. However, an additional aim was to consider how Swedish maps from the same period had impact on this process:

How might Swedish maps of Scandinavia from the late eighteenth and early nineteenth centuries reflect Sweden’s attempts to assert its authority over the Scandinavian peninsula?

The four analysed maps constructed by Swedish cartographers were to a certain extent different from the five Norwegian maps. Two of the Swedish maps used the term ‘Scandinavia’ in their map titles, and none of them depicted Norway only. Two maps had a dedication to the Swedish union king, and three out of four depicted the national border with Norway in a very subtle way, giving the impression that the Scandinavian peninsula was a unit. This was reinforced in some of the maps by the use of colouring and relates to Berg’s (2005) thoughts on the importance of a distinct boundary to separate nations cartographically. This tool was used by some of the Swedish cartographers in the opposite way, and their maps can be regarded as statements of a union affinity, which Sweden aimed at imposing on Norway as well.

The map analysis in this fourth article mainly demonstrate that different cartographic elements reflected on the one hand, the building of Norwegian national identity, and, on the other hand, Swedish attempts to assert authority over both countries as the senior union partner. In this way, the findings confirm Hemstad’s (2018b) statement on the geopolitical impact of cartographic elements. However, the results are to a certain

degree divergent. Two of the Swedish maps did not use 'Scandinavia' in the map title, and two of them did not have a royal dedication on their map. Regarding the cartographic elements of toponyms and prime meridian, the traditional Danish-Norwegian spelling of place names, and the historically strong prime meridian of Ferro proved surprisingly consistent on most of the analysed maps, regardless of the nationality of the cartographer. This seems to have reflected the contemporary society, with ambiguous perspectives on the union among some prominent Norwegians. The findings from this article thus contribute to nuancing the main conclusion.

6.5 Concluding reflections on the results

The above-mentioned results are important contributions to answering the main research question. Each and one of the findings provides insight into different aspects on Norway's use of cartography in its struggle for independence in the eighteenth and nineteenth centuries. In light of these results, we have seen how maps were used to demonstrate dominance, and to encourage national self-esteem. By relating my four articles to each other and building a chain of arguments throughout the research process, I have aimed not only to summarise the results from the different research questions but to synthesise them by making more of them than just the sum of their parts, as mentioned by Bradford (2023, 509).

We have seen how prime meridians on Norwegian maps evolved from a local diversity to a global line of zero degrees longitude, and how this process included the establishment of a national prime meridian with assertive symbolic importance, dominating Norwegian maps for a century. The political power of cartographic elements was further explored through analysis of historical maps from the the Femunden border region in central Scandinavia. The results demonstrated that boundary lines on maps contributed to allocating resources between nations, as well as supporting an actual increase in Norway's territory. This adds to solving the main research question, indicating that a cartographic element may have an impact on the extent of the area of sovereignty.

The acquired knowledge from the border map analysis was elaborated further through examination of coloured maps of the Nordkalotten region. In both cases, cartography was used to demonstrate political affiliation, and sometimes political ambitions. The large number of differently coloured maps from these Arctic areas indicate confidence in the power of maps in a political controversy. Building on the results achieved this far in the research process, the fourth article analysed various cartographic elements such as toponyms and symbols. The conclusion was a mixed picture, where some of the analysed maps seemed to follow tradition in their use of cartographical elements, while other clearly supported Norwegian national identity. Some of the Swedish maps undoubtedly aimed at suppressing the increasing independence ambitions in Norway, which added to the complexity of the Norwegian nation-building process.

In sum, the results from the four articles demonstrate the high influence cartography had on Norwegian national identity in the eighteenth and nineteenth centuries. The findings of this research process accord with Harley's (2001a, 53-54) [1988] claim that maps are not a passive depiction of the world, but an instrument with political power. This is supported by Strandsbjerg (2010, 70), stating that maps are able to shape reality. As such, cartography is a discursive tool, contributing to constructing actively different images of the world. As we have seen, the discourses expressed through maps are therefore capable of influencing sovereignty.

Before the final conclusion in Chapter 7, I include methodological challenges in this assessment and consider further questions arising from the research.

During my project, many of the findings surprised me. I did not expect to find such a wide variety of prime meridians, including some very interesting local meridians. I was also previously unaware of the lack of Swedish or union meridians on maps of Scandinavia and the strength and duration of the international meridian of Ferro, as well as the Norwegian national meridian of Christiania/Oslo. Likewise, it was interesting to explore the complexity of the boundary-establishing process with Sweden in the eighteenth century and learn how maps were used in the territorial dispute. The common areas of Nordkalotten were described in the literature, but I did

not expect to find such a coloured variation of one and the same black-and-white map, with its implications for the depiction of political affiliation.

When it comes to the last nine maps in the selection and their influence on national identity, I might possibly have been inclined to look for what I expected to find or to interpret the significance of the cartographic elements in a biased way. Nonetheless, my understanding of these maps accords with other indications for the same conclusions, such as literature and the historical context. One example is my interpretation of Carl B. Roosen's 1848 (1845) map, with the depiction of the statue of the Parliament member Christian Krohg and the dating of the map related to 17 May 1814. Literature from authors such as Hammer (1923), Bratberg (2009) and Storsveen (2009) confirm the nationalistic symbolism of Krohg and of the Norwegian Constitution Day, 17 May, which celebration was banned by Swedish (union) King Carl Johan. Roosen's map can thus be read as a comment to the contemporary society and the historical development of that time. On the other hand, other results from this article four, such as the balance between maps used for political purposes and maps with no apparent power motives, were not expected.

Regarding other methodological dilemmas, I consider the lack of information on the colourists colouring maps of Nordkalotten region to be one of the most problematic, as we do not know the colourists' background or their motives. More importantly, we do not know who financed their work and the possible influence the latter may have had. This could perhaps be examined further by in-depth studies of provenance, supplemented by a thorough review of the sales statistics of some of the individual map producers, if such information is available. However, with the knowledge we have today, it is difficult to say anything certain about how coloured maps in this area influenced the distribution of territory between the nations. As far as my study is concerned, I have therefore tried not to draw too categorical conclusions. Nevertheless, it is evident that the different coloured maps have influenced the perception of ownership in Nordkalotten, and it is therefore not unlikely that the cartography may also have had a real impact on sovereignty in the area.

The examined maps in my study represent a broad selection, and the results provide a varied picture of Norwegian cartography in the eighteenth and nineteenth centuries. Although my research has had a relatively broad scope, there are certainly further questions that could be addressed in later research projects. In general, more background information for the examined maps would have been valuable for a broader perspective. Application of digital methods such as GIS could also have resulted in a more efficient analysis. But first and foremost, a more thoroughly search in Swedish archives might reveal relevant maps with cartographic elements that could balance the results of my study. Any maps displaying the union meridian would be useful, as would Swedish maps of Scandinavia depicting Norway as a separate nation. In addition, it would be most interesting if the described border map produced by Jakob Stenklyft c. 1650 could be found, and the information from the literature on its positioning of the borderline verified.

An interesting approach would be to pick up the threads from my fourth article and examine how Norwegian cartography influenced national identity further throughout the nineteenth century. The Swedish–Norwegian union was dissolved in 1905, and cartography may have played a certain role leading up to this, having had a great influence on Norwegian national identity in the first half of the nineteenth century. Another future project could be to elaborate further on cartography used in education, with a comparative study on how Scandinavia has been depicted in Norwegian, Swedish, and Danish school atlases and on school wall maps over time. If the authorities wanted to promote a particular geographical perspective, the school system was a useful tool, and it would therefore be interesting to delve into this section of cartography.

7. Conclusion

In this thesis, I aimed at discovering the impact of maps on Norwegian national identity in the eighteenth and nineteenth centuries, through the following main research question:

How did cartography influence the development of Norwegian sovereignty in the eighteenth and nineteenth centuries?

Through an extensive map analysis in four peer-reviewed articles, I tried to achieve an understanding on how cartography was connected to sovereignty. Article 1 contributed to knowledge on how a cartographic element such as a prime meridian could support national identity. This led to the starting point for Article 2. The examination of boundary lines in this article helped me gain insight into the importance of maps as documentation of territorial claims. This perspective was further developed in Article 3, focusing on the colouring of maps in the Arctic parts of Scandinavia. In this analysis, I examined how this cartographic element could have impact on political affiliation in this region. Article 4 benefited greatly from the work completed in the three preceding articles regarding prime meridians, boundaries, and map colouring, providing a useful framework for this fourth article's further exploration of cartographic elements such as map titles, dedications, toponyms, and map symbols.

The findings have mainly been supported by the reviewed literature, and a summary of the results from the different parts of the research process indicate the following:

- The turbulent political situation in Scandinavia in the eighteenth and nineteenth centuries had a profound influence on the Norwegian sovereignty question.
- A wide range of prime meridians on Norwegian maps were narrowed down to mainly one important national meridian during the nineteenth century.
- The prime meridian had political power during the union between Norway and Sweden from 1814 onwards.
- Sweden tried to bring about a common cartographic framework by decree, while Norway put up firm resistance and manifested its national consciousness in maps.
- There was a lack of cartographic consensus between Norway and Sweden framing the negotiations before the 1751 Border Treaty.

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- The final position of the Norwegian-Swedish national boundary in central Scandinavia was influenced by historical maps used to support territorial claims and secure valuable resources.
 - Maps of the Arctic parts of Norway and its neighbours from the sixteenth to the nineteenth centuries contributed to the perceptions of political affiliation in the region.
 - Hand-colouring of printed black-and-white maps was used to demonstrate sovereignty in the Northern areas and was part of the rivalry for determining boundaries in the Arctic region.
 - Norse toponyms on selected Norwegian maps were used as a reminder of the bygone eras when Norway was an independent country, in order to encourage national self-esteem.
 - Norwegian and Swedish cartographers applied map titles and dedications to express their view of the two countries as a union or as two separate countries, and to communicate a close connection to the king, authorities, or other prominent persons.
 - There was an ambiguous situation in Norway during the union with Sweden, in which some leading Norwegians approved of the Norwegian-Swedish union, while other prominent people aimed for independence. This situation seems to have been reflected in the maps of that time.

The results have been evaluated in their historical context, and we have seen how the analysed maps have represented selective views of the contemporary society. Using powerful cartographic elements, rulers have influenced the world view expressed through the maps, promoting their ambitions, defining resource allocation, and justifying their territorial claims. In this way, the maps have contributed to shaping reality and influencing sovereignty. The relationship between cartography and the increasing Norwegian national pride during the eighteenth and nineteenth century has been documented, as has the role of cartography as an instrument for asserting political authority from the Swedish side. However, further research should address the Swedish aspects of the topic, with more comprehensive research in Swedish archives.

The thesis contributes to knowledge on the impact of maps on national identity and sovereignty, and to a better understanding of the power of cartographic elements. In addition to interesting empirical results, the thesis has also provided new theory on the complex interdependence between cartography and territory. My research has also contributed to new theoretical approaches in terms of how cartographic elements were used to promote political ambitions. These issues have gained new relevance in the current period of upheaval. In general, cartography has been and still is an important

military discipline, in which knowledge of terrain and positions represents advantages in the struggle for hegemony. The results of this study suggest that there may have been a degree of expansionism in the relationship between Norway and Sweden in the nineteenth century. This has its parallel in the almost colonial relationship between the Norwegian authorities and the Sámi people in Nordkalotten, and cartography has also played an important part of demonstrating Norwegian presence in Svalbard and Antarctica.

The main territorial conflict of our time in Europe is the Russian invasion of Ukraine, justified in historical imperialism and appetite for more land. In the 2022 annual report of the Norwegian Mapping Authority, the importance of cartography in this situation is emphasised: ‘The war in Ukraine, events in our immediate area and NATO applications from our Nordic neighbours, have created a need for new mapping’ (Kartverket 2023a). It is imperative to have cartographic control over our own country via sufficient, continuously updated, and quality-assured geodata, and we need competence to use them. This is not only relevant in times of upheaval, as most aspects of a modern society depend on cartography and geodata to ensure a smooth operation for the benefit of the citizens.



Figure 19: On 5 July 2023, a newly built border cairn was inaugurated on the border between Norway and Sweden. It is very rare that new border cairns are built, but at this important point of the national border, the borderline has been indistinctly marked in the terrain since the 1751 Border Treaty. When the boundary line originally was to be marked in this area in 1753, it was feared that a cairn at this location would be damaged by the timber transport in the waterways. Thus, it took 270 years before a cairn came into place. It is located at Hvitsjøen in Rømskog, approximately 120 kilometers southeast of the Norwegian capital Oslo, and is positioned with high accuracy through a satellite-based

measurement method. The border cairn has been built in collaboration between the Norwegian Mapping Authority and the Swedish Land Survey. It is not only a symbol of a boundary line that separates Norway and Sweden, but the joint construction project also demonstrates the present close relationship between the two Scandinavian countries (Kartverket 2023b. Photo: Synne Storvik, Norwegian Mapping Authority).

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Colouring sovereignty: How colour helped depict territorial claims to the Arctic in Northern Europe on sixteenth to nineteenth century maps.

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Abstract

This paper analyses the depiction of the Arctic parts of Northern Europe, 'Nordkalotten', on sixteenth to nineteenth century maps, with a particular focus on the Norwegian region of Finnmark. During this period, various sovereigns attempted to take possession of this territory. The aim of this paper is to examine how these remote areas were represented cartographically in an era before permanent national borders were established, and to consider how the maps of Nordkalotten affected territorial claims and perceptions of possession in the region.

The history of maps and mapmaking has insufficient information on the use of colour on historical maps. A further objective is thus to explore how colouring was used as a cartographic tool to help promote the interests of the different nations in Nordkalotten.

The political dispute over sovereignty of Nordkalotten peaked in the mid-eighteenth century, and in the years preceding this maps of the region became important political tools in their own right. Political tensions eased after the 1751 border agreement between Norway and Sweden, but erroneous depictions of the border continued for another century. Such mistakes were also reflected in colouring, which at times highlighted outdated information and cartographical inaccuracies. The results of this study confirm that cartography contributed to perceptions of political affiliation in the northern territories. They also demonstrate that multiple sovereigns used maps as instruments to claim or exert control, and that cartography, including the powerful instrument of colouring, was part of the rivalry for determining the borders in the far north.

Keywords: Arctic, border, cartography, colouring, Finnmark, maps, Nordkalotten, Northern Europe, political tools, sovereignty, territorial claims

1. Introduction

The Scandinavian Northlands include the areas north of the Arctic Circle in Norway, Russia, Sweden and Finland¹. Since the Nordic Council was set up in 1952, these Arctic areas have been referred to by the common term 'Nordkalotten'.² The main focus of this study is the Norwegian sector of Nordkalotten: the region Finnmark.

The political affiliation of Finnmark was not finally decided until the mid-eighteenth century, and its ambiguous boundaries were significant for sovereigns eager to extend their territories. Maps at that time were either hand-drawn in black-and-white or printed in black-and-white. In both cases, the maps could be coloured by hand later. The different copies of a printed black-and-white map could be coloured differently, resulting in deviant depictions of the mapped area. Where they were intended for political use, most regents had a colourist who coloured maps at the request of their patron. Colour hence became a tool for depicting territorial unity.³ Boundary lines were rarely drawn on such old maps, and thus the colouring often included the establishing of boundaries. Consequently, one map could be found in several editions, with differences in colouring and the position of state borders, thus making parts of Finnmark appear to belong to different rulers.

It is worth noting that many Scandinavian pre-nineteenth century maps, and also maps in general during the study period, were not created independently 'from scratch'. Quite often, 'new' maps were drawn based on existing maps. An important methodological point is that now, centuries after their creation, it can be challenging to distinguish between maps intended to promote territorial claims, and maps that showed 'wrong' boundaries due to inaccurate source maps. I have aimed, however, to identify, as far as possible, which of the examined maps were commissioned by a sovereign or state administration, which could indicate a possible political motive.

The literature on the history of cartography contains limited information on the use of colour on historical maps.⁴ This topic deserves closer attention. The aim of this paper is thus:

¹ Mead 1974: 7.

² Mead 1974: 7; Ehrensvärd 1984: 4.

³ Ehrensvärd 2006: 68.

⁴ Ehrensvärd 1987.

- (1) To examine how the cartographic depiction of Nordkalotten affected territorial claims and perceptions of possession in the region; and
- (2) To explore how the use of colouring as a cartographic tool helped promote the interests of the different nations in Nordkalotten

2. Colourful cartography

The seven maps examined here were created between the late sixteenth and the mid nineteenth centuries by different mapmakers. All the maps were coloured by hand. My aim was to select maps where several versions exist, preferably with different hand-colouring, which could shed light on the research question regarding the shifting political affiliation of Finnmark.⁵

Colour is an important element in map design, with a powerful impact both physiologically and psychologically.⁶ Its use on maps was first for aesthetic purposes, progressing into a more scientific aspect of depicting geographical, administrative and other information.⁷ Certain colours are preferred over others by map readers and map producers, leading to subjective reactions to a given map.⁸ This makes colour a potentially impactful cartographic tool, which has been used for purposes such as identifying political units.⁹

A map always reflects the mapmaker's choices and values; hence there is no such thing as objective cartography.¹⁰ With maps as their secret weapon, sovereigns were able to create or preserve a worldview that suited their purpose. Cartography was one of the driving factors behind the emergence of modern territorial sovereignty with colouring as an important tool.¹¹ A map could help claim ownership or keep control of a territory. The map historian David Woodward (1942–2004) claimed that colouring could be carried out in

⁵ Some of the examined maps have been accessed digitally from sources representing the nations of Nordkalotten, like the National Library of Norway and of Sweden respectively, HM The Queen's Reference Library in Denmark, the Regional Library of Lapland in Finland, and the Russian Geographic Society. Other maps have been accessed digitally from cartographic collections at international universities, like The University of Amsterdam in the Netherlands and Stanford University in the USA. Among the sources for further information are The Norwegian Mapping Authority and the Royal Library of den Haag in the Netherlands.

