GEOGRAPHIES OF SCIENCE – MEN AT THE END OF THE WORLD

Katarina Schough, Department of Geography and Tourism, Karlstad University.

Presented at Gender and Power in the New Europe, the 5th European Feminist Research Conference
August 20-24, 2003 Lund University, Sweden.

Gallia nos genuit: vidit nos Africa;
Gangem Hausimus,
Europamque oculis lust ravimus omnem;
Casibus et variis acti terraque marique,
Hic tandem stetimus,
nobis ubi defuit Orbis.

France bore us; we have seen Africa
And drunk from the Ganges,
We have wandered through all of Europe
And engaged in countless exploits on land and sea.
Now, here at last we stand,
Having reached the farthest limits of the earth.1

Background
The title of this paper refers to the conclusion early travellers drew as they arrived at Lake Torne in northern Sweden. Surely this must be the place where the world ends! The relative “remoteness” of the Lake Torne area – but paradoxically also its relative accessibility – has since long been an important enticement for researchers to perform studies there. Some scholars, Donna Haraway for example, have argued that the positioned characters of knowledge production - the spatial relations of subject and object of knowledge - have great implications for epistemological concerns. However, as I view it, it should be considered an empirical question how these relations are constructed, and how their implications shape science. In this paper I will focus on the former, charting geographic relations of researchers and research in the Lake Torne area.2

Since I am trained as a geographer, the approach I take towards the study of science is spatial. Influenced by metaphorical and concrete spatial aspects in the works of classic researchers such as Bruno Latour and Donna Haraway, I take the liberty to construct a methodological approach to the study of science that is grounded in the concept relational space.3 Thinking of space as relational involves the inclusion of diverse dimensions of power, opening geography to social relations of various kinds. In this study, the spatial relations touched upon in connection to knowledge production are gendered, racealised and colonising to their character. However, I make no claim to cover these

2 This is the first published paper in this project, and from this specific case study. It is to be followed by papers concerning other spatial aspects of knowledge production grounded in the same empirical arena. Themes to be discussed are “positioned stories of landscape”, “stationing science” – e.g. local relations of a science station, contemporary science and “geographies of space” (spatial imaginations of space science). As this study is in its initial stages, I am grateful for all kinds of critical and constructive input.
3 My understanding of the term relational space is grounded in a tradition represented by, for example, McDowell, L. (1996) and Massey, D. (1994).
social relations per se in the realm of knowledge production, in this case study. It is first and foremost
spatialities – the geographies of science - that are the centre of my interest. And although science by its
practice has direct as well as indirect consequences for the construction of spatial relations of rulings,
for land use and for people, the focus of my interest is here rather introvert, it bounces back to
“research itself”. It is my conviction that a deeper understanding of the roots of our spatialised
research practices is valuable for developing both self-understanding and methodological critique. By
investigating the spatial relations of science I hope to contribute to the discussion aiming towards a
deeper understanding of what positioned knowledge could be, or rather, how it could be practised.
Methodologically, this study of science is structured around an object of inquiry. The study
positions itself alongside that and those under investigation, “stands” in a region that is to be charted,
“looks” at scientists coming and going. Using Latour’s vocabulary, it is towards where scientists cross
other people’s path that the centre of our attention will be drawn in this paper.

Introducing the valley of Lake Torne as an object of inquiry
The valley of Lake Torne is a great land of the future, it is wilderness, it is home, it is empty, it is
crowded, its meadows are like wetnurses to the reindeers, and here is the location of the end of the
world. There are many stories about the Lake Torne region, and the stories vary in accordance with the
positions of those telling them. Some stories have been more influential than others have - some

4 To identify a region with an object of inquiry or even with an object of knowledge is of course an immense
simplification. I use this “everyday” vocabulary only to point out where in the chain of knowledge production
this study centres. As Knorr Cetina, K. (2001) p.181, points out: “Objects of knowledge are characteristically
open, question-generating and complex. They are processes and projections rather than definite things.” This
paper will in line with Knorr Cetinas statement treat the scientific construction of the Lake Torne area as such a
process and projection.

5 A paper, preliminary titled Oral geographies – charting the spatiality of landscape telling, concerning these
issues is registered to the European Social Science History Conference 2004. There, I will discuss how we can
understand the spatialities from which landscape is described. The positioned character of landscape descriptions
is highlighted through peoples’ stories of themselves and of their geography. While science has produced written
statements about the region of Lake Torne, landscape stories produced with other perspectives can to a large
extent be defined as oral history and/or oral geography. The empirical foundation of that paper includes stories
from people connected to spatialized positions such as nomadism, colonisation, migration, tourism and research.
Grounded in these stories and in the geographical biographies of the storytellers, that paper raises
methodological issues concerning positions, spatiality and landscape. The paper also discusses possibilities to
relate landscape stories to each other, without using what Donna Haraway (1991) calls a “Good-trick”. The
problematization leads to questions concerning the positions of the researcher and the reader, and to spatial
aspects of the relations of knowledge production.
stories have to a large extent defined, named and represented the area, reaching both insiders and outsiders. The character of a story produced as science of course makes different claims than other stories. The ontological relation between a scientific fact and the world it represents is not what this paper is about, but according to Latour researchers can produce representations of the world; not through resemblance but rather through long chains of transformations. How these stories of science thereafter are circulated and made accessible to a wider audience through i.e. education and media is a matter in and of its own. One example of the integration of science, saga and education is expressed in the illustrations by John Bauer. His visit to Lake Torne in connection to his work for Svenonius inspired him in his later production, thus contributing to the circulation of ethnicised representations, as in figure 2. Stories told by researchers are in the case of the region of Lake Torne so influential, that other voices often diminish in their presence. This is one of the reasons for looking into how scientists have related to and described the valley of Lake Torne – because it is integrated in relations of rulings.

Figure 2. Illustration by John Bauer to the saga “The changelings” by Helena Nyblom (1913).

Research design, material and methods
The empirical material grounding this paper is chosen to chart historical roots of the specific spatialities of science, in regard to the valley of Lake Torne as an object of inquiry. I consider the discussion valuable as such, but the study is also designed to be just one in a number of papers and articles forming a more extensive study on spatial aspects of the production of knowledge. A chart of that overall research design of the Lake Torne case study would place science in the centre, surrounded by tourism, industrialism and Saami aboriginals. The geographies of these “clusters” have different characters and they need to be approached by means of a variety of methodologies. Although I am tempted to stray, and there will be odd references to ethnographic information surrounding this text analysis, my aim is to demarcate this piece of work to its empirical sources – academic texts. Therefore, this paper is mainly grounded in texts concerning the Lake Torne region produced by researchers. These texts have the shape of academic papers, books and chapters, and were selected by combining the bibliography of Abisko Science Station, the Lapland collection of Kiruna library, and references in these works. The academic disciplines chosen are mainly the humanities, the social sciences, and geography; the latter including both human and physical geography. In a few cases I

7 John Bauer was one of the illustrators in Bergqvist, O. & Svenonius, F. (1908).
have included works by intellectuals without the status of researchers, and when this is the case it will be made clear. Some of the authors and texts will be highlighted and used to illustrate lines of argumentation, but I make no claim to cover or categorise the whole production.  

I have structured my reading of the texts by means of a “questionnaire”; a set of themes concerning the spatial character of the research. These themes are influenced by theory, but they have been adapted to the empirical material, and developed along the way. It is these themes that frame the following description. Before I proceed to present the results of this limited study there are two reservations or positionings to be made concerning the dimensions of time and space. I have not applied a chronological approach to the material, although the times and generations concerned stretch over a period of industrialisation and beyond, over times of wars and times of peace, times of economic boost and times of economic deprivation, and over times of democratisation and political transformation. But even if the last century in itself includes transformation and variety, it can also be thought of as that moment in time when colonisation, in the shape of industry, science and tourism, physically appear on a more regular basis in the area. And, I would like to emphasise once more; the spatiality of the research under investigation is studied with focus on the object of inquiry. Naturally, a comprehended science history would present the geographical character of this research in other ways – in this paper we only meet researchers as they take part in a located activity; as they enter, watch, return from and describe the Valley of Lake Torne, whether they do this in person or by means of instruments and from a distance. In other words – a cartography centred on a centre of calculation would produce another map than this paper does. The position I as the author take in this project is artificial in many senses; it is constructed explicitly to allow us to capture a specific view of research in the Lake Torne area.

**Positioning the storytellers**

The reach and authority of a story varies with the position of the storyteller, and variables in this equation are, for example, education, gender, ethnicity, class, geographic origin and religion. If one treats these terms as labels of social categories, they will to a large degree overlap regarding scientist in the Lake Torne area. Dichotomic categories under each of these labels would read; high/low degree of education, man/woman, Swedish/Same or Finn, high and middle class/country people, peasants and working class, visitor/native. The researchers performing science about the Lake Torne region are (using the above labels); high educated men, defined as Swedish (blurring ethnicity and nationality), high and middle class, and visitors in the area. There are few exceptions from this rule; but my material also include a) one man of Saami origin from the region, without scientific claims, Johan Turi, b) one woman without scientific claims, Emelie Demant-Hatt and c) one man doing an “amateur” inventory of Saami music, Karl Tirén. However, the most widespread knowledge of the Lake Torne area is produced from a certain position by Swedish men of the academy, with their base in central Sweden. But what are the implications of this not very surprising inventory when it comes to the production of knowledge?

According to Ludwik Fleck, the relationship between a researcher and knowledge can be understood through the concepts of “collective of thought” and “style of thought”. Stable collectives of thought - such as science at Fleck’s time - consist of circles with a centre and a periphery, the later depending on the authority of the former. Most of the members of a collective of thought need to have confidence in the members of the inner circle, but there is also a reverse dependence. The trust and mutual dependence in these circles gives us a clue as to how to relate social and cultural categories to styles of thought. The preparedness for a person to formulate or embrace a structure of thought depends on “membership” in collectives of thought. In this paper, I will let myself be inspired by Fleck’s concept “collectives of thought”, applying a spatial approach to the concept. Styles of thought “come together”; they are integrated, and I regard this as related to positionality.

---

8 The works touched upon in this paper are listed in the end under “sources”. Contemporary research in particular (approximately from the last two decades) is not represented in proportion to its occurrence.


12 Fleck, L. (1997).
Gendered academia in familiar relations

Masculinities of science have features in common but are also diverse. In the discipline of geography, Gillian Rose has thoroughly illustrated this with regard to what she calls social-scientific and aesthetic masculinities respectively. Regarding Swedish academic geography I have in an earlier work exemplified the varying and overlapping character of academic masculinities, such as a) the geographer as a male object of knowledge, b) the assumption that it is men who are the actors shaping the landscape which is the object of investigation, and c) non-gender models applied to explain and plan societies structured by gender. The gendered practice of science – raising questions, doing fieldwork, and building models of understanding – is in this case study connected with those masculinised positions available for academic men (and as time passes, women) to occupy and embody. The characters of these positions are relational in regard to the object of inquiry and towards other social positions. The maleness required to climb a mountain is taken for granted, but there is also a need for difficult mountains to build maleness – too great an accessibility demoralise men.