⁶ Robinson 2010: 79.

⁷ Woodward 2007: 603.

⁸ Dent, Torguson and Hodler 2009: 261.

⁹ Monmonier 1996: 170; Delano-Smith 2007: 555.

¹⁰ Black 1997: 17.

¹¹ Kraak and Ormeling 2010; Branch 2013: 17.

accordance with precise instructions to ensure that the final result pleased the map's patron.¹² Other maps were coloured for various end users, without a specific directive behind the colouring.

Maps could be sold uncoloured or coloured, the latter raising the price by about 30 percent.¹³ Many European black-and-white atlases from the sixteenth and seventeenth centuries were later coloured to order at the behest of the publisher or owner.¹⁴ Hand colouring of dividing lines and shading on the map allowed for different versions to be produced based on the same black-and-white original. The historian Monique Pelletier (1934–2020) argued that in this way one single map could be adapted to please different clients by tailored colouring supporting the requested theme or worldview.¹⁵

By separating the colouring process from the original map making process, the cartographer lost control over his end product, as the hand colourists might depict sovereignty in a way which the original map maker did not imagine or intend.¹⁶ Numerous detailed instruction manuals on map colouring were published in Europe.¹⁷ The colouring practice often followed national traditions, where the French coloured along lines, emphasizing limits and boundaries, while the German preferred full colouring, covering national or administrative regions.¹⁸ According to the geographer William R. Mead (1915–2014), the Scandinavians were introduced to map colouring by the 1578 Danish version of the 1549 Swiss printed Valentin Blotz', *Illuminierbuch* ('Highlight book').¹⁹

The instruction manuals were also used to educate the nobility, as it was important for them to have drawing and painting skills. In addition, the colouring of maps was a tool for teaching upper-class children geography.²⁰ Geography textbooks and school atlases were vital for the dissemination and significance of maps. One example is the important work of the German teacher and trained theologian Johann Hübner (1668–1731). In his textbooks, he described the political circumstances of countries, and he ordered a large number of black-and-white printed maps which he had coloured, of which many were sold and disseminated over

¹² Woodward 2007: 603.

¹³ Hofmann 2007: 1588.

¹⁴ Ehrensward 1982: 38; Woodward 2007: 606; Verdier and Besse 2019: 294.

¹⁵ Pelletier 2007: 1499.

¹⁶ Verdier and Besse 2019: 297.

¹⁷ Ehrensward 1982: 38; Woodward 2007: 603; Hofmann 2007: 1599; Verdier and Besse 2019: 297.

¹⁸ Verdier and Besse 2019: 295.

¹⁹ Mead 2007: 1791.

²⁰ Woodward 2007: 605.

Europe.²¹ Hübner also collaborated with cartographers to create maps. Together with German cartographer Johann Baptist Homann (1664–1724) he published maps for schools.²² Their 1719 coloured map of Europe clearly depicts the political division of Nordkalotten, and as part of a school atlas, their conception of territorial possession became widespread.²³ Cartography can even today have a political dimension, and since maps are often perceived as objective, their influence is profound.²⁴ The term ‘persuasive maps’ was coined in the 1970s by the geographer Judith Tyner to describe ‘maps whose main object is to change or influence the reader’s opinion’.²⁵ An important tool in persuading readers is to use the psychology of colour to alter the way the maps represent reality. Colour can both conceal cartographic elements by distraction and draw the reader’s attention towards others.²⁶ Colour can also clarify the map elements and contribute to an explicit cartography.²⁷ The simple fact that a map has colours can make it more appealing than an equivalent black-and-white map.²⁸

A powerful example of the influence of colouring is the first map of Norway drawn by a Norwegian cartographer, a map from 1761 by Ove Andreas Wangensteen (c. 1725–1763).²⁹ There are several original drawings of this map. One of them is kept at the Norwegian Mapping Authority’s archive, where it is also digitalized.³⁰ Two others are kept at The National Library of Norway, one of them in the Ginsberg Collection at The National Library’s map centre, one of the world’s most comprehensive collection of printed maps of Norway and the Nordic countries.³¹

At the time of Wangensteen, Norway was in political union with Denmark, and his map of Norway was created ten years after Denmark-Norway’s border with Sweden was finally agreed upon following years of conflict over the position of the border in the Femunden

²¹ van der Linde 2020. Information to author in e-mail, 9 November 2020.

²² See article of Benjamin van der Linde in this volume.

²³ Homann, Johann B. and Hübner, Johann. 1719. *Charte von Europa*. David Rumsey Map Collection, Stanford University, USA. Accessed 30 March 2021. <http://www.davidrumsey.com/maps29.html>

²⁴ Schüler 2011.

²⁵ Tyner 2018.

²⁶ Monmonier 1996: 163.

²⁷ Robinson 2010: 95.

²⁸ Monmonier 1996: 169.

²⁹ Ginsberg 2009: 101.

³⁰ Wangensteen, Ove Andreas. 1761. *Norge 79: Kongeriget Norge afdelet i sine fiire Stifter; samt underliggende Provstier*. Norwegian Mapping Authority. Accessed 15 October 2021: <https://kartverket.no/om-kartverket/historie/historiske-kart/soketreff/mitt-kart?mapId=6841>.

³¹ Wangensteen, Ove Andreas. 1761. *Kongeriget Norge afdelet i sine fiire Stifter; samt underliggende Provstier*. Norge: Kart 2482, and Ginsberg gaa0010000860.

area. Despite being a Norwegian, Wangenstein mistakenly placed the border in accordance with the Swedish claim.³² This embarrassing cartographic mistake was later corrected, and a new borderline, marked with eye-catching colours, was added to the original map. This enabled Wangenstein to divert focus away from the incorrect, black borderline, which is hardly noticeable unless it is actively looked for.

During the eighteenth century, technical skills and technological instruments within cartography improved significantly. In Norway, surveying and cartography were professionalized from c. 1750.³³ This era also saw the continued emergence of nation states with fixed borders. As a result, there was increasingly less room for maps with flexible representations of sovereignty, and maps generally became more accurate. The border between Norway and Sweden was formalized by the 1751 Border Treaty of Strømstad.³⁴ This also included the border in Finnmark, although there was considerable debate and long-lasting negotiations about parts of the border.

The transition from hand-coloured maps to printed colours in Europe in the nineteenth century is important because it gradually removed the possibility of deliberately altering the depiction of sovereignty. Colours were now fixed, hindering different versions of the same map. Nevertheless, there were still inconsistencies in some areas, partly because previous cartographic blunders were still being copied. However, cartographic tools like colouring do not only have a powerful influence when used unintentionally, as they are still being used today for propaganda purposes.³⁵

3. Mapping the North

An important function of maps is to divide up terrain and reveal the limits of sovereignty and political control.³⁶ In this way, maps can symbolize national unity.³⁷ Continental Europe was mapped with some precision as early as the fifteenth century, while Northern Europe was still just sketched on maps, based mainly on assumptions.³⁸ This changed dramatically during the sixteenth century, when interest in the Nordic region increased and expeditions to the

³² Hoem 1986: 55.

³³ De Seue 1878.

³⁴ Johansen 2020.

³⁵ Larcher and Piovan 2018.

³⁶ Black 1997: 12.

³⁷ Monmonier 1996: 88.

³⁸ Karlstrøm 2015: 1.

North provided better knowledge of the region. In 1539, the *Carta Marina* map was produced by the Swedish Catholic ecclesiastic and cartographer Olaus Magnus (1490–1557) and provided a considerably improved cartographic depiction of the Nordic countries.³⁹ However, northern Scandinavia still lagged far behind more southerly areas in terms of reliable maps. Until the middle of the eighteenth century, maps of Nordkalotten were commonly drawn by cartographers with little or no direct knowledge of the region.⁴⁰ When foreign cartographers did visit Nordkalotten, they mainly travelled along the coast, meaning that inland features were not as well represented on their maps.⁴¹ Yet, according to Mead, in the sixteenth and seventeenth century the territory and people of the North “were brought to the attention of Europeans ... through the cartographer’s art”, underlining the importance of cartography.⁴²

4. Sovereignty dispute

Historically, the name Finnmark was given to a much larger area than the current Norwegian region of Finnmark.⁴³ The indigenous people of Nordkalotten are the Sami people, formerly known as ‘Lapps’, a term that is seen as offensive today.⁴⁴ The Norwegian translation of the term ‘Lapp’ is ‘Finn’. This gave its name to the extended region of Finnmark, the ‘Land of the Lapps’ or ‘Lapland’.

The Sami people did not have a common state administration and were also relatively few, living across a large area, many with a nomadic lifestyle herding reindeer. This led to disputes over who was entitled to tax them. The result was often a double or triple tax burden on the Sami.⁴⁵ The ‘Sami Tax’ was important to the region’s rulers and led to frequent disputes over the political affiliation of Nordkalotten. This conflict is documented as far back as 880 and continued for a period of 700–800 years.⁴⁶ For long periods, the boundary lines in Nordkalotten were porous, enabling inhabitants to continue hunting, fishing and reindeer herding across the border. The traditional trading systems in the region were partly overlapping and also did not necessarily coincide with what later became the

³⁹ Mead 2007: 1786–88.

⁴⁰ Briså (n.d.): 52–63.

⁴¹ Briså (n.d.).

⁴² Mead 1974: 12.

⁴³ Imsen 2005: 358.

⁴⁴ Rapp 2008; Berg-Nordlie 2019.

⁴⁵ Norsk historisk leksikon 2004.

⁴⁶ Julku 1987: 261–71; Troms Fylke 2020.

nation states.⁴⁷ In addition, the complicated taxation system contributed to a high level of conflict. The Russians were allowed the privilege of taxing the inhabitants west to Målselv in today's Norway.⁴⁸ In return, the Norwegians had the right to tax the inhabitants as far east as the White Sea in today's Russia, suggesting a degree of Norwegian sovereignty over the Kola peninsula.⁴⁹ Furthermore, the Swedes claimed parts of Finnmark to gain access to the Arctic Sea.⁵⁰ Thus a picture emerges of a vast region of common use without clear lines of demarcation.

It was not until the beginning of the nineteenth century that European state formation completed its transition to an exclusively territorial sovereignty, and the complex system of overlapping authorities that existed in Nordkalotten as well as in other parts of Europe was brought to an end.⁵¹ A fixed boundary between Norway and Russia was finally established in 1826.⁵² However, many maps from the decades before the 1826 demarcation showed the Norwegian-Russian border following regional rivers. One example is Antonio Zatta's (1757–1797) 1782 map of Russian Lapland, others are a Russian school atlas from 1794 and Vasiliï Pyadyshev's (1758–1835) 1820 map of the Russian Empire.⁵³

In the sixteenth century, rising economic interest in Nordkalotten led to conflicts between the different Nordic countries.⁵⁴ The sovereigns tried to strengthen their territorial claims by founding settlements, maintaining a military presence and through several expeditions.⁵⁵ Norway was ruled from distant Copenhagen for centuries during the Denmark-Norway political union (1380–1814), and in 1599, the Danish-Norwegian king himself led a voyage to the far north to demonstrate Danish-Norwegian sovereignty.⁵⁶ One purpose was to construct new maps of the region, as cartography was crucial in confirming land ownership. After the expedition, the king commissioned a map of Scandinavia from the Dutch

⁴⁷ Hansen 1987: 217.

⁴⁸ Munch and Keyser 1849.

⁴⁹ Ehrensvärd 2006: 127.

⁵⁰ Mead 1974: 12.

⁵¹ Branch 2013: 32.

⁵² Nissen and Kvamen 1962.

⁵³ Zatta, Antonio. 1782. *La Lapponia Russa coi Governi di Olonechoi, Carelia, Bielozero, ed Ingria Nella Russia Europea*. The Russian Geographical Society. Accessed 17 March 2021.

<http://geoportal.rgo.ru/record/1416>; N.n. 1794. *Atlas of the Russian Empire for the youth*.

Etomesto.ru/Old Map.org. Accessed 17 March 2021. <http://www.etomesto.ru/map/base/99/atlas-rossii-1794.pdf>; Pyadyshev, Vasiliï P. 1820. *Geographical atlas of the Russian Empire*. Etomesto.ru/Old Map.org. Accessed 17 March 2021. <http://www.oldmap.org/map-atlas-pyadyshev/>

⁵⁴ Pihlaja 2005: 25; Mead 2007: 1792.

⁵⁵ Julku 1987: 265.

⁵⁶ Hansen 2005: 378; Hagen 2009: 66–69.

cartographer Simon von Salingen. The map explicitly stakes Norway's claim to the Kola peninsula (today part of Russia) with the text 'Lapland, part of Norway'.⁵⁷

A few years later, at the beginning of the seventeenth century, Sweden launched an offensive in Finnmark in an attempt to gain access to the coast and dominion over the fjords in the north.⁵⁸ They included cartography in their struggle for hegemony, and in 1603 the Swedish King Karl IX ordered better maps for the whole of Scandinavia.⁵⁹ The task was taken on by, among others, the Swedish cartographer Andreas Bureus (1571–1646) who produced a map called 'Lapponia' in 1611, with borders drawn favourably for Sweden.⁶⁰ This extensive Swedish offensive resulted in the 1611–1613 Kalmar War between Denmark-Norway and Sweden. By the war's end in 1613, Sweden had been forced to waive its claim to the coastal areas of Finnmark. At the same time, Norway gradually lost its territorial claims and tax rights in the Kola peninsula, while Russian rights west of Varanger in Norway likewise came to an end.⁶¹

The following century saw knowledge of Nordkalotten increased through scientific expeditions by rivaling nations looking to outdo one another.⁶² One important voyage was made in 1732 by the Swedish botanist Carl Linnaeus (1707–1778), later ennobled as von Linné.⁶³ The purpose of his 'Lapland expedition' was to explore the region's resources on behalf of the Swedish crown.

A few years later, large areas in Finnmark were at stake in the border negotiations between Norway and Sweden. The Swedish claims on territory in Finnmark were contradicted by, among others, the Norwegian official and cartographer Gerhard Schøning (1722–1780). His objective was to put Norway on the map – literally – as an independent nation, and he determined that the Sami had paid taxes to Norway long before they paid taxes to Sweden or Russia.⁶⁴ In the negotiations leading up to the 1751 boundary treaty, Norway gave up

⁵⁷ Mead 2006: 1793; Aasheim 2013: 241.

⁵⁸ Nielssen et al. 2014: 395–97.

⁵⁹ Ehrensvärd 2006: 130.

⁶⁰ Bure, Anders. 1611. *Lapponise, Bothniae Cajaniseque regni Suecie provinciarum septentrionalium nova delineato sculpta anno domini*. National Library of Sweden. Accessed 15 November 2020. https://weburn.kb.se/metadata/642/digkart_10396642.htm

⁶¹ Ehrensvärd 1984: 9; Julku 1987: 267.

⁶² Pihlaja 2005: 29.

⁶³ Stadius 2005.

⁶⁴ Larsen, Stian Bones. 2000. *Gerhard Schøning og omvurderingen av det nordlige på 1700-tallet*. Nordlit 6 (1):1 63–78. Retrieved 5 October 2020: <https://doi.org/10.7557/13.2076>; Hoem, Norge på gamle kart, 104.

their claim on Idre and Särna further south in return for administrative control over the Sami common area in inner Finnmark around the villages Kautokeino and Karasjok, an achievement reflected on the maps. Similarly, Sweden gave up its claim to the Arctic coast in Varangerfjord while Norway ceded the areas south of the Tana river.

As part of the border dispute, the Danish officer and surveyor Thomas Hans Heinrich Knoff made a hand-drawn map of Finnmark in 1749.⁶⁵ This was one of the first maps of this region that depicted the interior in detail and contained an abundance of geographical information. This manuscript map provides an overview over the different affiliations of parts of the Nordkalotten region (Fig. 1).⁶⁶ As this map is a very good illustration of the complicated political circumstances in these areas, it is presented first as a framework for the following maps, which are presented chronologically. The map is a typical example of what Antonio Stopani calls “a preparatory map ... (which, preceding a treaty or an agreement)... made use of colours to identify the surface of lands whose ownership was disputed or which were the object of an amicable exchange”.⁶⁷

The map is neither dated nor signed, but a slightly different version of the map is found on the web page of a municipality in Northern Norway.⁶⁸ This source informs us that the map was produced by the Danish cartographer Thomas Hans Heinrich Knoff (1699–1765) in 1749 in preparation for the Norwegian-Swedish border treaty of 1751. Knoff was born in Copenhagen and spent several decades in Norway doing surveys, mapping and engineering work on Norwegian fortifications. He mapped Northern Norway from 1744 to 1749 and one of his last works in the region was this colourful and detailed map of Finnmark and its surroundings.⁶⁹ The abundance of toponyms and churches provide excellent geo-locational information. The fortress of Vardøhus is clearly marked, as are some Sami settlements. Several border cairns can be traced on the map, some of them marked with a year, the latest dated 1747. One of the cairns has a note by the cartographer: “Swedish pretension

⁶⁵ Briså (n.d.).

⁶⁶ Knoff, Thomas H. H. 1749. *Map of the distribution of land areas in Finnmark and surroundings, as part of the negotiations with Sweden on the national boundary*. Copenhagen: HM The Queen’s Reference Library, Kings’ Collection.