The maleness required to climb a mountain is taken for granted, but there is also a need for difficult mountains to build maleness – too great an accessibility demoralise men.

one or two reindeer hunters had maybe incidentally climbed it, but such a journey was at the time regarded as an unusually great achievement. Nowadays there is hardly one bright summer day, when the mountain is not climbed by large numbers of tourists, among them a multitude of ladies.

Galdöpiggen is now regarded almost with contempt by every honest mountain climber… it is too compliant…it is demoralising to fight such an opponent.  

The definition of honourable men and mountains thus show a mutual dependence for their definition, and give construction of gender identity a place in the aspects involved in choosing the object of inquiry. Another gendered relation to the object is the notion of a region being “taken care of” which has connotations to substitute paternal care, complemented with militaristic hierarchic relations between those entrusted with this mission.

the noble patriot S.G. Hermelin “foster father of the county of Norrbotten” and his drabantst  

The outstanding man embodying a paternalistic position with regard to the Lake Torne area is industrial magnate Dr. Hjalmar Lundbohm, geologist and city father of Kiruna. Hjalmar Lundbohm was a patron of science, and the company he worked for, the Luossavaara-Kirunavaara Aktiebolag, funded individual researchers and donated funds to the Nordic Museum, from which a systematic inventory of the Swedish countryside was organised. According to researcher Ernst Manker it was such a donation that made an extensive inventory of Lappish culture possible. From the beginning of the twentieth century into the 1940s, reference is consequently made to Lundbohm by researchers writing about the area. His role as donator of funds is given prominence, and for instance, The Swedish State Institute for Race Biology emphasises him as a friend and protector of the Lapps who was always interested in all investigation of this kind (the later referring to the study in question).

Publications are arenas where the practice of patrony is performed through forewords, afterwords and introductions. By referring to academic networks, to the generous funding by prominent donors and to authority figures, a book is positioned as relevant and legitimised. An extreme example of this is the included reference to a pronouncement by Prince Wilhelm, praising a book by the author.

Two individuals in the margin of science illustrate the necessity of protection - a Saami man with the name Johan Turi and a Danish woman named Emelie Demant (later Emelie Demant-Hatt). They both produced writings not defined as research, neither by themselves or others. However, their publications were promoted by more established members of society. Johan Turi was encouraged by Emelie Demant, and promoted by members of academy and by Hjalmar Lundbohm by presenting his

14 The word drabant refers to yeomen of the guard, soldiers of the Kings’s body-guard. The word have connotations to the army of the Swedish king Karl XII, at the time Svenonius wrote, a symbol of Swedish greatness and hero in Swedish history.
16 Manker, E. (1944).
18 Manker, E. (1944).
work with an impressive number of introductory references and forewords. Emelie Demant’s work about her one-year stay amongst Saami families in the area is also linked to authorities – through pictures by Svenonius, and through reference to Hjalmar Lundbohm and professor Wiklund, later head of the Swedish State Institute of Race Biology - and wrapped in explanatory forewords, one of them by her husband, professor Gudmund Hatt.

The familiarity and similarity among researchers shows a homogeneous academy regarding gender and ethnicity, and science is thus produced from a position of ethnic majority. In the material I have gone through, I have found only one author - Carl Johansson19 - who refers to material in a Saami product. Ethnic “others” otherwise appear as helping hands (and are as such duly thanked and praised), or as objects of investigation.

Integrated academia – industry, science and tourism

The layout of this study places science in the centre, surrounded by tourism (materialised as a hotel belonging to the Swedish Tourist Association), industry (concretely the LKAB mining and the railroad linking it to the global market) and aboriginals (members of a Saami society which limits are extremely difficult to define). When I presented this layout to a Saami man in the Lake Torne region he pointed at the terms “industry”, “science” and “tourism” at the chart and said “these are the same”.

Many men of science embody and perform; at the same time or at different times, positions within industry, science and tourism. The railroad constructed to transport iron from the minefields to the sea opened the area for more extensive research and tourism, and the mining company donated funds for various kinds of research – for instance, geology, anthropology and race biology. Svenonius and his colleagues founded the Swedish Tourism Association, and writers in the yearbook of the Swedish Tourism Association are mostly researchers. The location of the STF tourist hotel and the science station along the railroad follow the same pattern. Anthropologist Ernst Manker and his network represent the close connection between industry, nation, academy and tourism. The networks of a researcher like Manker were extensive and involved industrial magnates such as Hjalmar Lundbohm, centres of inventory such as the Nordic Museum, academic institutions in Stockholm, Uppsala and the Swedish Tourist Association. A number of his works as well as that of other researchers are published in yearbooks and handbooks of the STF.

If we, as Fleck,20 regard every representation as coming through embodied interpretation (eine Sinn-Bild) the position of researchers has vast implications when it comes to the formulation of knowledge. According to Fleck the intellectual spirit signifying modern sciences is expressed through worship of the ideal of objective truth, clarity and accuracy. It consists of a) the faith that this ideal is remote, b) the praising of personal sacrifices in the service of this ideal, c) hero-worship, and in d) a certain tradition. Characteristics of science are often the duty to repress subjectivity and personal references, almost modesty, and the process of objectifying thoughts.

The suppression (or denial) of positionality of a study or a mode of knowledge; tendencies that by Sandra Harding21 are referred to as objectivism, characterise the internal logic of the studies of the Lake Torne area. However, this internally unlocalised knowledge is made relevant by reference to others – heroes, precursors, colleagues, mentors and benefactors. The objective charting of land, body indexes and possible road routes presents science as neutral – its results ready to be used by any resourceful authority. One can therefore draw the conclusion that the positionality of science is explicitly expressed in relation to authority; “at your service.”