⁶⁷ Stopani 2019: 171.

⁶⁸ Hasvik municipality (n.d.) *Thomas Hans Heinrich Knoffs forarbeider til Norsk-svensk grensetraktat av 1751 anno 1749*. Accessed 20 March 2021.

<http://www.hasvik.kommune.no/viewimage2.php?folder=11544&no=9>

⁶⁹ Hemneslekt (n.d.) *Thomas Hans Heinrich Knoff*. Accessed 20 March 2021.

<http://www.hemneslekt.net/getperson.php?personID=1132148&tree=Hemne>

boundary cairn”, indicating that the map was drawn before the final agreement between the two countries in 1751.

Knoff accompanied the map with a detailed written explanation and a German translation.

According to this information, a selection of the map’s colours represent as follows:

- The sharp red line in the lower left end of the map, marked with an A, is the Norwegian-surveyed mountain ridge line;
- Between the red and the green line is a yellow territory marked with C, which is considered to belong to Enontekis (in Sweden at that time, Finnish Lapland today);
- The yellow line marked with a D (north of the red line), is the Swedish-surveyed line;
- The green territory south and north of the yellow line from the left and to the middle of the map, marked with an E, is common territory for Kautokeino and Avjovarre (Karasjok). Until the 1751 border treaty, these two villages were under Swedish administration, but were ceded to Norway as part of the treaty;
- The red territory along the coast, marked with an F, is considered Norwegian territory only, which ‘should follow the Sea Sami, according to the Treaty of 1613’. These areas are thus indisputable, and the note refers to the end of the Kalmar war in 1613, when Sweden had to give up its ambitions regarding the coastal areas in Finnmark;
- The green territory in the middle of the map, between the red territory (Norwegian only) and the yellow line (Swedish surveyed), marked with a G, ‘should belong to Ut(s)joki but is still transferred to Norway’, according to the cartographer’s explanation. Utsjoki is today the northernmost municipality in Finland (Finland belonged to Sweden until 1809)⁷⁰;
- The white territory in the middle of the map, marked with an H, is explained as partly Swedish (Utsjoki) and a common Swedish (Enare) and Russian area. The explanation also mentions Swedish claims in this area. The vertical line through Lake Enare, separating the white (H) and the green (J) territory, marks the Teusina treaty line of 1595 between Sweden and Russia (although by 1749 Sweden had encroached far to the east of this);

⁷⁰ Gustafsson 2017: 159.

- The green territory with red bordering, marked with a J, is Norway's and Russia's common Sea Sami territory. The area is today divided between Norway and Russia.
- The yellowish green territory in the right-hand part of the map, marked with a K, belongs to Russia only. These are areas in the east which today are mainly Russian, but some of its western parts are today Norwegian.
- The white territory with yellow bordering along the Varanger fjord, marked with an L, depicts the Swedish claims in this area. Today this is part of Norway.

It is worth noting that the official administrative border between the two Norwegian counties Nordland (at that time including today's Troms) and Finnmark does not agree with the map's vivid depiction of the area. The county border is one of many historic examples of the authorities drawing boundaries that bear little regard for ethnicity, culture and existing division of territory. This colourful map is thus important as it illustrates excellently the particularly complicated political and ethnological patterns in Nordkalotten, with a combination of (Danish-) Norwegian, Swedish (-Finnish), Russian and common territories. Knoff uses colour to mark on the map which areas are not to be negotiated and who is in possession of which territories. The map was part of the negotiations leading up to the 1751 border treaty, and the use of colour reflects perceived sovereignty in Finnmark.

5. Comparison of publishers' maps

The above-mentioned map by Knoff was an example of a manuscript map, made for one special purpose. In contrast to these are the commercial maps, published for everyone in several copies, which allows for differences in the later added colouring. In this chapter, selected publishers' maps will be examined. By comparing differently coloured copies of what was originally one and the same black-and-white map, the intention is to help shed light on the struggle for dominance in Nordkalotten. The empirical material is chosen to illustrate the maps' role in this conflict, and the narrow selection of maps provides an opportunity to discuss this in more detail. I will explain how the maps are coloured, which impression they give of sovereignty in the depicted region, and how they relate to the theoretical aspects of the research questions. The aim has been to maintain a geographical and temporal balance in the selection. At least one map from each of the region's neighbouring countries has been selected for examination: One Danish/Norwegian (Knoff),

one Swedish (Bure) and one map of Russia (Homann). The first part of the study period was a period of Dutch cartographic eminence when few maps were drawn by Nordic cartographers.⁷¹ Consequently three of the maps are Dutch (Ortelius, van Linschoten and Blaeu). In addition, the selection includes a map made by an American cartographer (Woodbridge). The maps are also from different time periods. Two of them are from the late sixteenth century (Ortelius and van Linschoten), two from the seventeenth (Bure and Blaeu), two from the eighteenth (Homann and Knoff) and one from the nineteenth century (Woodbridge).

5.1 Abraham Ortelius' 1570 map of Scandinavia

The map with the title *Septentrionalium Regionum Descriptio* ('Description of the Northern region') was firstly published in an atlas in 1570 by the cartographer Abraham Ortelius (1527–1598).⁷² He started to work as a colourist of maps, in addition to drawing maps himself.⁷³ In 1570, he invented the first publisher's atlas, *Theatrum orbis terrarum* ('Theatre of the World'), which came in numerous extended editions for several decades.⁷⁴

Ortelius' atlas was printed by different publishers and spread throughout Europe via an extensive network of booksellers.⁷⁵ It is estimated that more than 8100 copies of the atlas were printed between 1570 and 1641, and the map of Scandinavia was included in all editions.⁷⁶ Occasionally the atlases were hand-coloured and bound, which more than doubled the price.⁷⁷ The copies of this map examined come from coloured atlases. As there were no colour schemes in the seventeenth century, the use of colour varies from map to map and does not appear to follow any sort of system. On some maps, darker coloured lines indicate coastlines and boundaries. For instance, the colour yellow is used for Russian territories on some maps and for Danish-Norwegian territories on others. However, the different colours on each map do give a clear depiction of apparent political affiliations

⁷¹ Verdier and Besse 2019: 294.

⁷² Ortelius, Abraham. 1598. *Theatrum orbis terrarum*. Antwerpen. Utrecht University Library Special Collections. Accessed 24 September 2021. https://objects.library.uu.nl/reader/index.php?obj=1874-374896&lan=en&_ga=2.206332304.200391663.1593413333-1000039895.1530258143#page//95/95/91/95959172853669792876362054767685983315.jpg/mode/1up

⁷³ Fischer 1911; Voet 1998: 80; Ehrensvärd 2006: 97; Woodward 2007: 603.

⁷⁴ Voet 1998: 29.

⁷⁵ Voet 1998: 91.

⁷⁶ Ginsberg 2006: 94.

⁷⁷ Voet 1998: 82.

within the region. On some of the versions, the region Finnmark is coloured as Norwegian, on some as Swedish, and on some even as Russian. In this way, the colouring influences one's perception of its ownership.

In his atlas, Ortelius also published a map of Europe, where the northern regions are coloured as differently as on the map of Scandinavia. The following table summarizes a few of the abundant variations of Ortelius' 1570 map of Scandinavia, and some of the variants of the map of Europe:

Type and origin of coloured map	Norway coloured	Sweden coloured	Russia coloured	Territorial depiction
Scandinavia. Henrikson ⁷⁸	Yellow	Pale yellow	Yellow	Swedish access to the sea in the north, including the Kola peninsula
Scandinavia. Van Mingroot and van Ermen ⁷⁹	Orange bordering	Yellow	Green	Finnmark coloured Norwegian, Kola peninsula included in Sweden
Scandinavia. Ginsberg ⁸⁰	Yellow bordering	Yellow bordering	Green	Same colour used for Norway, Sweden/Finland and Kola peninsula, no indication of political affiliation
Scandinavia. National Library of Norway ⁸¹	Green	Pink	Yellow	Sweden apparently has access to the sea in the north
Europe. National Library of Norway ⁸²	Green	Pink	Yellow	Sweden apparently has access to the sea in the north

⁷⁸ Ortelius, Abraham. 1570. *Septentrionalium Regionum Descriptio* Henrikson, Alf. 1987, 215. *Nordens historie. Et illustrert overblikk*: Stabekk: Den norske Bokklubben

⁷⁹ Ortelius, Abraham. 1570. *Septentrionalium Regionum Descriptio*. Van Mingroot and van Ermen 1988: 26-27.

⁸⁰ Ortelius, Abraham. 1570. *Septentrionalium Regionum Descriptio*. Ginsberg 2006: 101

⁸¹ Ortelius, Abraham. 1570. *Septentrionalium Regionum Descriptio*. National Library of Norway. Accessed 25 September 2021.

<https://www.nb.no/items/935b2765ae28018ada682d03d0ff858f?page=295&searchText=atlas>

⁸² Ortelius, Abraham. 1570. *Europe*. National Library of Norway. Accessed 25 September 2021.

<https://www.nb.no/items/935b2765ae28018ada682d03d0ff858f?page=27&searchText=atlas>

Europe. Der Wolfenbütteler Digitale Bibliothek ⁸³	Yellow	Orange	Green	Norway stretches further east but still short Swedish access to the sea in the north
Europe. National Library of Norway ⁸⁴	Pale yellow	Pale orange	Pale green	Norway borders with Russia, no Swedish access to the sea
Europe. National Library of Norway ⁸⁵	Pale orange	Pale orange	Pale orange	Same colour used in the region, no indication of political affiliation

The reasons for some of the variation in colour schemes is probably not clear for us today, but the maps owned by rulers in general with a stake in the north are more likely to be coloured strategically. However, the maps examined demonstrate that within the same copies of the *Theatrum atlas*, there is consistency between the colouring of the Nordic countries both on the map of Europe and that of Scandinavia. This indicates that each colourist might have had a system for the use of colours, even if it differed from other colourists.

In her book on the history of the Nordic map, Ulla Ehrensvärd gives some interesting information about one of the coloured versions of the *Theatrum Orbis Terrarum*.⁸⁶ In the late sixteenth century, the Danish-Norwegian King Christian IV was supposedly tipped off by the bailiffs in Northern Norway to the fact that the Norwegian areas in Finnmark had been coloured as Swedish on some of Ortelius' maps. The incident was confirmed by the publisher in Antwerp to have been done so to depict the Treaty of Teusina in 1596, after the Russo-Swedish war. The treaty extended Sweden's eastern border all the way to Varangerfjord, giving the Swedes access to the sea.⁸⁷ The accompanying map is thought to have been part of the report from the Teusina Peace Conference given by a French captain, Hierome Haultin (lived in the sixteenth ct.). The map is a good example of the deliberate use of colour as a

⁸³ Ortelius, Abraham. 1570. *Europe*. Der Wolfenbütteler Digitalen Bibliothek. Accessed 29 September 2021. <http://diglib.hab.de/drucke/2-1-1-geogr-2f/start.htm>

⁸⁴ Ortelius, Abraham. 1570. *Europe*. National Library of Norway. Accessed 29 September 2021. <https://www.nb.no/items/3a667fd18a8be368a4dedf22f202e695?page=33&searchText=atlas>

⁸⁵ Ortelius, Abraham. 1570. *Europe*. National Library of Norway. Accessed 30 September 2021. <https://www.nb.no/items/f25e8e2847c17784087f5766bc057ce3?page=33&searchText=atlas>

⁸⁶ Ehrensvärd 2006: 127–28.

⁸⁷ Henrikson 1987: 215.

powerful cartographic tool, where Sweden claimed to have more extensive possessions in Finnmark than what the political reality was. As a result, Denmark-Norway did not recognize the new state boundary established by the Treaty of Teusina. Even the Swedes started new negotiations about the boundary in Finnmark with the commandant at Vardøhus fortress, during which the Sea Sami confirmed that the Swedish borderline should follow the mountain ridge and not reach all the way south to Tysfjord south of the Lofoten.⁸⁸ A version of Ortelius' map of Scandinavia coloured in favour of Sweden is found in Alf Henrikson's *Nordens historie* ('History of the Nordic countries').⁸⁹

5.2 Jan Huyghens van Linschoten's 1594 map of the Nordic countries

The Dutch navigator and cartographer Willem Barentsz (1549/50–1597) explored the High North on three different expeditions between 1594 and 1597. His fellow citizen and merchant Jan Huyghen van Linschoten (1563–1611) accompanied him on the first two voyages.⁹⁰ As they navigated the coastline during 1594 and 1595, van Linschoten recorded the area and produced manuscript maps, on which two later printed maps were based.⁹¹ One depicted the Arctic areas of the Nordic countries, and was published in Amsterdam in 1596.⁹² The same map was published by the printing company of the Dutch editor Theodore de Bry (1528–1598) in 1613.⁹³ Another edition, published in 1601, showed the whole of Norway and the North Sea south to the expedition's starting point in the Netherlands. The maps are almost identical, apart from the area they cover. They are black-and-white, with faint dotted lines provided that might indicate the position of national boundaries.⁹⁴ Dotted lines in the sea depict the route of the voyage from the Netherlands to harbours along the Barents Sea, where the Dutch coat of arms with a lion with sword and a bundle of 17 arrows marks the region as territory of interest for the Dutch Republic. There is an

⁸⁸ Ehrensvärd 2006: 127–28.

⁸⁹ Henrikson 1987: 222.

⁹⁰ Van Linschoten, Jan H. and Ketel, Gerard. 1601: 150–51. *Voyagie, ofte Ship-vaert*. Franeker. Accessed 25 March 2021. https://bibsys-almaprimo.hosted.exlibrisgroup.com/primo-explore/fulldisplay?docid=BIBSYS_ILS71565261420002201&vid=NB&search_scope=default_scope&tab=default_tab&lang=no_NO&context=L

⁹¹ Ehrensvärd 2006: 118–26.

⁹² Van Linschoten, Jan H. 1594–1595. Map of the Nordic countries. National Library of Norway. Accessed 24 September 2020. <https://www.nb.no/items/96f19e286542904a70a6ffe826671748?page=0&searchText=Ehrensvärd, The History of the Nordic Map, 120>.

⁹³ Ginsberg 2006: 179.

⁹⁴ Ehrensvärd 2006: 118.

abundance of toponyms along the coast, and the Kola peninsula is named 'Lappia' on the 1596/1613 version and 'Lapland' on the 1601 version. The southern part of Norway is named 'Noorwegen' (Norway), marked with the Danish coat of arms due to the political union between the two countries. The central part of Nordkalotten is named 'Finmarckia' on the 1596/1613 version and 'Finmarcken' on the 1601 version, in accordance with the contemporary conception of this name being used for a much larger region than today's Finnmark. On both versions a fictive channel is marked, extending from Cape Nordkinn by the Arctic Sea southwards across 'Finmarckia'/'Finmarcken' to the Gulf of Bothnia. Despite the almost invisible national boundaries, van Linschoten still managed to indicate sovereignty in the area by placing a coat-of arms-strategically over Nordkalotten. The lion and curved blade was the Norwegian coat of arms used under Denmark, and its use on the map gives a clear impression of Norwegian dominance over Arctic parts of Northern Europe. The National Library of Norway has a hand coloured version of the 1601 map, which depicts sovereignty even more forcefully due to the use of colours (Fig. 2).⁹⁵ Denmark and Norway both have a soft yellow shading, as has the Kola peninsula (named 'Lapland' on this version) and parts of Russia. Sweden and Finland are coloured pink, with a darker pink bordering. The focus of this coloured version of van Linschoten's map is the central part of Nordkalotten, Finnmark. The green shading within the faint original black-and-white border indications makes the region stand out as an entity, separated from the Norwegian and Russian areas in the west and east respectively. The blue colouring of the Norwegian coat of arms attracts attention, demonstrating what is apparently Norwegian sovereignty over the extended Finnmarken region. The green coloured area reaches all the way south to the Gulf of Bothnia, splitting Sweden into two (the eastern part is Finland today). This was not in line with the contemporary political situation. The question remains as to whether the colouring of the National Library's version of the map was an intentional depiction of sovereignty or if it was simply the result of a lack of knowledge by the colourist. The same point can be made regarding Linschoten's use of dotted lines and the national symbols on the original black-and-white version, which could suggest a cartographical statement of territorial ambitions on behalf of Norway, or simply reflect the then lack of knowledge about the Arctic parts of Europe.

⁹⁵ Van Linschoten, Jan H. 1594–1595. *Map of the Nordic countries* (Nordenkart datert 1594 i Linschotens reisebeskrivelse 1601). National Library of Norway. Signatur qKart 1641. ib. no-nb_krt_00679

Another hand coloured version of the 1601 map is found in Ginsberg's collection of printed maps of Scandinavia and the Arctic 1482–1601.⁹⁶ Here the Kola peninsula (named 'Lapland') is bordered in light yellow, Norway and Russia are bordered in pink, and Sweden and Finland are bordered in light brown. Unlike the National Library's version, the area north of the Gulf of Bothnia is shown clearly as part of Sweden, with the Norwegian coat of arms placed incongruously astride the Norwegian-Swedish border. In other words, the colouring here does not follow the dotted lines on the original black-and-white map, and hence does not appear to indicate that Norway supposedly controlled the whole area south to the northern shores of the Gulf of Bothnia. The two sets of colouring of the 1601 map thus give two very different pictures of the political entities in the far North.

5.3 Anders Bure's 1626 map 'Orbis Arctoi'

The Swedish cartographer Andreas Bureus, ennobled in 1624 to Anders Bure (1571–1646), is called the father of Swedish cartography in the Swedish biographical encyclopedia.⁹⁷ In 1611, the same year that the Kalmar War between Norway and Sweden (1611–1613) broke out, he published a detailed map named 'Lapponia', dedicated to the Swedish Crown Prince Gustav Adolf (1594–1632).⁹⁸ However, Bure had not visited this region himself. He drew his map based on information from expeditions initiated by the Swedish King Carl IX, who sought more information about the northern parts of what he considered to be his kingdom, Lapland. At his coronation in 1607 he even styled himself 'King of the Lapps' and promoted Lapland to a Swedish province with its own coat of arms.⁹⁹ The Swedish art historian Ulla Ehrensvärd named Anders Bure "the cartographer of the Great Power dream" and posed the question "when does a map change from being a source of information to being a piece of propaganda".¹⁰⁰ Mead supports this, claiming that the map was part of "the diplomatic arsenal of the Swedish Crown" used to support Swedish claims to Nordkalotten.¹⁰¹ Already in 1603, Bure started the preparations for another large map of the Nordic countries on the orders of the Swedish King Carl IX, whose main focus was the mapping of

⁹⁶ Ginsberg 2006: 178.

⁹⁷ Vennberg.

⁹⁸ Bure, Anders. 1611. *Lapponise, Bothniae Cajaniseque regni Suecie provinciarum septentrionalium nova delineato sculpta anno domini*. National Library of Sweden. Accessed 15 November 2020. https://weburn.kb.se/metadata/642/digkart_10396642.htm

⁹⁹ Ehrensvärd 2006: 130.

¹⁰⁰ Ehrensvärd 2006: 136.

¹⁰¹ Mead 2007: 1794.

Finmark.¹⁰² Bure collected data from many different sources, and the work was not completed until after 23 years. His 1626 map *Orbis Arctoi Nova et Accurata Delineatio* ('The Arctic World newly and exactly described') was a large sheet (118 x 133 cm) with a detailed cartouche including the portraits of the then king of Sweden Gustaf II Adolf and Queen Maria Eleonora.¹⁰³ The map depicted explicitly Sweden's central role in Northern Europe, and the king used it as an instrument of power by distributing copies of the map to a number of influential persons in Europe, including the German-Holy Roman emperor.¹⁰⁴

Other cartographers were inspired by Bure's work and published very similar maps, including the successful Dutch map publishing houses like Blaeu and the Hondius-Janssonius family, who used Anders Bure as their main source for the Nordic countries for decades.¹⁰⁵ Their far-reaching distribution channels ensured acceptance for Bure's cartographic image of Nordkalotten. The Swedish Royal Librarian Gjørvell claimed in 1782 that "almost all maps from the seventeenth century depicting Sweden are copies of this Bure map".¹⁰⁶ This was also the case with the Dutch publisher Henricus Hondius' 1635-version, and Willem Blaeu's version from the same year.¹⁰⁷ The way colouring was used to show different territorial boundaries on the latter is nicely illustrated in van Mingroot & van Ermen's 1988 book.¹⁰⁸ The front cover displays Blaeu's 1635 version of Bure's *Orbis Arctoi* where Sweden, with yellow-coloured borders, is shown apparently in possession of a large length of the Arctic coast (Fig. 3). The coats of arms of the kingdoms of Sweden, Denmark and Norway are prominently shown at the map's top left, with the Swedish one above with a royal crown and the other two below with crowns of lesser rulers. In the cartouche, the name 'Svecia' (Sweden) comes first and is in larger lettering than the names of Denmark and Norway, thus reinforcing the impression of Swedish dominance in the north.

Inside van Mingroot & van Ermen's book is a version where the Arctic coast is shown bordered in green as belonging to Norway.¹⁰⁹ Otherwise, the two maps are identical. Yet

¹⁰² Ehrensvärd 2006: 130, 146.

¹⁰³ Bure, Anders. 1626. *Orbis Arctoi Nova et Accurata Delineatio*. National Library of Sweden. Accessed 2 June 2021. <https://libris.kb.se/bib/17258060> ; Hoem, Norge på gamle kart, 39.

¹⁰⁴ Ehrensvärd 2006: 154.

¹⁰⁵ Regional Library of Lapland (n.d.) *Lapponia 1662*. Accessed 22 March 2021. http://lapinkavijat.rovaniemi.fi/vanhatkartat/eng/1662_lapponia.htm

¹⁰⁶ Ehrensvärd 2006: 156.

¹⁰⁷ Hondius, Henricus. 1635. *Suecia, Dania, et Norvegia, Regna Europae Septentrionale*. Regional Library of Lapland, Finland. Accessed 29 March 2021. <http://lapinkavijat.rovaniemi.fi/vanhatkartat/eng/index.htm>

¹⁰⁸ Van Mingroot and van Ermen 1988: cover page.

¹⁰⁹ Van Mingroot and van Ermen 1988: 50–51.

another version was published by Blaeu in 1635, where the use of colour makes Finnmark appear as an independent territory, separated from the neighbouring countries and bordered with pink lines in contrast to the turquoise and yellow bordering around the other regions.¹¹⁰

5.4 William and Joan Blaeu's map of Europe from 1630

The seventeenth century was the Golden Age of Dutch cartography and in 1630, Joan Blaeu published an important map of Europe on which the Nordic countries are clearly depicted. The map has decorations typical for its time, with lions in Africa, bears in Russia, and sailing ships at sea.

Blaeu's map of Europe is available in numerous coloured editions that tell a story of shifting opinion on the political affiliation of the Nordkalotten region. Most versions checked for this paper are characterized by coloured lines bordering the nations, with colour shading on the decorations only. There is no correspondence between them when it comes to which nation is marked with which colour, with the exception of Sweden, which on most editions is bordered with pink coloured lines. In some versions of the map, the pink colour indicates that Swedish territory extends all the way to the sea in the north (Fig. 4).¹¹¹ In other versions, much of north-western Norway is also coloured as a Swedish possession. At this time, Sweden's political power and territorial extent were at their peak. As the third-largest country in Europe, its ambitions were reflected on these maps. But there are also versions indicating that Norway was in possession of the coast all the way as far as the Kola peninsula, bordered by a blue coloured line. Thus, the borderline dispute took place both on maps and in politics.

To gain information about how to colour different regions, the colourists could rely on reports from seafarers and explorers with knowledge of the area in question. The colourists may also have been instructed by their sovereigns to depict a certain – de facto or desired – political affiliation, or they simply copied information from previous maps. In the time before printed colours, certain knowledge about when a black-and-white original was coloured is

¹¹⁰ Blaeu, Willem Janszoon. 1635. *Suecia, Dania et Norvegia, Regna Europae Septentrionalis*. Accessed 1 March 2021. <https://www.raremaps.com/gallery/detail/52989/suecia-dania-et-norvegia-regna-europae-septentrionalis-blaeu>

¹¹¹ Blaeu, Guilielmo. 1630. *Europa recens descripta*. University of Amsterdam. Accessed 22 March 2021. <https://www.uvaerfgoed.nl/beeldbank/xview?identificer=hdl:11245/3.1753#page/0>

difficult to find. Hence there might have been a certain time span between the original map construction and its colouring, and both political as well as social context could also have changed.

5.5 Homann's map of Russia from c. 1707

In the eighteenth century, the map companies in Amsterdam lost their influence on the map market. Now new companies were established, especially in Germany. One of the most successful companies was that of Johann Baptist Homann in Nuremberg. Homann also published maps showing the Finnmark-region. I will demonstrate how the region was coloured differently on different copies of the map '*Generalis Totius Imperii Russorum Novissima Tabula*' (*The latest map of the whole Russian Empire*).¹¹²

After the Great Northern War (1700–1721), Sweden lost much of its power and was forced to cede its eastern provinces, among them Estonia and Livonia, to Russia.¹¹³ In 1703, Tsar Peter the Great (1672–1725) had founded a new capital, Saint Petersburg, heavily influenced by European culture and architecture. He invited many foreign scientists and artisans to Russia and spent much time in Western Europe himself. The Russian Geographical Society (RGS) holds a number of historic maps of Russia made by Johann Baptist Homann, including the one examined here.

The original black-and-white map has a dashed line representing Russia's western border. Intriguingly, for a map purportedly dated 1707, the western boundary of Russia in south-east Finland is approximately that established in 1743 and in the case of Estonia and Livonia that formally established in 1721 after Sweden's defeat in the Great Northern War. It may signify areas occupied by Russia in the early years of the war. There is no border demarcation between Norway and Sweden. 'Lapponia' is written across Nordkalotten, subdivided into Norwegian, Swedish and Muscovite (Russian) areas. The line of hills representing the watershed was considered the border area between Norwegian and Swedish Lapponia. There are numerous coloured versions of this map in archives around the world. Some of them have a slightly different title, where the word 'Russorum' (of the Russians) from the

¹¹² Johann Baptist Homann. 1707. *Generalis Totius Imperii Russorum Novissima Tabula (1707)*. Russian Geographical Society. Accessed 19 March 2021. <http://geoportal.rgo.ru/record/75>

¹¹³ Ehrensvärd 2019: 218.

black-and-white original is changed to 'Moscovitici' (of the Muscovites).¹¹⁴ They are otherwise identical, it is just the cartouche that is changed. The maps with Moscovitici are older, firstly printed between 1702 and 1707, then it changed into Russorum between 1716 and 1724.¹¹⁵ Homann also had different copperplates from one map, and this could also explain why there are small changes.¹¹⁶

On one of the maps from the Russian Geographic Society we examined, the Russian regions are marked with full colour shading and stronger lines around each entity. Territories outside Russia are only coloured along the borderlines. This supports the assumption that this was a map coloured by Russian interests with a clear focus on the Russian empire. As Homann did not mark any border between Norway and Sweden on his black-and-white original map, it is left to the colourist to mark this line. On one coloured edition, this is done by bordering Norway with a red line, and an equivalent blue line for Swedish territory. The dividing line between the two countries is placed slightly to the west, and a small part of Norwegian Lapland falls within Sweden. As for the border with Russia, the colourist follows Homann's original black dotted line.

A second coloured version of the map affords much more territory to Norway, which appears to include Swedish Lapponia.¹¹⁷ There is no consistency regarding the choice of colours between this and the previously mentioned version, except that Kola is coloured green on both. In this version, Norway is bordered by a yellow line and Sweden by a pink one and the dividing line between the two countries is placed in the middle of the Gulf of Bothnia, leaving no territory east of this for Sweden. The different coloured versions leave different impressions of sovereignty in the area, but unfortunately there is no information about the colourists or their motives. However, the colouring in the last of these maps is highly inaccurate, for example the south-eastern border of Finland in the Ladoga-Onega regions is shown too far south.

The following table compares a few of the variants of Homann's map of Russia:

¹¹⁴ Homann, Johann B. 1707. *Generalis Totius Imperii Moscovitici Novissima Tabula*. Russian Geographical Society. Accessed 19 March 2021. <http://geoportal.rgo.ru/record/75>

¹¹⁵ Sandler, Christian, 1886. Johann Baptista Homann. Ein Beitrag zur Geschichte der Kartographie, in: *Zeitschrift für Gesellschaft für Erdkunde zu Berlin* 21, 1886, 328–84. Accessed 1 October 2021. https://archive.org/details/bub_gb_nH4LAAAAYAAI/page/n365

¹¹⁶ Heinz 2002: 98.

¹¹⁷ Homann, Johann B. 1707. *Generalis Totius Imperii Moscovitici Novissima Tabula*. Russian Geographical Society. Accessed 19 March 2021. <http://geoportal.rgo.ru/record/1267>

Origin of coloured map	Norway bordered by:	Sweden bordered by:	Russia bordered by:	Coloured borderline positioning between Norway and Sweden
Russian Geographical Society no. 75 ¹¹⁸	Red	Blue	Full shading. Kola peninsula green	Slightly to the west, part of Norwegian Lapland falls within Sweden
Russian Geographical Society no 1267 ¹¹⁹	Yellow	Pink	Full shading, Kola peninsula green	To the east, Swedish Lapponia falls within Norway
Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Atlas Minor Ex XVIII ¹²⁰	Blue	Blue	Full shading, Kola peninsula green	No border marked between Norway and Sweden, depicted as one entity
Staats- und Universitätsbibliothek Göttingen ¹²¹	Yellow	Pink	Full shading, Kola peninsula green	To the east, Swedish Lapponia falls within Norway

¹¹⁸ Homann, Johann B. 1707. *Generalis Totius Imperii Moscovitici Novissima Tabula*. Russian Geographical Society. Accessed 19 March 2021. <http://geoportal.rgo.ru/record/75>

¹¹⁹ Homann, Johann B. 1707. *Generalis Totius Imperii Moscovitici Novissima Tabula*. Russian Geographical Society. Accessed 19 March 2021. <http://geoportal.rgo.ru/record/1267>

¹²⁰ Homann, Johann B. 1707. *Generalis Totius Imperii Russorum Novissima Tabula*. Ibero-Amerikanisches Institut. Preussischer Kulturbesitz. Accessed 1 Oktober 2021. https://digital.iai.spk-berlin.de/viewer/resolver?identifier=IAI0000490000000000&field=MD_IAIPURL

¹²¹ Homann, Johann B. 1707. *Generalis Totius Imperii Moscovitici Novissima Tabula*. SUB Göttingen. Accessed 1 October 2021. <https://gdz.sub.uni-goettingen.de/id/PPN352832177?tifv={%22panX%22:0.185,%22panY%22:0.273,%22view%22:%22info%22,%22zoom%22:1.725}>

Harvard Map Collection ¹²²	Orange, with pale orange shading	Green, with pale green shading	Full shading, Kola peninsula green	Far to the west, part of Norwegian Lapland falls within Sweden
Niedersächsische Landesbibliothek Hannover ¹²³	Orange, with pale orange shading	Turquoise, with no (or very pale) shading	Full shading, Kola peninsula green	Slightly to the west, part of Norwegian Lapland falls within Sweden

5.6 Woodbridge's Political map of Europe from 1824–1845

A nineteenth century map by the American teacher and geographer William Canning Woodbridge (1794–1845) is the last map reviewed for this paper. It is included to demonstrate that even after the borders in Scandinavia had been formally settled, the political affiliation of the northern region was depicted differently on maps through the use of colouring.

Woodbridge was strongly engaged in maps as a didactic instrument.¹²⁴ He wrote textbooks on geography, and constructed maps which he published in school atlases. One of these maps is named 'Political map of Europe – adapted to Woodbridge's Geography'. It is a map depicting the political division of Europe in the first half of the nineteenth century, and exists in numerous versions with hand colouring. Four of them are explored here, and in contrast to the previous examined maps, all four versions of Woodbridge's map have a striking consistency regarding the choice of colours. Norway is marked with a pink dye and Sweden

¹²² Homann, Johann B. 1707. *Generalis Totius Imperii Russorum Novissima Tabula*. Harvard University, Harvard Map Collection. Accessed 1 October 2021.

<https://iif.lib.harvard.edu/manifests/view/ids:54373398>

¹²³ Homann, Johann B. 1707. *Generalis Totius Imperii Russorum Novissima Tabula*. Niedersächsische Landesbibliothek. Accessed 1 Oktober 2021. http://digitale-sammlungen.gwlb.de/index.php?id=6&tx_dlf%5Bid%5D=4412&tx_dlf%5Bpage%5D=1

¹²⁴ Princeton University Library, n.d. *William C. Woodbridge, 1794–1845*. Accessed 2 March 2021.

https://library.princeton.edu/visual_materials/maps/websites/thematic-maps/quantitative/meteorology/meteorology.html; Alcott, William A. 1858: 57. William Channing Woodbridge. *The American Journal of Education*, 5: 51–64. Accessed 2 March 2021.

https://books.google.no/books?id=mjLAAAAMAAI&pg=PA51&redir_esc=y#v=onepage&q&f=false

with green. Finland is coloured yellow like Russia, being part of the Russian Empire at this period.

One version is dated 1845 (Fig. 5).¹²⁵ Here, the yellow colouring indicates that the eastern part of Finnmark is considered part of Finland and Russia. In an 1824 edition, the division between Norway and its neighbouring countries is even more marked.¹²⁶ The colouring of this map is different from the later edition, with only coloured lines framing the countries, but still with the same depiction of sovereignty in Nordkalotten. The mistaken depiction of the political division is probably due to ignorance rather than done on purpose, especially considering that this version was made before the boundary between Norway and Russia was finally established in 1826.

There is also an 1843 version of the same map, where the use of colour illustrates a completely different political situation.¹²⁷ In contrast to the two other versions, the 1843 edition's green coloured Sweden extends all the way to the Barents Sea, and the large Varanger peninsula in eastern Finnmark appears as a Swedish territory separating Norway and Russia. In opposition to this map is an 1837 version, where the pink colour of Norwegian sovereignty covers both modern-day Norway and also part of what is now Russia and Finland.¹²⁸

6. Summary of findings and discussion

The findings demonstrate a huge variation in the colouring of black-and-white original maps, both in terms of the technical application (lines versus shading, boundary lines or not), the choice of colour for each individual nation, and not least regarding the colours' depiction of territorial possession. The survey gives a picture of a wide variety of coloured copies of the original maps, especially when it comes to the Dutch maps of Ortelius and Blaeu we

¹²⁵ Woodbridge, William C. 1845. Political map of Europe. David Rumsey Collection, University of Stanford, USA. Accessed 10 January 2021.

https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~219310~5504570?qvq=w4s%3A%2Fwhat%2FAtlas%2BMap%2Fwhere%2FEurope%2Fwhen%2F1845%3Bsort%3APub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No%3Blc%3ARUMSEY~8~1&mi=3&trs=20

¹²⁶ Woodbridge, 1824-map of Europe.