Getting access – hardships for men of science

Swedish academia is a centralised phenomenon, with higher education and research since long located in a few cities in central and southern Sweden, and only in the last decades extended to other regions. Questions regarding different aspects of Lake Torne area were formulated in these academic environments closely connected to the centres of different kinds of power regarding legislation, military, economy and culture. In this centre of power and knowledge expeditions were organised, integrating nationalistic and scientific ambitions. In spite of the similarities between Sweden and other

20 Fleck, L. (1997).
Nordic countries, there seemed to be a Swedish self-representation where Swedish expeditions to a higher degree were dedicated to science – accusing Danes and Norwegians of adventurous boyishness.\(^{22}\)

Lacking resources for larger colonial enterprises but sharing a European expansionistic tradition, Swedish scientists turned north towards the Arctic region but also to sub-arctic regions within the national territory. These were regions uncharted, unexploited by agriculture and industry, and they offered targets for scientific exploration. However – reaching these areas was a quest in itself.

Should one need men for work or further travelling, there were, of course, some Lapp families during the summer months, but it could take several days of hard bargaining to hire pack-saddler and two or three reindeer for a few days. Indeed, there were instances of travellers being completely deserted and forced, under difficult conditions, to find their way through uncharted mountainous terrain down to the Norwegian coast. These were the very conditions prompting the idea of establishing a station for natural sciences in this area.\(^{23}\)

Getting access to the region was a matter of hardships for those men of exploration that through the centuries occasionally found their way to Lake Torne. An important step towards accessibility and the opening of Lapland for tourism was the Survey Department of Norrbotten, founded 1859. But, as the Swedish geologist Fredrik Svenonius\(^{24}\) (1852-1928) put it “the general does not win the battle by himself” and as a gesture of thankfulness he calls attention to the most faithful and reliable support from the common herd, the Saami helping hand Nila Ribbja.

There were, and still are, two main routes for visitors to enter the area; upstream rivers from the sea of Bothnia, or from the Atlantic coast over the mountains, down into the valley of Lake Torne. No wonder Svenonius in his imagination choose to fly in a balloon over Lapland, using his binoculars to inform us of the view: “deep between the mountains, dark and grave as a riddle of the future, lies Lapland’s largest lake, Lake Torne, our Swedish Lago Maggiore, more then 70 kilometres in length and in parts 9 kilometres wide”\(^{25}\).

Getting access was an interest that science, industry and tourism had in common, but it was the mining industry that could supply the recourses to build a railroad from the minefields in Kiruna, over the mountains, down to the open Norwegian Sea. Fredrik Svenonius personifies the integrated arrival and interests of science, industry and tourism to the valley of Lake Torne, and in accordance with his time, he integrated them into a nationalistic agenda. As a geologist, Svenonius at times worked for the Swedish State to make an inventory of national resources, such as ore. However, the prospecting of ore was a complicated affair - at times serving the interest of the nation, at times serving the interests of domestic industry, and at times serving the interest of foreign stakeholders\(^{26}\). As a founder of the Swedish Tourist Association, Svenonius stressed the work of accessibility as a task for the association.

To efficiently facilitate the journey, and without disturbance of the majesty of nature, arrange for the comfort and well-being of the tourists in a dignified and reasonably priced way, that should hence be a primary task for those who, with a patriotic purpose, work for the development of tourism in our country.\(^{27}\)

---

\(^{22}\) The background to this discussion can be found in Schough, K. (2002).


\(^{24}\) Svenonius, F. (1908) in Bergqvist, O. & Svenonius, F. (1908), p.278. “A giant step towards knowledge about Lapland and it being opened as a land of tourism was the Norrbotten Economic Map Issuing Office, which was founded in 1859 by the county governor P.H. Widmark senior, but “the general does not win the battle by himself”. As a token of gratitude for this epoch-making institution, we do not only convey the picture of its founder, but also of its most faithful and secure support from “the deep trails”, the Lapp man Nila Ribbja, who has been a helping hand and, in many regards, as a living, and perhaps irreplaceable, dictionary of places, from the very first to the last times of the map issuing office”. [Freely translated from the Swedish original].


\(^{27}\) Svenonius, F. (1908) in Bergqvist, O. & Svenonius, F. (1908), p.278. [Freely translated from the Swedish original].
When the railroad for ore transportation between Kiruna and Narvik was opened in 1902, access to the Lake Torne area was gained in two ways; transportation by railroad could be obtained on a daily basis, and the provisional buildings from the construction epoch could be used for tourism as well as science. In *Appendice aux Observations Météorologiques Suédoises. Vol. 48, 1906* it is stated that “the small research establishment in Vassijaure at 68 25’N and 18 11’E, was regarded as the most northerly situated permanent research station in the world.” Increasing accessibility to remote areas, thereby moving Lappland closer to the centre of the country and closer to the open sea, is by Svenonius regarded as a subject of national importance, but he also reflects upon local aspects.

As important it is, that money is distributed to the poorer districts – and “tourist money” already constitute in many places almost the most important source of cash income – just as important is it that this is arranged in a wise fashion, so on the one hand the population does not become pretentious and indolent, and on the other hand the stream of tourists does not tire and throws itself into new courses.28

Economy is a restricting factor when it comes to tourist accessibility. Svenonius emphasises the importance of moderate prices so that Swedish youth will be inspired and accustomed to hiking in the mountains. But in order for this to have the desired hardening and fostering effect, accessibility should not become too easy. The same rather paradoxical aspect applies to science. Easy access to the study areas is of great value, but when the scientific “value” of a region depends on it being unknown, unexplored, uncharted, not influenced by certain human activities, and its natives authentic and living traditional and original lives, then the value of accessibility is successively declining as the area is moved towards central society.