<https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~29540~1130584:Europe->

¹²⁷ Woodbridge, 1843-map of Europe. <https://www.amazon.com/Historic-Map-Political-Woodbridges-Geography/dp/B08D7ZBZ31?th=1>

¹²⁸ Woodbridge, 1837-map of Europe.

<https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~28881~11201:Geographical-&-statistical-map-of-E>

examined. This result accords with the statement of Verdier and Besse that maps were slipping through the fingers of the original cartographer, leaving the end product to the colourists and their possible motives.¹²⁹

In line with Riedenauer's descriptions of colouring as a tool to highlight the rulers' de facto or aspired realm, colouring appears to have been used on some of the maps of the Arctic parts of Norway, Sweden/Finland and Russia to demonstrate sovereignty.¹³⁰ The findings support the view of Tyner regarding persuasive map design, as several of the maps examined may have been initiated partly to influence the perception of possession in the Nordkalotten region.¹³¹ In this way, the results suggest that there might have been certain territorial ambitions behind the colouring, in line with Monmonier's research on colours as a cartographic tool.¹³² However, documenting this is a challenge, not least because the colourists did not sign their work.

Some of the maps were dedicated by the cartographer to their king, like Anders Bure's map *Orbis Arctoi*. Maps could also be made on direct orders from the king, like the map by Simon von Salingen, writing explicitly 'Lapland, part of Norway' across the map on behalf of the Danish-Norwegian king. Van Linschoten's map is also notable, as even the black-and-white original has the Norwegian coat of arms covering a large part of Nordkalotten, clearly suggesting Norwegian sovereignty in this region. There are also indications that Homann's map of Russia was made in close collaboration with the Russian emperor, although this does not necessarily have any meaning for the colouring of the copies examined. A power motive regarding territoriality may also exist behind maps initiated by a nation's state administration, like Knoff's 1749 manuscript map of Finnmark, constructed as part of the demarcation preparations between Norway and Sweden.

It can be difficult to assess the extent to which the use of colour on the maps promoted conscious political ambitions. In some cases, inaccuracies on older maps may rather have been copied without further reflection. Nevertheless, in general, the findings seem to indicate that the maps made for the Swedish king (like Anders Bure's maps Lapponia from 1611 and *Orbis Arctoi* from 1626) or for the Danish-Norwegian king (like Simon von Salingen's map of Scandinavia from 1601) reflected the way these sovereigns saw the

¹²⁹ Verdier and Besse 2019: 297.

¹³⁰ Riedenauer 1977: 927.

¹³¹ Tyner 2018: 444.

¹³² Monmonier 1996: 170.

northern parts of their kingdoms. Regarding some of them, other sources confirm the picture depicted in the map about the ruler's territorial ambitions. For instance, Mead comments upon von Salingen's map that it was initiated by the Danish-Norwegian king 'to assert his (territorial) rights', and that 'it served to spur the Swedish crown to competitive cartographic endeavour'.¹³³

Larcher and Piovan have demonstrated that limits of jurisdiction and political dominance are underlined through cartography.¹³⁴ In accordance with this, the empirical material in the present paper reveals that some cartographers drew national borders that were not yet settled politically, like Bure on his map Lapponia. This relates to Branch and his thoughts on cartography as a driving force for the development of territorial sovereignty.¹³⁵ Another important point of this paper is the Swedish issue of supremacy and frontier disputes with the neighbouring countries. A significant finding is that several maps aimed to validate Sweden's demand for access to the sea in the north, expressed through the instrument of colouring. As we have seen, one of these is a version of Willem Blaeu's 1630 map of Europe, and another is his 1635 version of Bure's *Orbis Arctoi*. By the use of coloured lines in Finnmark (pink on his 1630 map, yellow on his 1635 map), an unknown colourist gave the impression of Sweden belonging to this region cartographically, making the map a good example of cartography as instrument in a conflict of hegemony. The use of such maps has not been investigated so far.

An important aspect is the potential of maps to spread perceptions of sovereignty in the way they depict the world. The habit of copying other cartographers' mistakes has been mentioned, as has the maps intended for teaching purposes. As a powerful example, van der Linde has explained the large production of Johann Hübner's school atlases and his cooperation with the cartographer Homann.¹³⁶ Their coloured maps determined the new generations' view of the world for decades, as did other maps made for teaching purposes. The vast distribution of these maps, both physically as well as influentially, also ensured them power as political tools. A key finding is that the potential cartographic mistakes in the school maps, like the incorrect depiction of Finnmark in the map by Woodbridge we examined, consequently could have long-lasting and widespread influence. This contributed

¹³³ Mead 2006: 1793.

¹³⁴ Larcher and Piovan 2018: 119.

¹³⁵ Branch 2013: 17.

¹³⁶ Benjamin van der Linde. 2020. Information to author in e-mail, 9 November 2020.

to erroneous perceptions of Norway's extent in general and the political affiliation of Eastern Finnmark in particular up until relatively recent times.

7. Conclusion

The aim of this paper has been to present new empirical knowledge on the subject of cartography as a tool for territorial control in the Arctic parts of the Nordic countries, including the use of colour on historical maps. We have seen how sovereignty over Nordkalotten was gradually determined in the sixteenth to nineteenth century, and that there was a tug of war regarding territorial claims. The results demonstrate how maps were a part of the strategy to gain dominion of the region.

The examination of a varied selection of maps, over a considerable span of time and by cartographers representing different nations, gives insight into how political sovereignty and territorial ambitions were reflected in the maps. The maps examined were chosen as they were examples of printed black-and-white maps of the Nordkalotten region with several (in some cases numerous) differently coloured copies, representing varied perceptions of the region's political affiliation. The paper presents a picture of a vast Arctic region of common use, where trade systems and indigenous groups overlapped, impervious to political administrative demarcations. This permeable system facilitated a battle for territory, resources and tax revenue, in which cartography played an important role. The technological level of cartography during the study period, with several hand-coloured copies of black-and-white originals, enabled different rulers to present a depiction of possession in Nordkalotten that suited their purpose. One example is Sweden's possible attempts to document its access to the coast in the North. There is no direct evidence that the colouring of copies of Ortelius' and Jan Blaeu's maps was undertaken in Sweden or Denmark or ordered by the Swedish or Danish authorities. However, it is plausible that the publishers would adapt the colouring of the maps to the target market.

We have also seen that on several maps, even from as late as the mid nineteenth century, the eastern part of Finnmark is depicted as being under Finnish, Swedish or Russian sovereignty. The reason might have been ignorance, or repetition of previous cartographic errors, or maybe the cartographer or his patron intentionally depicted the affiliation in this way. No matter the cartographical motive, all these maps did probably have political effects,

contributing to the struggle for sovereignty in Nordkalotten. The findings indicate that the national states in the northern region used cartography as a political instrument up to a point, to demonstrate their territorial possessions and their ambitions.

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Figures

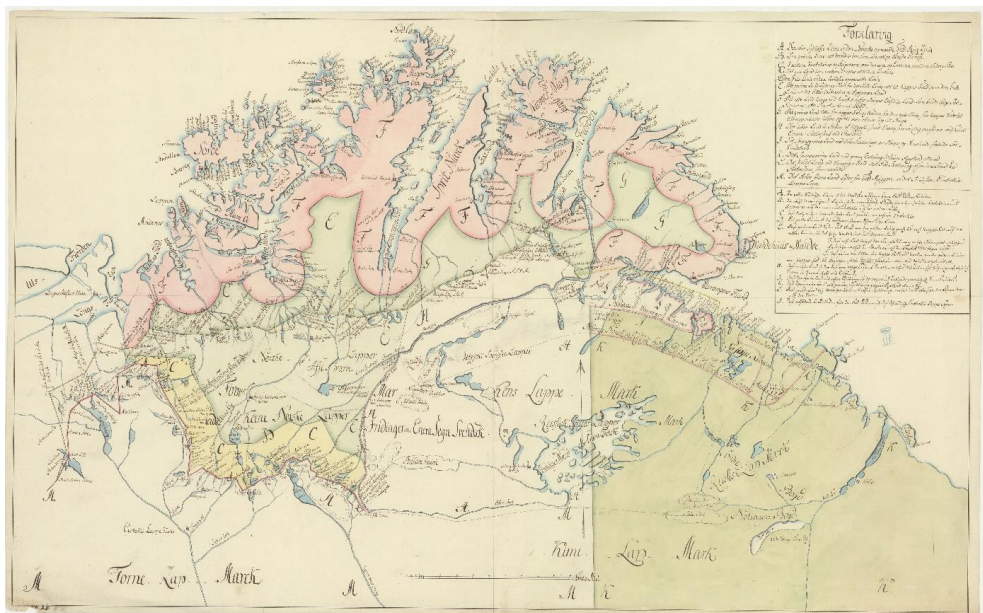


Figure 1. Knoff, Thomas H.H. 1749. Map of the distribution of land areas in Finnmark and surroundings, as part of the negotiations with Sweden on the national boundary. Source: HM The Queen's Reference Library, King's Collection, Copenhagen, Denmark.



Figure 2: Van Linschoten, Jan H. 1594. Map of the Nordic countries (extract). Source: National Library of Norway, signatur QKart 1641.IB. NO-NB_KRT_00679.



Figure 3: Blaeu, Willem. 1635. Based on Bure, Anders. 1626. Orbis Arctoi. Source: Van Mingroot, Erik and van Ermen, Eduard, 1988, cover page.



Figure 4: Blaeuw, Willem (Guilielmo). 1630. *Evropa recens descripta* (extract). Source: Allard Pierson Collections, University of Amsterdam, The Netherlands.



Figure 5: Woodbridge, William C. 1845. Political map of Europe (extract). Source: David Rumsey Collection, University of Stanford, USA.

WAVING THE MAP FOR NATIONAL IDENTITY: HOW CARTOGRAPHY IN NORWAY AND SWEDEN WAS USED AS A NATION-BUILDING TOOL IN THE EIGHTEENTH AND NINETEENTH CENTURIES

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With 5 figures and 1 table

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Summary: Cartography has for centuries been used as a political instrument to support national pride, impact and influence, whether through use of a national prime meridian or local toponyms, the emphasising of the country's extent through colour, or the underlining and even distorting of its position and size through projection. In Scandinavia, the eighteenth and nineteenth centuries were times of upheaval, during which regions changed political affiliation and nations formed shifting political unions. Norway had not been an independent nation since 1380, but by the turn of the nineteenth century, Norwegian national consciousness was emerging, in parallel with the rise of ideas about the national state in the rest of Europe. The purpose of this paper is to examine whether and how the rising focus on national identity in Norway was nurtured through cartography during the final decades of the union with Denmark (1380-1814) and the first decades of the new union with Sweden from 1814 (-1905). A further aim has been to consider how Sweden, as the senior union partner, might similarly have used cartography to keep the union together as a unity, in opposition to the Norwegian national self-assertion. A selection of Scandinavian maps from the late eighteenth century and throughout the nineteenth century have been analysed with a focus on cartographic elements with potential impact on national identity. The main results indicate that both Norwegian and Swedish maps of that time may have been used as instruments of political influence. The use of cartographic elements on the analysed maps in general seem to have strengthened Swedish hegemony on one side and Norwegian nationalism on the other side, thus reinforcing the political division of Scandinavia still seen today.

Zusammenfassung: Kartographie wurde jahrhundertlang als politisches Instrument eingesetzt, um den Nationalstolz und die Wirkung und den Einfluss zu unterstützen, sei es durch die Verwendung eines nationalen Nullmeridians oder lokaler Toponyme, die Hervorhebung der Ausdehnung des Landes durch Farbe oder die Unterstreichung und sogar Verzerrung seiner Position und Größe durch die gewählte Projektion. In Skandinavien waren das achtzehnte und neunzehnte Jahrhundert Zeiten des Umbruchs, in denen Regionen ihre politische Zugehörigkeit wechselten und Nationen alternierende politische Zusammenschlüsse bildeten. Norwegen war seit 1380 keine unabhängige Nation mehr, aber um die Wende zum 19. Jahrhundert entwickelte sich ein norwegisches Nationalbewusstsein, parallel zum Aufkommen von Ideen über den Nationalstaat im übrigen Europa. In diesem Beitrag soll untersucht werden, ob und wie die zunehmende Konzentration auf die nationale Identität in Norwegen durch die Kartographie in den letzten Jahrzehnten der Union mit Dänemark (1380-1814) und in den ersten Jahrzehnten der neuen Union mit Schweden ab 1814 (-1905) gefördert wurde. Ein weiteres Ziel ist es, zu untersuchen, wie Schweden als dominierender Unionspartner die Kartographie in ähnlicher Weise genutzt haben könnte, um die Union als Einheit zusammenzuhalten, im Gegensatz zur norwegischen nationalen Selbstbehauptung. Eine Auswahl skandinavischer Karten aus dem späten 18. und dem gesamten 19. Jahrhundert wurde analysiert, wobei der Schwerpunkt auf kartographischen Elementen mit potenziellem Einfluss auf die nationale Identität lag. Die wichtigsten Ergebnisse deuten darauf hin, dass sowohl norwegische als auch schwedische Karten aus dieser Zeit als Instrumente der politischen Einflussnahme genutzt wurden. Die Verwendung kartographischer Elemente auf den untersuchten Karten scheint im Allgemeinen die schwedische Hegemonie auf der einen und den norwegischen Nationalismus auf der anderen Seite gestärkt zu haben, wodurch die politische Teilung Skandinaviens, wie sie heute noch besteht, verstärkt wurde.

Keywords: Cartography, map analysis, national consciousness, Norway, political geography, Scandinavia

1 Introduction

Maps are often perceived as an objective documentation of the World, which makes them highly influential. However, the depiction is a selective view of reality, reflecting the interests of the crea-

tor (SCHÜLER 2011). Discourses can be reinforced or concealed through cartographic elements like prime meridians, projection, borderlines, or colouring (EHRENSVÄRD 2006). Hence sovereigns may use cartography as a tool to construct a world view that serves their strategies (HARLEY 2001: 55-60).



STRANDBJERG (2010: 70) calls this the “‘performative power of maps’, that is, how maps are not only representing a geographical reality, but they are serving to shape this very reality.”

The Scandinavian peninsula is divided into the two modern nations of Norway and Sweden. The eighteenth and nineteenth centuries were times of political turmoil in the region, as Norway’s more than 400 year-long political union with Denmark ended with the surrender of Norway to Sweden in 1814 (BERG 2014). The last decades of the union with Denmark saw an awakening of national consciousness in Norway. This movement grew to new heights after the Norwegian hope of political independence was dashed by the 1814 union with Sweden.

The emerging Norwegian national pride faced the Swedish monarchy, which as the senior union partner aimed to assert its authority over the Scandinavian peninsula. Sweden’s efforts to unify Scandinavian cartography included a royal decree promoting a common union prime meridian, a significant cartographic element. In contrast, Norway asserted its national identity by maintaining its own prime meridian throughout the period of political union with Sweden.

The study period was a watershed in Norwegian cartography. The historical context was unique, with the transition from one political union to another. There was rapid technological development in surveying and cartography. This coincided with the transition from confidential, military mapping to public surveys and publicly available map series. Against this backdrop, this paper delves into the theory of cartographic elements and their potential influence, as well as conducting an empirical analysis of maps produced by different Scandinavian cartographers. The topic has gained new relevance today when we see political use of cartographical elements in an ongoing territorial conflict in Europe.

The aims of this paper are:

- to analyse how Norwegian nation-building in the late eighteenth and the early nineteenth century might have been reflected on maps of the period, through cartographic elements such as title, dedication, toponyms and others, and the implications this might have had on Norwegian political ambitions
- to analyse how elements on Swedish maps of Scandinavia from the same period might have reflected Sweden’s attempts to assert its authority over the Scandinavian peninsula.

Several of the maps analysed in this article have been presented earlier (e.g. in GINSBERG 2009, HARSSON & AANRUD 2016) but the political function of cartographic elements has not been subject to systematic analysis previously. The present article expands on studies initiated by the present author (LIEN 2020, LIEN & LUNDBERG 2022, LIEN in press) and examines in greater depth the ways in which different cartographic elements were used to promote the contrasting political objectives of Norway and Sweden. This contributes to new insights regarding the political power of maps in general, and within the Scandinavian context in particular.

2 The state-building function of cartography

The sovereign state system has its roots in late-medieval Europe (1300-1500), where the sovereign had ultimate authority over political, social, and economic matters within a territory (MURPHY 1996). Portraying their realms as identifiable units on maps was a means of legitimising the sovereigns’ territorial possessions (JONES 2003). Cartography has thus been a significant factor in the way the state visualizes its territory (ANDERSON 2016: 163-164). SEALE et al. (2004) argue that societies are reflected in their maps. STRANDBJERG (2010: 69) claims that “the cartographic transition that took off during the European Renaissance provided the spatial conditions for ... defining sovereignty in territorial terms.” Helped by improved cartography, the Westphalian Treaty of 1648 led to an increasing number of state boundaries on maps. According to FOUCAULT (2001), knowledge and power are closely related, and mighty sovereigns mapped their territory to demonstrate possession (BLACK 1997). This section will explore this further, focusing on the potential of cartography as a facilitator for state-building and national pride.

The concept ‘nation’ is defined by ANDERSON (2016: 6-7) as an independent area limited by clear borders. He adds that a nation is characterized by being an “imagined political community,” where the inhabitants are tied together by invisible bonds. SMITH (1993) describes how shared ethnic origins, language and religion can constitute a nation, even without a defined territory, like for instance the Kurds or the Basques. He explains ‘national identity’ as a sense of belonging and loyalty to a nation, while the concept ‘nationalism’ is interpreted as a result of traditions, myths and symbols. He further states that the “healthy sense of national identity”

can be transformed into destructive nationalism. ANDERSON (2016: 8) reminds us that even if it today is common to regard nationalism as negative and connected with racism, it is also an expression of a profound love for one's fatherland and its values for which many are willing to die.