**Instruments of investigation**

So they arrived – adventurous Frenchmen, bold Swedes and fascinated Danes. But of course these scientists did not come to stay. They have their permanent residence and academic work place somewhere else – primarily in Uppsala and Stockholm. At first they do not know anything about the Lake Torne area except what they had read or what others had told them. Their scientific and/or personal curiosity had risen from these encounters, and for a shorter or longer period of time, they will now do research in this distant region. And how will they go about this business? I will borrow Bruno Latours question and answer to structure my description and understanding of this event:

How do you act at a distance on unfamiliar events, places and people?

Answer: by *somehow* bringing home these events, places and people. How can this be achieved, since they are distant? By inventing means that (a) render them *mobile* so that they can be brought back; (b) keep them *stable* so that they can be moved back and forth without additional distortion, corruption or decay, and (c) are *combinable* so that whatever stuff they are made of, they can be cumulated, aggregated, or shuffled like a pack of cards.29

The logic of fieldwork is complex and diverse, its components can be analysed in a number of fashions. Before I discuss some of the spatial aspects of how researchers in the Lake Torne area have made distant objects mobile, stable and combinable, there is grounds for mentioning something about the most fundamental instrument in this process – the body of the scientist. Not all studies concerning the Lake Torne area required bodily presence by the researcher himself. Through chains of different instruments and individuals, information is transformed and passed on. There are a few things to be said about the character of the embodiment - as it is attributed by researchers to themselves and others - in these chains.

**Bodies of science – increasing corporeality with distance**

Although it is inevitably a bodily experience to travel to the Lake Torne region, once there, the bodies of researchers hardly appear in their accounts of observations. References to bodily capacity, to

restrictions of senses or embodied experience are rare, if it occurs at all. There are notes such as “you can see”; a statement actually referring to the reader, but the subject of knowledge – the researcher - does not appear as an individual. Once access to the field is achieved, the vulnerability suggested by Svenonius30 regarding “travellers being completely deserted”, seems to be mastered. With the exception of one or two statements of anecdotal character by anthropologist Ernst Manker such as “With the solid fuel we have shovelled into our bodies”31, there seems to be no corporeality involved in the production of knowledge. However, reference to human embodiment is not absent – it just does not apply to researchers. Instead, mentioning of human embodiment increases with the distance from the author. Links in a roughly defined chain of groups connected to each other and to the researcher are, starting from the researcher; a) “helpers”, such as vicars of the Lapp parishes, the nomadic school inspectors, schoolmasters and schoolmistresses, and Lapp bailiffs, b) ”helping hands”, such as guides, carriers and lenders of lodging, c) ”informants”, such as settlers and nomads, and d) ”objects of information” referred to by informants, such as other individuals (whether alive, historical or mythical), and finally, the informants themselves. The increased corporeality of “helpers” (compared to researchers) is related to their bodily presence in the area, but also to personal character.

It will be observed that A shows a tendency to measure the head length fairly liberally (table 8). It further appears that D throughout tends to get his measurements relatively small (table 8c). This result is not surprising. D is known to be severe, “firm-handed”, in his examinations. D’s face breadth measurements are particularly low.32

“Helping hands” are ascribed embodied knowledge and physical capacities beyond and sometimes of another character or essence, than the researcher; “as insusceptible to the cold as to the mosquitoes in the summer…”33. “Informants” (a category often overlapped by “helping hands”) have bodies of interest for scientific description and analysis. Emelie Demant-Hatt refers to their embodiment as of another time and of another species.

there was something primeval about this sound young girl with her axe in her belt, something of a young animal in the calm, smooth movements…

…his body is sound and supple, he is strenuous in leap and gait as the wolf and the bear. In the winter time, he prefers to dress in white like the hare and the ptarmigan.34

In studies by the Swedish State Institute of Human Genetics and Race Biology35, body index is referred to systematically and in detail. Stature, head length, head breadth, head index, minimum frontal diameter, face breadth, morphological face height, morphological face index, bigonial diameter, head hair colour, eyebrow colour and eye colour is noted in numbers and standardised scales. In a Swedish Tourist Association publication by anthropologist Ernst Manker, the reader is informed of bodily qualities such as short stature, relatively short legs, light skin colour with brownish tone etc. and the question is raised; “are the Lapps a beautiful or ugly people? An indiscreet question demanding a discrete answer…”36 Earlier in the century opinions were more directly pronounced; “Their features are usually rather ugly”37, but on the other hand, the body was described as rather proportionate. The bodily survival skills of new-borns are challenged at an early age, the cold environment supposedly promoting a natural selection, a result of the weaker fading away short after birth.38

Closest, but more sporadic, references to body parts are made in informants’ stories about someone else retold by researchers, as for instance the body parts of the Stallo troll colouring the water

31 Manker, E. (1944) p.60.
33 Manker, E. (1944) p.64. [Freely translated from the Swedish original].
35 Dahlberg, G. & Wahlund, S. (eds), (1941).
36 Manker, E. (1947) p.44.
of Lake Stalojauratj yellow. The Saami man Lauras Vulli in the story would also have a body, since Stallo promised the head of Lauras Vullis to Lake Torne.

This gliding scale of embodiment can be regarded as extended towards other instruments of investigation and materialised techniques of analysis, blurring the borders between man and apparatus. This blurring is not necessarily included in a liberating agenda of the kind that Donna Haraway advocates, but can still be helpful in analysing scientific practice.

**Packing information - maps and matrixes as suitcases**

In order to supply research projects about the Lake Torne region with empirical data, it is necessary to “bring the land back” to universities and research centres. This rather “self evident” accumulation process involves, according to Latour, the packing of field information into portable units, stable enough to be transported. Field notes, sketches and drawings, photographs, and audio recordings are examples of such packed information used by researchers. I would however like to emphasise the role that maps and matrixes play in this process in the Lake Torne area. By using maps and matrixes for packing information, the task of producing combinability is prepared.

Mapping is a concept of both concrete and metaphorical significance in science. Mapping in a more cartographic sense plays a substantial role in the studies of the area; Carl Johansson charts cult centres and capture pits and Sten Rudberg charts diffusion of settlements, for instance, both of them using official maps as substratum. As by Godlund and Rasmusson, map-making as inventory is sometimes combined with planning, so those different possible future alternatives are marked onto the substratum. Such a “contribution to applied geography” has the purpose to “report on the facts, especially from the point of view of prognosis”. From prognosis, the step towards simulation is not far away.

Since the information can be manipulated it is possible to simulate future effects on the environment caused by human activity, just as when an aviation student uses a flight simulator to practice manoeuvres in the air.

Matrixes can be regarded as included in a map construction process, where classification and systematisation of data are related to spatial location. In this sense, today’s databases from which digital maps are printed make no exception. The information consists of two fundamentally different groups – data concerning quality (expressed as codes) and of location (expressed in different dimensions). One can then play with these sets of data, allowing numbers be illustrated by height etc. One can guess that researchers make their own matrixes or tabular forms as part of their work towards a map construction. It is, for instance, reasonable to assume that Sten Rudberg wrote down in tables or in systematic protocols if a settlement was built or inhabited at different points in time. The most impressive and clearly accounted for matrix concerns people.

There is hardly any other country in the world where the conditions for attaining the desired result, are so favourable as in Sverige. This is largely due the circumstance that in her clerical and parish records, which, ever since about 1750 or somewhat later, have been meticulously kept by the clergy, Sverige possesses material for researches in race biology unsurpassed and inestimable in its completeness and reliability, even when the nomads of the country, the Lapps, are concerned.

---

Based on Clerical Registers, the research project dedicated large amounts of work to constructing stable data in the form of "Family Register Cards". With the help of these cards, both individuals and individual attributes could be categorised and compared, and relationships be identified.

In order to make information combinable and possible to compare internally and externally, figures used to express data must be mathematically defined. This recalculation and data transformation encourages development of techniques and instruments, which just as scientific results are of general interest for other researchers.

We have not wished to encumber the available space with an account of the special methods used in drawing up the tables for the present investigation. We intend, however, to give a description of a new-constructed calculating apparatus, "calculating disc", which has been designed for computing time intervals (computations of age etc.), as it may be of a more general interest. It has, as a matter of fact, already been used by other investigators. 49

The successive development of scales, standards, and calculation devices follow the development of science. It is therefore not surprising that it can be thought of as a sign of up-to-date research. Leaving behind the sloppiness of irregularly stretched measuring-tapes, faces can today be measured on data screens. In both cases, precision is never definite, but the ambition to keep irregularities under control and estimated is shared. In this style of thought, expressions such as “beautiful” or “ugly” bears no meaning, as long as it is not defined by standardised components. This shift towards combinability is especially evident in the works of the Swedish Institute for Race Biology. Between the works published 1932 and 1941, the shift towards “modern science” is a clear cut.

It is through maps and matrixes representing the Lake Torne area in standardised form that features of the region are made combinable.

If there is to be any point in trying to restrict the number of reindeers through directives given centrally, directives, these directives, such as the highest number of reindeers permitted, must be based on a uniform scientific method that is applied in the entire reindeer grazing area. 50

Whether the ambition is internal or external comparison, the process of data production can be made more or less efficient, thus making time an important factor. The reason the researchers (including myself) are in such hurry is according to Latour that they/we are not interested in this place per se, as they/we are in bringing it back. Fieldwork can be thought of as a spatio-temporal practice, and there is a “built-in” logic to reduce fieldwork.

Time did not allow the investigation to be more than a general survey. With the aid of photographic and cartographic material, however, it was possible to see in advance which routes could be assumed to involve road-building difficulties and the field studies were then made more exhaustive within these sections. 51

Besides the tendency to ”hurry back”, time can be a factor in the process of acquiring objectivity, or distance. By reducing and controlling contact with objects of study, researchers attempt to attain a picture “from all sides”.

With the purpose of keeping travel costs down at a minimum level, the interviews were conducted according to a carefully pre-set itinerary. The interviews lasted between 15 minutes and 2 hours depending on the role of the respondent. All individuals contacted consented to being interviewed. Thus, we had no falling off. From a critical perspective on sources, it should be emphasised that the persons interviewed of course spoke in their own cause. In order to obtain an overall picture of the existing circumstances as comprehensive as possible, we often interviewed representatives of

49 Lundborg, H. & Wahlund, S. (eds.), (1932), p.127. Some of you might have come in contact with this device. Length of pregnancy is in Sweden calculated with a similar calculating disc.
conflicting interests during the same day. We attempted to compile the viewpoints we had received as quickly as possible, and the results were thereafter discussed within the research group. One way to think of the instruments of science is as extended bodies, constructed to link centre of knowledge to the object of inquiry, but with the aim to reduce the effect of corporeality. Instruments produce both closeness and distance.

**Defining the object – talking about space and people**

In the following section I will return from the processes of research in the Lake Torne area to the object of study itself as it is defined and related to by the researchers in my material. The matter of classification in relation to location, a matter structuring the art of cartography, requires an extended discussion in the case of the Lake Torne region. In the following section, I will concentrate on the researchers’ task of defining space and people, but the line of argumentation would be relevant to other phenomena also, such as geology or botany for instance. I will regard the relations between science, space and people as relations of rulings, as these relations are part of the practice of naming and definition. We will follow one partner in the relational choreography we here draw upon – the researcher and author – by interpreting their answers to questions such as “What is (the use of) this place?” and “Who are these people?”