BRANCH (2013: 91) describes how state identity became increasingly territorial as cartographic boundaries were demarcated on the ground. TAYLOR (1994) regards territory as a spatial 'container', filled with state functions and social relations that constitute the modern nation-state. As the concept of nation-states evolved, national consciousness emerged with an increasing tendency to focus on the state itself as the core of identity (ANDERSON 2016). Similarly, with developments in cartography, emerging nationalism was expressed through the mapping of the state's territory (BERG 2005: 183, BERG 2009: 95). Some nations even appeared on maps before being unified politically (SCHNEIDER 2007: 88, BRANCH 2013: 81). To promote national ideas, schools and mass media can be crucial, and formation of geographical notions has often been stimulated through maps intended for educational use (TAYLOR 1994, SCHNEIDER 2007: 9). The role of the school system in the nation-building process has been examined by among others BARON (2022). In general, school wall-maps and atlases were powerful tools in many countries to support desired agendas, due to their considerable distribution and their power of influence on the new generations.

Another aspect of maps as nation-building instruments relates to controlling one's own narrative (LOSANG 2020). ANDERSON (2016) claims that decolonization was driven partly by cartography, as national maps were published immediately after liberation to emphasise ownership of one's territory and to seize control over the map as political symbol.

3 Historical framework and emerging nationalism

This section will give a brief overview of the historical backdrop for the study area with emphasis on Norway, as well as a brief note on the cultural historical period National Romanticism, with a focus on national identity.

After the Viking Age, the kingdom of Norway was an independent country for several hundred years, with an expanded realm that in periods included Iceland as well as Greenland. However, the pandemic Black Death in the middle fourteenth century

critically weakened Norway as more than half the population died (AASTORP 2004, GUSTAFSSON 2017: 66). From 1380, Norway was in a political union with Denmark, which lasted more than four centuries. During this period, there were numerous controversies with Sweden, and large regions changed affiliation back and forth. In the Arctic part of Scandinavia there were ambiguous boundaries and a vast region of common use, which contributed to the disputed sovereignty. The national boundary between Norway and Sweden was not agreed upon until 1751, and the Norwegian border with Russia as late as 1826.

In the late eighteenth and early nineteenth centuries, the relationship between the union Denmark-Norway and their neighbour Sweden was turbulent. The Borders Survey of Norway was established in 1773 to map the important areas along the boundary with Sweden (HARSSON & AANRUD 2016: 16-17). The same period saw an awakening of national consciousness across Europe. In Norway there was an increasing demand for its own national institutions such as a university, which was established in Oslo in 1811 (COLLETT 2009). Another important factor was the establishment of The Royal Society for Norwegian Development in 1809, as "an ideological movement that pointed to a strong Norwegian identity and Norwegian independence" (DØRUM 2015: 40). To rebuild a new Norwegian national identity, Norway's heyday in the Middle Ages was also brought into focus, based on the sagas on the Norwegian kings. In line with the National Romanticism of the time, writers, painters and composers were inspired by the Norwegian nature (FALNES 1933). The Norwegian language, strongly influenced by Danish after the 400-year union, was Norwegianised with words from dialects and Old Norse (VIKØR 2010). Maps with old place names, or toponyms constructed to support Norwegian national identity, such as Trollheimen (Home of the Trolls), were widely distributed, and some of the maps also had elaborate decorations inspired by typical Norwegian landscapes or activities.

Napoleon conquered large parts of Europe in the late eighteenth century. His final defeat had considerable consequences for the map of Europe (BREGNSBO 2009). In 1814, Denmark, on the losing side, had to cede Norway to Sweden, on the winning side. This was an encouragement for Sweden, which in 1809 had lost Finland (the latter being subject to Sweden since the twelfth century). The 1814 transition also fulfilled the Swedish strategy regarding the conquest of Norway, as, according to STEEN (1951:

13), just “a glance at the map was sufficient... do document that the two countries by nature were destined to form one unit.” However, Norway saw an opportunity for independence, and managed to establish a Norwegian Constitution, signed 17 May (1814), which is still the National Day. Yet, after a short war with Sweden, Norway had to accept the new union with its former enemy (Sweden) (STEEN 1951: 285).

The building of Norwegian national identity continued within the new union, and a national cartography was one of the tools (BERG 2017: 196). This was met with resistance from Sweden. Cartography can be used to spread new ideas by presenting them as reality on maps, and Karl Johan actively used his cartographers to impose his image of Scandinavian unity on Norwegians (BERG 2009). However, among many Norwegians this was considered an attempt to undermine the country’s position as an independent union partner. This was despite the fact that even leading Norwegians wanted a common state with Sweden, exemplified with certain social circles in Eastern Norway having secret contacts with the Swedish king already at the end of the eighteenth century, when Norway was still in union with Denmark (GUSTAFSSON 2017: 140). Even during the union with Sweden in the nineteenth century, leading Norwegians supported Scandinavism, among them the writer Bjørnstjerne Bjørnson. On the Swedish side, also Karl Johan’s successors on the Swedish throne, King Oscar I from 1844 and King Carl XV from 1859, supported Scandinavism, a pan-Scandinavian idea that included Denmark. (BARTON 2003: 60, HEMSTAD 2018b).

Both in Norway and in Sweden the school system had an important role in the process of creating a Norwegian national identity, or a Scandinavian identity, respectively. In Norway, this increased with new school laws in 1827 and 1860 (HEMSTAD 2018b: 117-118). Knowledge presented on maps became compulsory, reinforcing the importance of educational cartography (BERG 2017: 199). On the other side of the boundary, Sweden used the school system to promote their concept of Scandinavism. Cartography was central in this process, and “the purpose was ... to plant the idea of Scandinavia’s unity in the head of the child” (HEMSTAD 2018b: 125). However, towards the end of the nineteenth century, Sweden gradually renounced the idea of Scandinavian unity, and the political union with Norway was dissolved relatively peacefully in 1905. Since then, Norway has been an independent kingdom.

4 Sources and analytical procedure

The point of departure for this study is a selection of maps from GINSBERG’s cartobibliography *Maps and Mapping of Norway 1602-1855* (GINSBERG 2009). This extensive collection of maps depicts Norway during an important period both politically and cartographically. However, the cartographic elements are generally not analysed by GINSBERG. He presents the maps in detail as historical objects, and as such they form an excellent starting point for an in-depth examination. Further maps have been selected from the National Library of Norway’s collection and from the digital archives of the Norwegian Mapping Authority. An examination of additional maps from Swedish archives might nuance the argument, but this lies beyond the scope of this article.

The aim has been to examine relatively few maps systematically and in detail. The analysed maps have been selected to give a broad picture of the situation in the study period from the Norwegian perspective. They are all printed maps, produced by cartographers working within Scandinavia. The selection comprises five Norwegian and four Swedish maps, chosen to ensure a certain representativeness regarding publication date, size, scale, and cartographer’s nationality (Tab. 1).

According to MONMONIER (1991), nations are symbolized by maps, and cartographic elements can emphasise nationalistic traits. Hence, details on the map can be used to gain geopolitical influence (HEMSTAD 2018b: 122). The following cartographic elements may have nation-building potential:

Map title: The title of the map may express whether the cartographer considered the depicted area to constitute a common entity or separate countries, or in this case indicating Scandinavian unity or desire for national independence. A subtitle may also provide information on financial or other support for the construction of the map.

Dedication: A dedication may express a close connection to the authorities or other prominent persons, demonstrating for instance whether the map was made on the order of a king or other ruling authority.

Decorations: The artistic maps of the seventeenth century with depiction of fantastic beasts both at sea and at land gradually gave way to a more scientific based cartography (VAN MINGROOT & VAN ERMEN 1988, EHRENSVÄRD 2006). Consequently, most maps from the study period did not have decorations, although some cartographers illustrat-

Tab. 1: Overview of the analysed maps

No.	Cartographer	Nation	Year	Title	Dedication	Border	Toponyms	Prime meridian	Other	Scale, c.
1	G. Schöningh	N	1779	Ancient Norway	-	Clear	Norse	-	Saga era	?
2	C.G. Forsell	S	1815/ 1826	Sweden and Norway or Scandinavia	Royal	Faint	DK-N	Ferro	-	1: 500,000
3	O.J. Hagelstam	S	1820	Sweden and Norway	Royal	Faint	DK-N	Ferro	Abundant information	
4	C.B. Roosen	N	1829	Norway	-	Clear	DK-N	Ferro (and Copenhagen and Christiania)	-	1: 200,000
5	Whitlock	S	1837	Scandinavia	-	Faint	DK-N	Ferro	Infra-structure	
6	A. Vibe and N.C. Irgens	N	1844	Christiania	Prof. Hansteen	-	DK-N	Christiania		1: 25,000
7	P.A. Munch	N	1845	Norway	-	Clear	Norwegian	Ferro	Education. Shape. Abundant information	1: 1 800,000 (1:3 600,000)
8	C.B. Roosen	N	1848 (-45)	Southern part of the Kingdom of Norway (Noregr)	-	Clear	DK-N (Norse)	Ferro (and Christiania)	Independence dating. City maps	1: 1 000,000
9	T.A. von Mentzer	S	1872	Sweden and Norway	-	Clear	DK-N	Ferro	Education	

ed their maps with motives connected to national identity. While pictorial elements on maps may in some cases represent the visual culture of nationalism, most of the selected maps in this study lacked such elements.

Borders: In medieval Europe, wars and shifting alliances led to frequent border revisions. The 1648 Peace of Westphalia contributed to a profound transition towards rigid boundaries (MURPHY 1996). This was based on a consensus that the sovereign states had absolute power within their own territory (TAYLOR 1994). The eighteenth century was thus a ‘century of delimitation’, with border treaties between many European nations and demarcation of borderlines on maps (NORDMAN 2020: 163). Consequently, maps became decisive for the formation of nations (SCHNEIDER 2007: 23). In Scandinavia, the 1751 Border Treaty between Norway and Sweden was the result of a long period of negotiations (BRISA 2014). Certain stretches

of the border were particularly controversial, and historical maps depicting different borderline positions were part of the evidence leading to the final agreement (LIEN & LUNDBERG 2022). According to BERG (2009: 91-92), the new established borderline was “gradually solidified as a consequence of the development of modern cartography.” As the cartographers continued to depict the physical borderline on the maps, the boundary became an identity marker (BERG 2005: 183). As a cartographic element in this study, borders could be marked on the map as a clear dividing line between Norway and Sweden as an indicator for Norwegian national identity, or more subtly, as a marker for Scandinavian unity.

Colouring: Printed maps in the mid-eighteenth century and for a century onwards were normally printed in black-and-white. Different copies of the same map could be hand-coloured by colourists representing different sovereigns (DELANO-SMITH 2007: 555). Colouring was frequently used to rep-

resent boundaries on the map (EHRENSVÄRD 2006: 68). Colour was also used to identify and emphasise political units, and as such, could be a tool to depict the Scandinavian peninsula as an entity or as divided into two separate nations (BRANCH 2013: 80). Different coloured versions of a particular map could depict territorial distribution in very divergent ways, and consequently function as a political instrument (BRISA 2014). One example is how maps from Arctic parts of Northern Europe were coloured differently. During the sixteenth to nineteenth centuries, sovereigns used cartography to influence political affiliations in this region, ordering maps with colouring that supported their ambitions (LIEN in press). However, documenting this is a challenge, because, among other factors, the colourists did not sign their work. As an example, the National Library of Norway has a large number of coloured historical maps in its collections but lacks information on the name or nationality of the colourists.

Toponyms: The use of place names, or ‘toponyms’, can encourage national self-esteem (KEATES 1996). An example is the 1507 world map that first featured the name ‘America’ (MISSINNE 2015). Its significance for American patriotism and desire for independence has led to it being called ‘America’s birth certificate’ (DALRYMPLE 2001, SCHNEIDER 2007: 131).

Place names can be “expressions of domination and power relations”, and cartographers often behaved “like language imperialists” (SCHNEIDER 2007: 9). As new territories were conquered, new names were given to the defeated areas, demonstrated on the maps. Quite often, a sovereign’s culture was imposed upon the conquered land, like the naming of New York by the British and New Holland (Australia) by the Dutch. Later, liberated colonies wanting to regain symbolic control of their own territory have used toponyms as a tool, as part of “the cartographic language of a rising nation” (CHLOUPEK 2019). Toponyms on maps still have political power. A recent example is how Russia demonstrated territorial claim in their 2014 invasion of the Ukrainian peninsula of Crimea, by forcing Google Maps to use Russian toponyms in the occupied area (BJØRNSTAD & HENDEN 2016). Hence, cartography added legitimacy to the Russian annexation. These examples demonstrate how national identity and language are closely connected. However, after Norway’s 400 years’ union with Denmark, the old Norse tongue was no longer in use. Norse was spoken in Norway (and Iceland) in the Middle Ages, a period when Norway was an

independent kingdom. During and partly after the union with Denmark, Danish was the common language among Norwegian officials and members of the bourgeoisie, and many toponyms had for centuries been variants of Danish (SANDVIK 1983: 21). As part of the Norwegian nation-building project, a political ambition was to re-establish Norwegian toponyms. Several Norwegian cartographers followed up this initiative, alluding to the independence of the Saga age (BARTON 2003: 96).

Prime meridian: The maps from the study period could display the use of a Norwegian-based meridian, common union meridian, Swedish meridian, or international meridian. The nation-building function of a cartographic element such as a prime meridian is illustrated by the dispute between France and Britain over the global prime meridian. During this process, both countries aimed to underline their nation’s supremacy by claiming the ‘right’ to this important line of zero degrees longitude (HIGGITT & DOLAN 2009). The ‘triumph’ of Greenwich as the international prime meridian after the decisive conference in 1884 was, according to WITHERS (2017: 6), “a victory for British ... imperialism ... and ... power.” Similarly, the newly independent United States of America in the late eighteenth and early nineteenth centuries established an American prime meridian through Washington, D.C. (EDNEY 1994). In Norway, an abundance of local prime meridians was replaced in 1779 by a national meridian through the fortress of Kongsvinger close to the Swedish border. During the following century, it was gradually replaced by a meridian established in 1847 through the Norwegian capital (today’s Oslo, named Christiania/Kristiania from 1625 to 1925), which proved resistant against the Swedish decrees on a common union prime meridian (LIEN 2020).

Other elements: Other cartographic elements with a potential for supporting national self-esteem could be information about the cartographer’s nationality, or map symbols emphasising important infrastructure, industries, settlements or fortresses.

5 Map analysis

In this section, the theoretical ideas presented hitherto will be grounded in empirical material through a presentation of a selection of maps and a comprehensive examination of chosen cartographic elements. All maps are from the nation-building period spanning from the latter years of the political union with Denmark in the late eighteenth cen-

tury, through 1814 and the new political union with Sweden, and to the end of the nineteenth century.

5.1 G. Schöning's map of Southern Norway 1779

Gerhard Schöning (1722-1780) was Norwegian, and headmaster of the Cathedral School in Trondheim (BRICKA 1901: 451). In 1760 he was one of the three founders of the Royal Norwegian Society of Sciences and Letters (Det Kongelige Norske Videnskabers Selskab), still existing as Norway's oldest scientific institution, whose purpose was to support independent Norwegian research (ANDERSEN et al. 2009, GINSBERG 2009: 115). Schöning's considerable contributions to the fields of history and cartography were vital for Norwegian self-confidence (HOEM 1986: 104, GINSBERG 2009: 115). Schöning produced in 1779 a historical map of Norway after travelling extensively around Southern Norway, partly financed by the authorities (VELSAND 2018: 87) (Fig. 1). The map title translates as 'Ancient Norway depicted from the Göta river to Hålogaland'. Following the common practice at that time, the map has no coordinates and thus no prime meridian. Norway is depicted at the height of its power, in the pre-union period before 1397. Although a small part of Sweden is visible, Norway is clearly presented as its own nation, and the borderline with Sweden is distinctly marked. Ginsberg's version of the map is coloured (reproduced in GINSBERG 2009: 117), and it is worth noticing that the border is depicted prominently in pink and yellow.

The cartographic element of greatest interest is the use of toponyms. Schöning's map is loaded with place names in their original form, termed 'Norwegianisms'. Many of them are written as they were pronounced in Schöning's time by local people, while others are in their original Norse form. A typical example is the use of *-ur* endings, such as *Hardangur* instead of *Hardanger*. Another example is the region *Haurdaland*, whose official name in Schöning's time was the Danish form 'Søndre Bergenhus amt'. The use of local Norwegian place names instead of Danish names was a powerful political statement (HOEM 1986). It is noteworthy that the Norse forms of place names are also used on the Swedish side of the border.

According to LARSEN (2000), Schöning's work was important for the rebirth of the nation Norway. His map depicting the country as it was thought to

be in the Saga era can be regarded as a significant contribution to the nascent Norwegian national consciousness.

5.2 C. G. Forsell's map of Sweden and Norway or Scandinavia 1815-1826

Shortly after the 1814 transfer of Norway from Denmark to Sweden, Swedish officer Carl Gustaf Forsell (1783-1848) was put in charge of a new initiative to survey the union (HOEM 1986: 114). Both as officer and cartographer, he was loyal to the Swedish Crown Prince Karl Johan (king from 1818), and he was appointed the king's adjutant in 1811 (EKSTRAND 1903, HILDEBRAND 1966: 311). Forsell's manuscript map of the new union was presented personally to the crown prince in 1817. The final map was printed and published in 1826 (HARSSON & AANRUD 2016: 435-437) (Fig. 2).

The southern halves of Norway and Sweden, along with Denmark, are covered by eight detailed maps, while a small-scale key map covers the whole of the three countries (reproduced in GINSBERG 2009: 191). The map is titled 'Sweden and Norway or Scandinavia', which emphasises the Swedish view of Norway and Sweden as a single Scandinavian unit. This is underlined by the almost invisible boundary on the map, contributing to Forsell's ambitions of erasing the border also in a figurative sense (HEMSTAD 2018a: 58). The map is very detailed along the coast, but strikingly empty in the interior of Norway, in contrast to the interior of Sweden.

The first of the eight sheets provides important cartographic information. The title translates 'Map of the Southern part of Sweden and Norway or the so-called Scandinavia after His Majesty the King's most gracious command'. The prime meridian is the international meridian of Ferro, which demonstrates that the king's ambition for a common union cartography was not followed up even by his own cartographer. Sheet II provides the key, with over 30 different symbols covering themes such as infrastructure and industry, fortresses and administrative borders. Sheet IV is the first to include a part of Norway, while the rest of Southern Norway is depicted on sheets VI and VIII.

The map's toponyms follow the traditional Danish-influenced spelling. A coloured version of the map (reproduced in GINSBERG 2009: 191) has pink and blue shading along the administrative borders, while the national boundary is hardly noticeable. In contrast, a version at the National Library of



Fig. 1: G. Schönning's map of Southern Norway from 1779, and below a map extract showing part of Western Norway. Source: Norwegian Mapping Authority.

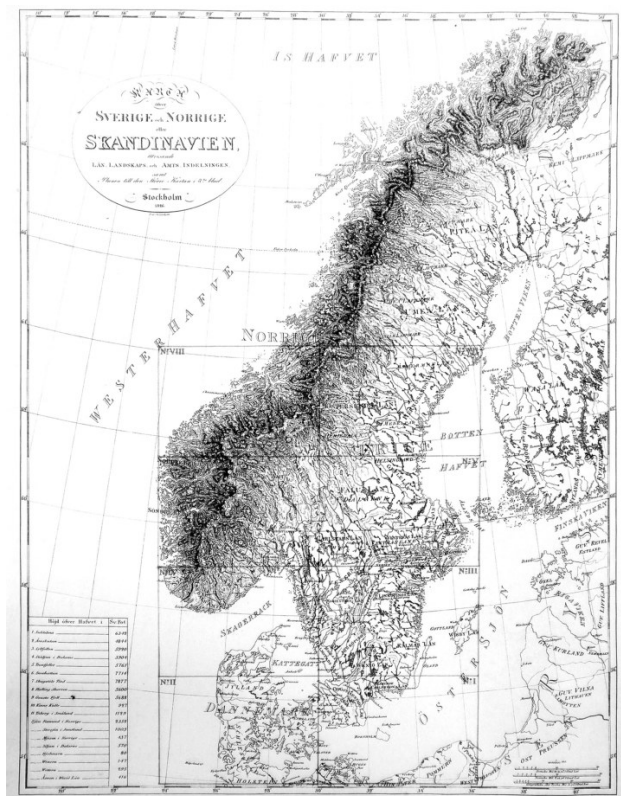


Fig. 2: C. G. Forsell's map of Sweden and Norway or Scandinavia 1815 (published 1826), and below an extract depicting a coloured version. Source: Royal Library of Sweden and (coloured version) National Library of Norway.

Norway (reproduced in HARSSON & AANRUD 2016: 436) shows the boundary sharply marked by a red line clearly separating Norway and Sweden. This copy was probably hand-coloured after printing, and the distinct boundary may have been added to underline the division between the two countries. However, no information is available about the colourist or this person's nationality.

After completing the manuscript map in 1817, the cartographer was ennobled (EKSTRAND 1903, GINSBERG 2009: 189). The significant position Forsell held in Swedish cartography was further demonstrated by his appointment as director of the Swedish Land Survey in 1824 (HILDEBRAND 1966: 311). Forsell's map of Scandinavia was considered the official map of the Swedish-Norwegian union (ENEBAKK 2012: 137). However, in Norway it never managed to challenge the Dane C.J. Pontoppidan's map of Norway constructed in 1785 (GINSBERG 2009: 191, HARSSON & AANRUD 2016: 437).

5.3 O. J. Hagelstam's map of Sweden and Norway 1820

Otto Julius Hagelstam (1785-1870) was born in Finland (part of Sweden until 1809) and served many years in the Swedish Navy (HOEM 1986: 113). He conducted several naval surveys and maritime cartography projects (SWEDISH NATIONAL ARCHIVES 2019).

During the union with Denmark, Norwegian maps were kept in archives in the Danish capital of Copenhagen. After Norway was ceded by Denmark to Sweden in 1814, Hagelstam was commissioned to go to Copenhagen and take possession of the Norwegian archive material on behalf of Sweden (HOEM 1986: 113, GINSBERG 2009: 271, BERG 2017: 196). These maps were the basis for Hagelstam's first map of Norway, published the following year (SWEDISH NATIONAL ARCHIVES 2019). He also drew a map of the Norwegian capital with detailed information about the city's fortress (HARSSON & AANRUD 2016: 458).

With the new union, Sweden gained full access to its former enemy Norway, and an early ambition was to map the new possession (BRISA 2014). A significant new map was Hagelstam's detailed 'Map of Sweden and Norway' published in 1820 (SWEDISH NATIONAL ARCHIVES 2019) (Fig. 3). The map was made 'with the royal most gracious permission', and the cartographer's background as lieutenant, knight, and member of the 'Academy of Sciences'

(The Royal Swedish Academy of Sciences, *Kungliga Vetenskapsakademien*) is mentioned in the title and gives the map credibility. The title also states that it is a 'geographical, military and statistical map'.

The prime meridian is the international meridian of Ferro, which was a common prime meridian in this period (LIEN 2020). The toponyms in Norway follow the Danish-influenced spelling, such as 'Qvindsherred' and 'Følgefonden'. The map has many administrative and military dividing lines, to a degree that it is difficult to distinguish the national boundary between Norway and Sweden from other lines. According to HEMSTAD (2018a and b), Hagelstam's 'hidden' boundary line contributed to the map portraying Scandinavia as a unit despite the title 'Sweden and Norway'. On the copy of the map kept at the National Library of Norway, many of the local administrative lines are coloured. However, the national boundary is not coloured, rendering it almost invisible compared to the other lines on the map.

The map is exceptionally detailed. The legend indicates administrative and military borders, and symbols for a large number of different features such as fortifications, post roads, churches, agriculture, forestry, and other livelihoods. The mapping of these elements provided the Swedes with abundant information about their new union partner, from which the military aspect appears dominant. The military background of the cartographer Hagelstam may have influenced the design of the map, but it might be that the Swedish king Karl Johan specifically required mapping of the military aspects. The detailed tables on the map sheet give a thorough overview of Norway's military capacity, right down to the individual soldier, horse, and cannon. Sailors and vessels are listed in a separate table for the Navy, and the map even provides an overview of the response time of the armed forces. Civil information on population and administrative division is also included. In addition, every remaining spot on the map sheet is filled with information on flora and fauna, resources such as reindeer and fish, climate, growing conditions and other useful information. The impression of the map is that it is a tool for overview and control, and it provides the sovereign with an information base for exploiting the country's resources.

5.4 C. B. Roosen's map of Norway 1829

Carl. B. Roosen (1800-1880) was a Norwegian officer and surveyor who was very patriotic (BRATBERG 2009). He was actively involved in the



Fig. 3: O. J. Hagelstam's map of Sweden and Norway from 1820 and below an extract showing the title. Source: National Library of Norway.

contemporary debate over the celebration of the Norwegian Constitution Day on 17 May, which, from its inauguration in 1814, gradually became a national festivity, to the degree that Swedish King Karl Johan in 1828 imposed a ban on marking the day (HAMMER 1923, STAGG 1956: 185).

Roosen was very productive (GINSBERG 2009: 174-183). His 1829 map of Norway is selected for analysis as it can be viewed as a response to the Swede Forsell's map printed three years earlier. Roosen's map focuses on Southern Norway, with Northern Norway depicted in smaller scale in a corner of the map. The map is designed to make Norway stand out as a separate country, as adjoining parts of Sweden are only faintly depicted. This is underlined in the map title, 'Map of Norway'. The subtitle emphasises the cartographer's nationality as a 'Norwegian engineer lieutenant'. The toponyms have the traditional Danish influenced spelling.

The prime meridian is the international meridian of Ferro, and the map also depicts the Danish meridian of Copenhagen. In addition, Roosen included the planned nation-building meridian of the Norwegian capital 15 years before its official establishment, a powerful statement by the cartographer.

The national boundary with Sweden is clearly marked, as are administrative borders within Norway. The map has abundant information on infrastructure, military installations, and settlements. This adds to the image of the map as a picture of a nation with everything needed for independence. On the version of the map kept at the Norwegian Mapping Authority, a few of the county borders are coloured yellow or pink; otherwise, the map is in black-and-white. On the version reproduced in GINSBERG (2009: 177), Norway is divided into four regions with different coloured shading. The small part of Sweden visible on the map sheet is not coloured. Thus, the colouring underlines Roosen's work as a map of Norway only.

Roosen's map became a commentary on contemporary society. He engaged actively in the cartographic struggle between Norway and Sweden and criticized the Swedes Hagelstam's and Forsell's maps for the way they depicted Norway as a part of the Swedish-led Scandinavian unit. Roosen claimed that cartography was a tool for spreading false concepts, with what was depicted on the map presented as reality (HEMSTAD 2018b: 121-122). His work was important for the construction of Norwegian identity, and another of his maps is examined later in this section.

5.5 C. O. Whitelock's map of Scandinavia 1837

Swedish cartographer C.O. Whitelock (VÖBAM 2019) produced a map of Scandinavia in 1837 that seems to support the rulers' view of the two union countries as a single unit. The title is 'Map of Scandinavia', and the names 'Norway' and 'Sweden' do not feature on the map at all. The border between the two countries is only faintly marked. A small part of Denmark is visible but is apparently not included in the cartographer's 'Scandinavia'-concept. The prime meridian is the international meridian of Ferro, even though just three years earlier a new order on common union cartography was issued by Swedish King Karl Johan (LIEN 2020: 7).

The subtitle of Whitelock's Scandinavia map informs in Swedish that its purpose was to give an overview of public work on canals, harbours, fortresses, and roads that had been initiated from 1810 to 1837. The subtitle has a French translation, stating that the map covers the public work done 'in Sweden'. This supports the impression that Whitelock portrayed Norway and Sweden as a single entity under Swedish leadership.

In accordance with the stated purpose, Swedish ports and fortifications are listed in tables around the map sheet, as are Swedish canals and road constructions. A few symbols for fortresses can be found, such as the Norwegian Kongsvinger and the Swedish Carlsten. Toponyms on the map are sparse, also on the Swedish side of the border, and the spelling on the Norwegian side is the traditional Danish influenced, such as 'Bodøe' and 'Fillefjeld'. A basic pattern of infrastructure is included in the map. The scale is in Swedish miles only, adding to the impression of the map as a Swedish piece of work.

The version of the map kept at the National Library of Norway has blue shading along the coasts of Norway and Sweden. The almost non-existent boundary line between the two countries on the original black-and-white map is here depicted by pink and yellow shading along the border, dividing Whitelock's single entity into two parts through use of colouring.

5.6 A. Vibe and N. C. Irgens' map of Christiania 1844

Andreas Vibe (1801-1860) was a military officer, surveyor, and cartographer (BLANGSTRUP 1928: 59). Nils Christian Irgens (1811-1878) was a military officer and engaged in civilian engineering work on

Norway's infrastructure such as harbours, roads and later also railways (BLANGSTRUP 1922: 489, GINSBERG 2009: 271). Vibe and Irgens together produced a map of the Norwegian capital Christiania in 1844 (Fig. 4). The scale is indicated in Norwegian units only. The toponyms follow the traditional Danish influenced spelling, and all map versions examined are in black-and-white only.

A few years earlier, Sweden had once again tried to impose cartographic unity on the union (AROSNIUS 1859). Yet this map uses the highly controversial prime meridian through the Christiania Observatory. Some decades earlier, Swedish Crown Prince Karl Johan had refused to accept the establishment of such a Norwegian national meridian due to its symbolic significance for Norwegian independence (PETTERSEN 2014). Nevertheless, through a long process, the Christiania Observatory's director, astronomer and professor Christopher Hansteen (1784-1873) finally managed to establish this national meridian in 1847 (HARSSON & AANRUD 2016: 210-211). The use of this prime meridian on Vibe and Irgens' 1844 map thus predates its official establishment.

The title of the map translates 'Map of Christiania including a square mile of the surroundings, summarized by the latest and most reliable information. With honour dedicated the Director of the Norwegian Geographical Survey Mr. Professor Knight M.M. Hansteen by Vibe and Irgens, engineer officers'. Hence, in addition to the provocative use of the Norwegian national prime meridian, the cartographers dedicated the map to the 'father' of this symbolic new meridian line (BERG 2017: 198). Their support for his work is also noticeable in the decorations, where important buildings of the Norwegian capital are depicted along the map frame. They include the Royal Residence, the University and the Theatre, but the most prominent position is reserved for a depiction of the new Observatory. Supporting the decorations are informative tables on the capital's heights, geology, streets, public and military buildings, and several trigonometric points.

The versions of this map examined in this study (from the Ginsberg collection, the National Library of Norway and the digital archives of the Norwegian Mapping Authority) are in black-and-white only. The scale is 1: 25 000 and is given in Norwegian units only, adding to the nation-building function of the map. The toponyms appear to follow the traditional Danish influenced spelling, which is not unexpected as the capital would have been more affected by the long-lasting Danish-Norwegian union than remote Norwegian valleys.

Vibe and Irgens depict Christiania as a powerful city with all the institutions necessary for the capital of an independent country, and this image was disseminated through the distribution of the map. Shortly after the map was published, a scientific conference for nature researchers was arranged in the city (ERIKSSON 1991). Professor Hansteen arranged for all the participants to receive a copy of the new map as a gift (GIMSE 2014). This spread the new Norwegian national prime meridian and its symbolic function opposing Swedish cartographic unity.

5.7 P. A. Munch's map of Norway 1845

The interests of Peter Andreas Munch (1810-1863) were within history and geography. Both are regarded by ANDERSON (2016) as important elements when constructing a new national identity. Munch had thorough knowledge of the Norwegian Middle Ages and the Norse language and regarded Danish to be a "standoffish ridiculous confirmation dress around the healthy peasant boy" (the latter probably representing Norway) (HOEM 1986: 117). Munch aimed at using old Norwegian place names and focused on the bright historical past (SANDVIK 1983: 26). According to GINSBERG (2009: 116), Munch used Schöning as one of his sources.

With his 1845 map of Norway, Munch was the first to reproduce the country's correct shape cartographically (ENEBAKK 2012: 131). This accuracy was partly due to his observations and surveys during extensive travels (HOEM 1986: 117, ENEBAKK 2012: 141, BERG 2017: 202). The title is 'Map of Norway for use in the lower grades', and the teaching purpose ensured a wide distribution of the map and the ideas established in it.

Most of the map sheet depicts Southern Norway, with Northern Norway inserted in half scale. There is no dedication. The borderline with Sweden is clearly depicted, and the prime meridian is Ferro. One copy of the map has a faint colouring of the administrative borders and the national boundary (reproduced in GINSBERG 2009: 218). Other copies, such as the one presented by HOEM (1986: 118-119), are black-and-white only.

In contrast to the small part of Sweden included in the map, the depiction of Norway has an abundance of shading and details, expressing the distinctiveness of Norway as a separate entity. The map is filled with symbols such as roads, towns and villages, farms, and copper- and ironworks, in addition to exceedingly detailed information on the administrative



Fig. 4: A. Vibe and N. C. Irgens' map of Christiania 1844 and below an extract depicting the observatory under the title. Source: Norwegian Mapping Authority.

division of Norway. The map has a high level of precision and is extremely rich in Norwegian place names, many of which were Norwegianised by Munch as part of the nation-building process (ENEBAKK 2012: 143, BERG 2017: 203). The over-abundant information might be considered to reduce the map's usefulness yet contributes to the impression of Norway as a vivid country with many settlements and prospering activities.

Munch's map was constructed in the middle of the period of National Romanticism at a time when contemporary historians aimed to prove that Norwegians had a distinctive Norwegian identity (ENEBAKK 2012: 147). Through long walks in Norwegian nature, mapping along the way, he gained a completely different impression of Norway than the prevailing narrative of a mountainous country devoid of settlement. Munch mapped watercourses, valleys, mountain passes and hiking trails on the mountain plateaus. The 1845 map therefore made a decisive contribution to Norwegian national identity (HOEM 1986: 117, ENEBAKK 2012: 129).

5.8 C. B. Roosen's map of Southern Norway 1848 (1845)

Roosen's map of Southern Norway from 1848 is titled 'General map of the southern part of the kingdom of Norway (Noregr)' (Fig. 5). The Norse form, 'Noregr', serves as a reminder of Norway's past as an independent country. The aim for autonomy is underlined by a distinct borderline to Sweden, and by the faint depiction of the adjoining parts of Sweden.