**Relational location**

Locations in the Lake Torne area are defined in relational terms. As the researcher approaches the unknown, he makes comparisons with what is already known. The reindeer livelihood utilises around 40% of the total land area of Sweden. Sometimes this comparison enforces difference, as when Westerlund enforces that the birch region in the Torne Lapp District is the most desolated and barren there is. He presents the feeling that we are placed in a new, unknown, world, and that the birches have a strange, dwarfed appearance. But sometimes the comparison enforces similarity with other parts of Sweden, making it “homelike”;

> it was easy to assume that the entire team came from a fishing village somewhere in Bohuslän, had not some of the boys been wearing kolts and Lappish caps

And sometimes parallels are drawn with magnificent parts of Europe, pointing out that “we” have something just as great;

> Deep down between the mountains, dusky and solemn as the riddle of the future, lies the largest lake of Lapland, Lake Torne, our Swedish Lago Maggiore, more than 70 km long and in some places 9 km wide

Location is also constructed as relational in a manner referring to a defined substratum, an already existing map or database. In this way information is linked to co-ordinated space. “About 700 meter south of”, “west of”, or “at the cairn” refer to markings at the substratum map and written directions of location, making it possible to bring along information, store it and return to the identical spot later.

Another aspect of the way space is treated as relational concerns regions. Regionalising space is a process where certain areas are delimited from each other by means of borders. These regions are either administrative regions which limits are marked on official maps, such as the country of Sweden, the county of Norrbotten or the parish of Jukkasjärvi. Regions are also constructed as study areas, as

---

53 For an extended discussion of the practice of making unknown spaces comprehensible by comparing to what is already known, thereby establishing it as a norm, see Tryselius, K. (forthcoming).
“around the Nordkalott route” (between Kiruna and Narvik). Reindeer herding however is not so easily regionalised, the limits and character of an area fluid and changing over time:

The reindeer herding is in need of different types of land. These areas all have qualities that make them valuable from different points of view. Examples of such areas could be calving lands in southern hillsides, winter grazing areas with little snow, moors rich with lichen, moors rich with grass and herbs within the summer grazing areas, river crossings where the ice freezes over early, and wading and swimming places with calm waters. 58

Included in the construction of regions is the choice of scale. By the process of scaling space, Emelie Demant-Hatt59 gets as close as “inside the hut” and “onto the ground outside the hut”. An intermediate scale including the mountainous area of northern Sweden is common, while global outlooks are scars. Lundborg is in this case an exception, as he quotes a Swedish geographer on the concern of population surplus;

Decades ago, Professor Otto Nordenskjöld in Gothenburg emphasised how desirable it was, well, how necessary it was, that colonial land was distributed as required to each vigorous group of civilized people. Colonies should thus serve a purpose higher than to become political issues of controversy between great powers that previously have grabbed hold of as much as possible with no consideration of the needs and desires of other states. The colonial problems have to be resolved in a different way than before60

More recent publications also refer to the wider globe, since the area is appointed an "International biosphere area"61.

The relationality mentioned above is active in the process of applying name to space. At times authors borrow Saami names, as when Demant-Hatt uses "the sea country” about the Norwegian coast. In one sentence, Svenonius calls the railroad “that strange iron string”, thus positioning himself as a Saami in a state of wondering. But the decentraling of position, the instantaneous eccentricity is never followed up. It glimpses by as a play with words, never as a shift of worlds.

**Naming them**

The Lapps themselves refer to their own people as sameh or sampelatjah (sing. Sapme, sapmelatj). In Swedish, they prefer to be called the people of the fjeld. They consider the denomination Lapps as disparaging.62

Naming the object of investigation is a privilege of the author. Although the people concerned might have a different opinion, the right to name them is not questioned. Manker can be considered a master of naming. He uses epithet such as; Nomads (1931), the Lapp man (1938), People of the land (Markens människor) (1944), Swedish Mountain Lapps (1947), Forest Lapps (1968), Saami people (1971), People of eight seasons (1972), and Fellow Humans in the North (1978). But after all, he points out, a majority of languages use the term “Lapp”.

Through the Swedish language, it has spread to other European languages. Only the Lapps themselves have not acknowledged it; they have their own name, sameh (sing. Same or sapme), and as you may know, recently, they have energetically strived to have this authorised with the Swedish form samer.63

Additional definitions of people are nomads and nomad’s wife64, the later adding a gendered aura to the former. In the same gendered manner is the term reindeer herder used, reserving it to men. The

---

60 Lundborg, H. (1934) p.49.
Saami society is also referred to as “stake holders”, as Same ätnam (Saami country in Samish), and as reindeer herding, by Bäck et al. People as object of inquiry are also defined as “race”, a term of science successively developed.

The division into nomads and settled, of which an account has been given in the preceding chapter, can be considered as a division according to conditions of life, but can also be considered as a division into »race» groups.

“Purity” and the degree of “mixture” or “progressive denationalisation”⁶⁵ are central. In the general summary by Lundborg and Wahlund⁶⁶ it is stated that the nomad Lapps are to be considered as a race-mixed population, where the correlation between the anthropological characters has more or less dissolved. In another work from the same institute, but nine years later and by other authors, it is stated;

The Lapps, however, are extremely homogeneous, from a racial point of view, and probably there are few population groups which might be looked upon as a separate race on equally good grounds.⁶⁷

The shift of scientific agenda is obvious in the later work from the institute. The authors point out that there is something wrong with the methods and conceptions held by earlier anthropologists, their concept of “pure race” would be meaningless unless it would signify a race ideal never to be observed.⁶⁸ The inconsistency of Lundborg’s definition of race is not difficult to spot, as seen in the example in figure 3, where three young Saami women supposedly present three races of the North at the same time.