In the cartouche, Roosen describes himself as 'Norwegian citizen and engineer officer', emphasising both his Norwegian affiliation and his professional background, implying that the map could be trusted. This is supported by the subtitle of the map, which refers to astronomical and geodetical information from the Norwegian Geographical Survey (today: Norwegian Mapping Authority), the 1751 Border Treaty with Sweden, and updated cadastre legislation. The map is presented as a scientific work, grounded in the knowledge of a Norwegian citizen, independent of the Swedish professional institutions.

The versions examined are in black-and-white only. The prime meridian is Ferro, but Roosen's nationalistic mindset is demonstrated by the new and politically important prime meridian of Christiania also being clearly marked on the map. The most striking evidence of Roosen's patriotic attitude is that the map is dated to 'the 31st year after the dec-

laration of independence and the restoration of the Constitution. Eidsvold, 17th May 1814'. National pride could scarcely have had a more powerful expression than the use of a calendar rooted in the signing of the Norwegian Constitution. The time difference between 1814 and 'the 31st year' appears to indicate that the map was originally drawn in 1845.

The map has no dedication, and the toponyms follow the traditional Danish-influenced spelling. Several tables provide statistical information, and two city maps are included. One depicts Frederikshald (today's Halden), with its large fortress less than 3 kilometres from the border with Sweden, and referring to a rebuffed Swedish attack in 1716, thus accentuating the Norwegian will of independence. The other depicts Christiania, with its position as 'the capital' underlined, even if the Swedish capital of Stockholm was the official capital of the union. The city map includes information about important Norwegian institutions such as the University and the Parliament, supporting the Norwegian national self-esteem.

From a national point of view it is also noteworthy that the statue of Christian Krohg is depicted among the important Norwegian institutions on the inserted city map of Christiania. Krohg was a lawyer and Member of Parliament. He came to be regarded a national hero after he in 1824 stood up for the relatively new Norwegian Constitution when the union king Karl Johan attempted to expand his own power (STORSVEEN 2009). In 1833, a monument of Krohg was erected in the Parliament Square in Christiania, which became a gathering place for later celebrations of 17 May. Thus, the statue can be seen as a Norwegian symbol of independence, and Roosen probably included it in his map with this purpose.

5.9 T. A. von Mentzer's map of Norway and Sweden 1872

Ture Alexander von Mentzer (1807-1892) was a Swedish cartographer and officer (WESTRIN 2013). His cartographic production included historical and statistical maps, and maps depicting the growing net of railway lines. He published numerous atlases in the 1860s and 1870s, many of them designed for use in schools. His map from 1872 was intended for lower-grade teaching. The map's title is 'Sweden and Norway', and the prime meridian is the international meridian of Ferro. The map has no dedication or indication of scale. There are almost no symbols, except for dots representing cities and a few symbols



CARL, B. ROSEN,
 Norsk Medborger og Ingeniør Officer.
 M^d af la Societe Française de Statistique Université de Paris.
 KRISTIANIA, 1848.

*Det 31^{de} Aar efter Uafhængigheds Erklæringen
 og Konstitutionens Gjenindførelse.*
 Eidsvold, den 17^{de} Maj 1814.

*La 31^{me} Année depuis la déclaration de l'Indépendance
 et la Réintroduction de la Constitution.*
 Eidsvold, le 17 Mai 1814.

Fig. 5: C. B. Roosen's map of Southern Norway 1845 (published 1848) and below an extract showing dating relative to the signing of the Norwegian Constitution at Eidsvoll 17 May 1814 ('The 31st year after the declaration of independence and the restoration of the Constitution. Eidsvold, 17th May 1814'). Source: Norwegian Mapping Authority.

for fortresses, such as the Swedish Karlsten and the Norwegian Akershus.

There are relatively few toponyms on the map, although there seems to be a balance in their number between Sweden and Norway respectively. The Norwegian toponyms follow the traditional Danish influenced spelling such as 'Eidsvold' and 'Søndre Bergenhus amt'.

The boundary between Sweden and Norway is clearly marked, but so are the boundaries between the administrative units in both countries. The impression is a united region where the national boundary is toned down to the same level as local administrative dividing lines. This is underlined by the colouring, where each administrative unit is coloured without regard to whether it belonging to Norway or Sweden. From the colouring alone, it is impossible to distinguish between the two countries; they appear as a single entity.

6 Discussion

In this section, the results of the map analysis will be interpreted for each of the chosen cartographic elements and discussed in light of the theory. I indicate where gains in knowledge have been made compared to previous work. For example, there has been substantial research on the relationship between the Scandinavian countries and what is included in the term Scandinavia, but it has not been previously investigated how the perception of Scandinavia is connected with the use of dedications indicating allegiance to a patron or sovereign. The following results from the map analysis contribute to new insights into these relationships.

Regarding map titles, the Swede Whitelock used 'Scandinavia' and the Swede Forsell used 'Sweden and Norway or Scandinavia'. This corresponds with the ambitious geopolitics of the Swedish sovereign Karl Johan (BERG 2009, HEMSTAD 2018a). In contrast, none of the Norwegian cartographers applied the union term 'Scandinavia'. The Norwegian Roosen additionally included the old Norse form 'Noregr' in his map title, referring to Norway's history as an independent nation and illustrating BARTON'S (2003) description of the Saga period supporting new nation building. It accords with the views of BLACK (1997), SCHNEIDER (2007) and BRANCH (2013) regarding the role of cartography in the development of political identity. Nevertheless, there is no sharp delineation between Norwegian or Swedish cartographers regarding the use of map titles. Of the four analysed

Swedish maps, the two constructed by Hagelstam and von Mentzer mention Sweden and Norway as two separate countries.

Several of the analysed maps have a dedication or subtitle. Forsell has a very distinct dedication as his map was made on direct orders from the Swedish Crown Prince, as was probably Hagelstam's 1820 map referring to the 'royal permission'. On the Norwegian side, none of the analysed maps has a dedication to the Swedish royalty. This could be interpreted as an attempt by the cartographers to distance themselves from the union king. The only Norwegian map with a dedication is Vibe and Irgens' map of Christiania, demonstrating support for the originator of the new prime meridian through the Norwegian capital, a cartographic element with a powerful symbolic significance that the Swedish king strongly opposed.

Boundaries and colouring are often closely linked, and this analysis extends previous work (Lien in press) on the relationship. As described by BERG (2005), the mapping of Norway partly aimed to emphasise the boundary, and this study confirm that several cartographers used the borderline to make Norway stand out clearly as a separate country. Some copies of the maps further emphasise this by the use of colour. This corresponds to ANDERSON'S (2016) definition of a 'nation' limited by clear borders. It also demonstrates that Norway was active in delimiting its territory as a separate nation, reflecting BRANCH'S (2013) territorial perspective on state identity. At the same time, three of the four Swedish cartographers in this study included an almost invisible borderline between Norway and Sweden. The fourth, von Mentzer, drew a clear boundary, but at the same time he added almost as clear borders between the administrative units in the two countries, and hence the marking of the national boundary lost its significance.

Several of the cartographers in this study focused on toponyms as a nation-building tool, in line with their significance for national identity as described by BARTON (2003) and CHLOUPEK (2019). Already Schöning, in the late eighteenth century, replaced the Danish approved names with Norse toponyms as a reminder of the bygone era of an independent Norway. He nurtured a desire for dissolution of the union with Denmark, and his use of toponyms as a political tool accords with KEATES' (1996) notion that national pride can be supported through conscious use of place names.

Like Schöning, Munch was interested in the combination of history and geography, which, as argued by GLENTHØJ (2009) and ENEBAKK (2012), are both

important when it comes to the building of identity. By replacing the Danish-influenced toponyms with Norwegian place names based on the heyday of the Middle Ages, Munch used cartography to support the aspiration for Norwegian independence. While this is known from previous work (HOEM 1986: 117, ENEBAKK 2012: 143-44, 148), Roosen's use of the Norse form of 'Norway' in the title of his 1845 map has not been pointed out previously. However, he did not follow this up by Norwegianising place names on the map itself. In general, the 400-year long union with Denmark seems to have had a long-lasting influence on toponyms on Norwegian maps, and Danish names were used by both Norwegian and Swedish cartographers.

The prime meridians of the analysed maps are important as, according to HIGGITT & DOLAN (2009), they can be used to assert national identity. However, LIEN (2020) has demonstrated that this opportunity for national symbolism was often not used on maps from Scandinavia, as, during the nineteenth century, the international prime meridian of Ferro was frequently applied. Ferro is used on seven of the nine studied maps. There are no Swedish or union prime meridians found on the maps in this study, confirming LIEN's (2020) documentation of the fact that not even Swedish cartographers followed their own sovereign's intentions regarding common union cartography. The analysis of the prime meridians in the present article places this previous work in a broader context. The two maps that stand out regarding prime meridians are Roosen's 1829 map of Norway and Irgens and Vibe's 1844 Christiania map. While the main meridian of Roosen's map is Ferro, the map also strikingly indicates the not yet established national prime meridian of the Norwegian capital. Irgens and Vibe, for their part, had the line through Christiania as their sole meridian, predating its official implementation by several years. This confirms BERG's (2009) argument that a map's prime meridian has symbolic value, and complements EDNEY's (1994) demonstration of the prime meridian as a patriotic instrument. It also accords well with SCHNEIDER'S (2007) view of the political role of cartography in depicting the world not simply as it was at the moment of the map's production but also as a situation they hoped to bring about.

The central message of this study, in addition to the political use of map titles and dedications, lies in the political significance of map symbols. The relationship between national identity and symbols on Scandinavian maps has not been studied previously. This topic can be illustrated by Hagelstam's

military and statistical maps, used by the Swedes to take possession of their newly acquired union partner while uncovering Norway's resources and defence capability. In parallel, Roosen's and Munch's maps are packed with information highlighting Norwegian industry, settlements and infrastructure. These maps stand in contrast to Forsell's Scandinavian map depicting Norway's interior as relatively empty. Their considerable focus on depicted resources may indicate that these provide an economic base for independence. Together with Roosen's use of important national symbols like the Royal Palace and the Supreme Court, in addition to the statue of the national hero Krogh, these cartographic elements supported the growing national self-esteem. These maps reflect in differing ways the society in which they were constructed, as pointed out by SEALE et al. (2004).

In this study, I have also examined some maps intended for use in education. As documented by TAYLOR (1994), schools can be decisive for diffusion of national values, and one of the tools is cartography. Two of the analysed maps were intended for school use, constructed respectively by the Norwegian Munch and the Swede von Mentzer. The analysis demonstrates that school maps were used to disseminate the authorities' world view, as pointed out by BARON (2022). These ideas spread widely with the increase in the number of schools during the nineteenth century.

The findings also indicate the national rivalry between Norwegian and Swedish cartographers. As HEMSTAD (2018a: 60) argues, Roosen was one of the most dedicated Norwegian patriots in the first half of the nineteenth century. This can be traced through elements in the two analysed Roosen maps, demonstrating that he used maps as political instruments in arguing against the unification of Norway with Sweden, in contrast to the competing cartography of the Swedes Hagelstam and Forsell. However, there is a certain irony in the Norwegians' resistance against Swedish cartography, for instance when rejecting the Swede Forsell's 1826 map of Norway in preference to the Dane PONTIOPPIDAN'S (1785) map, which was in use for half a century, well into the new union with Sweden.

Another central result of the map analysis is that it generally appears as if Norway had to some degree become accustomed to the Danish influence on cartography after several centuries of Danish rule. For a period after the dissolution of the union in 1814, a few Norwegian cartographers, like C.B. Roosen, continued to refer to Copenhagen

as the prime meridian on some of their maps of Norway. Many Norwegian cartographers, some of them otherwise known to be patriotic, continued to use Danish place names on their maps. In contrast, Norway had a very different attitude towards Sweden during their union. This may be because Norway and Sweden were traditionally rivals, with numerous wars over the centuries. When the union with Denmark ended in 1814, Norway had hopes of independence, and there appears to have been less acceptance of a political union with Sweden, even though Norway's position in this union was more autonomous than in the one with Denmark.

The Scandinavism from the Swedish side may have had traces of expansionism, as BERG (2005: 180) suggests. The findings correspond well with MURPHY'S (1996) description of how sovereigns take possession over territories by mapping them as a unit. The graphical depiction of Norway as part of a united Swedish-Norwegian Scandinavia with a more or less invisible boundary line adds to the symbolic use of map titles by Forsell and Whitelock. It hence documents how the Swedish sovereign asserted political authority through maps, as mentioned by EHRENSVÄRD (2006). Hagelstam's 1820 mapping of Sweden's new union partner can be seen as a demonstration of political supremacy through the meticulous military information and listing of Norwegian resources. This relates to FOUCAULT'S (2001) focus on the connection between knowledge and power and ANDERSON'S (2016) description of conquest by surveying. The thorough mapping of Norway by the Swede Hagelstam demonstrates how knowledge of a nation's geography facilitates territorial control, as pointed out by JONES (2003).

The empirical results document that several of the Norwegian cartographers were contributing to what LOSANG (2020) calls having ownership of one's own narrative. By the use of selected cartographic elements, Norwegian cartographers tried to portray Norway as if it were an independent nation. This illustrates STRANDBJERG'S (2010) link between development of cartography and territoriality, and ANDERSON'S (2016) description of cartography as an important political tool for newly independent countries, as well as MONMONIER'S (1991) statement that nations can be symbolised by maps.

The findings relate to BERG'S (2009) theories on the link between nationalism and the mapping of the corresponding territory. The 'spatial container' described by TAYLOR (1994) contains both Sweden and Norway seen from the Swedish perspective, while the Norwegians considered the 'container' to

be limited to Norway only. By the different cartographic representations, both countries underscored their contrasting attitudes to the political division on the Scandinavian peninsula, as two separate countries or as a single (Swedish) entity, respectively.

7 Conclusions

The aim of this paper has been to analyse whether and how different cartographic elements from a selection of late eighteenth and the early nineteenth century maps may have reflected Norwegian nation-building or Swedish authority over the Scandinavian peninsula. This partly compliments and extends other work on the subject, but mainly contributes with new knowledge on the relationship between political ambitions and cartographic elements. The main results of the study indicate that cartography contributed to one narrative about the union in Sweden and another in Norway. The use of maps for educational purpose reinforced the influence of maps supporting national or union identity respectively.

We have seen that all four selected Swedish cartographers used different cartographic elements to communicate a view of the Scandinavian peninsula as an entity. The map titles of Forsell and Whitelock focused on the Scandinavian unit, while the dedications of Forsell and Hagelstam emphasised the connection between the (Swedish) sovereign and the depiction of the union. With his thorough mapping, Hagelstam took the new union partner Norway cartographically 'into possession', and both Hagelstam and von Mentzer downplayed the importance of the national boundary line. These maps seem to reflect Swedish eagerness to conquer cartographically their former enemy Norway. The Norwegian maps, on the other hand, give the impression that some Norwegians mapped their country as part of a nation-building project, with different cartographic elements serving as symbols of independence. An example is how Schöning and Munch used toponyms to draw attention to Norway's past to support the emerging national consciousness.

Further findings are the evidence of Norwegian patriotism on Vibe and Irgens' map of Christiania from 1844 and Roosen's map of Norway from 1845/48. These two maps were constructed within a short period and indicate that Norwegian national consciousness was on the agenda, with cartographers resisting the Swedish royal decrees on common union cartography. Vibe and Irgens' map coun-

terbalanced Hagelstam's 1820 map through their use of the national prime meridian, as well as decorating their map with buildings of national importance. They demonstrated cartographic possession of the capital of Norway and underlined this with a dedication to the 'father' of Norway's new prime meridian, and by placing the new observatory of the Norwegian capital in a prominent place on the map sheet. Roosen displayed this upcoming prime meridian already on his 1829 map, alongside the international meridian of Ferro and the Danish meridian of Copenhagen. On his 1845/48 map, he followed up the nation-building work through several cartographic elements, including a novel calendar with its starting point in 1814 when Norway established its Constitution.

This study provides empirical evidence from the Scandinavian region showing how different worldviews can be expressed through maps. The relationship between nationalism and cartography is well established in existing literature, but the Norwegian perspective is relatively little known outside the region and deserves attention. This is not least due to the political situation, with Norway being transferred from one union to another, giving an opportunity for using cartography as a tool for independence. However, the main new knowledge gained from this study is that the picture was more balanced than initially supposed from the theoretical study. None of the Swedish maps examined used a Swedish or union prime meridian and, with a few exceptions, all the analysed maps, including the Swedish, used Danish-influenced toponyms. The Swede Hagelstam did not use the unifying term 'Scandinavia' in his map title, nor did the Swede von Mentzer. On the other hand, this study contributes to new insights into the use of cartographical elements promoting political objectives. The results demonstrate how resources such as infrastructure, military facilities or industries were mapped to support a view of economic wealth, geographical diversity and independence ability, thus supporting the increasing Norwegian national self-esteem.

An interesting avenue for further study would be to examine how Norwegian national identity was expressed through maps in the later nineteenth century, during the period leading to the dissolution of the Swedish-Norwegian union in 1905. The political independence obtained by Norway at that point was the final result of a slow but steady process that started in the late eighteenth century, in which the strategic use of cartography was one of several important tools.

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**Errata for
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*The impact of maps on Norwegian national identity in the eighteenth
and nineteenth centuries*

Anne Christine Lien



Thesis for the degree doctor philosophiae (DPhil)
at the University of Bergen

7/2-24 *Anne Lien*

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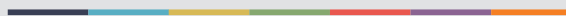
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Errata

The year of publication for Lien (2023a) should be changed to Lien (2024) due to publication delays. Consequently, the reference Lien (2023b) should be changed to Lien (2023).



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