Figure 3. ”The three main races of the Nordic countries. Three Lappish girls. Finnish type to the left, mainly Swedish type in the middle, and Lappish type to the right.” From Lundborg, H. (1919), printed colour poster.

⁶⁴ Lundborg, H. & Wahlund, S. (eds), (1932) and Dahlberg, G. & Wahlund, S. (1941).
⁶⁵ Lundborg, H. & Wahlund, S. (eds), (1932) and Dahlberg, G. & Wahlund, S. (1941).
⁶⁶ Lundborg, H. & Wahlund, S. (eds), (1932).
Race as a concept grounded on empirism and categorisation rather than relative ideals took over.

Race is an isolate or a number of isolates which have some genetical characters which distinguish them from those of other isolates. The differences can be of two kinds. If absolute, the constituent individuals could be sorted out again in the same way after being mixed up; and we can then speak of races of the first degree. If the differences are relative, individual diagnosis cannot always be made. This test does not apply and we may then speak of races of the second degree. To this extent the conception of race is vague; and it is not possible to define the smallest difference which justifies us in speaking of two races. Nor is it always possible to make a clear-cut distinction between races of the first or second degree. Two conclusions follow from this. 1. We are not entitled to assume the existence of more differences between two races than those which already have been found. 2. We are not entitled to assume the former existence of purer races with more definite delimitations than those which have actually been found and investigated.69

The process of racialisation is embedded in various more or less formalised ideologies, involving diverse topics such as reference to German Nazism70, “authenticity” (‘a Lapp should be a Lapp’ type of policy)71, Mendel genetics72, and peace in Europe;

If it is realised that racial differences between European populations are, as far as we now know, unimportant, there is one reason less for hate between nations.73

I will not intensify the discussion of racialising ideologies in this paper, but rather point out an interesting geographical aspect of the concept of race in the Nordic countries in relation to the Lake Torne area. The Nordic race is here presented as the “weakest”. “Nordic” in this case seems to imply a racial definition rather than a geographical definition, disqualifying both Finns and Saami people as Nordic. This “idealistic” racism makes it sensible to chart on a map the relative intensity of the Nordic “race”, using the empiristic covariation between different quantitative measurements to do so.

---

70 Lundborg, H. (1934).
71 See for instance Manker, E. (1944), p.49 and p.64.
72 Lundborg, H. & Wahlund, S. (eds), (1932) and Dahlberg, G. & Wahlund, S. (1941).
73 Dahlberg, G. & Wahlund, S. (1941), p.34.
**People and place as one**

The transference of meaning between the significance of space and the significance of people involves the borrowing of structures of thought, from space to people, from people to space. In a number of studies the view of space overlaps the view of people. Manker calls the Saamis “people of the land” as opposed to farmers who would be “people of the soil”\(^{74}\). Bäck et al notes that “mountain Saami villages are space demanding”\(^{75}\). Demant-Hatt also makes the observation that people belong to the land.

What stance does the author take towards place and people as integrated? If we revisit those positions of knowledge that produce advice, we will find ambivalence between patriarchal, empathetic and reasonable arguments towards space and people. It is considered a matter of honour to protect “him”, child of the mountains and of the North.

These children of the fjeld and the most northern region are a small but valuable part of the Swedish people, their cause in relation to other people and to foreign powers should be a cause for the entire Swedish people.\(^{76}\)

In this way, Bergquist\(^{77}\) considered it a matter of humanity and honour for the Swedish nation to take the steps necessary to protect the Saami people to a certain degree, although a certain amount of pressing was reasonable. As a matter of fact reindeer herding should be supported in those areas where no other livelihood was possible. The same economistic arguments are held by the County Board of Norrbotten länsstyrelsen i Norrbotten almost a century later;

In the Programme for Rural areas for the county of Norrbotten (1991-03-13, p. 25), it is pointed out that the number of reindeer herders is large in relation to the maximum number of permitted reindeers. The county board estimates that 70% of Saami families have less than 300 reindeers. Without income from other jobs, these enterprises are not profitable. Therefore, the county board suggests that, in the same way as with agriculture, external rationalisations, that is, mergers into larger and more economically sound enterprises, and internal rationalisations, for example, lowering the operative expenses and increasing the slaughtering quota, will be performed. Support feeding of the animals result in a higher degree of tameness, and at the same time, the slaughtering catch increases, which should be beneficial to the Saamis. The county board also states that the Saami people must increase their commitment to primarily the tourism business.\(^{78}\)

The authors take positions where it is possible to weigh regions against each other, and to place the small besides the large, the whole. The main stream of thought about the Lake Torne region and its people is that it is “ours”. Holding this wider view in thought, it is reasonable and good regional economy to encourage reindeer herding in areas where nothing else presents efficient land use.

Let the nomads live their life in forms so well suited through the seasons, let them be useful in their own way, thereby they will bring forth values, which entitle them to live side by side with neighbouring people.\(^{79}\)

**Concluding a beginning**

Some of the aspects constituting spatialities of knowledge production in the Lake Torne region have been presented above. I regard the presented knowledge production, this representation of the region of Lake Torne, as intensely active in the production of space, and thereby also in the representation of people.

---

\(^{74}\) Manker, E. (1944).


\(^{76}\) Bergquist, O. (1908), in Bergqvist, O. & Svenonius, F. (1908). [Freely translated from the Swedish original].

\(^{77}\) Bergquist, O. (1908), in Bergqvist, O. & Svenonius, F. (1908). [Freely translated from the Swedish original].


\(^{79}\) Bergquist, O. (1908) in Bergqvist, O. & Svenonius, F. (1908), p.164. [Freely translated from the Swedish original].
So what is the use, and the meaning, of the Lake Torne region based on the interpretation of the research described above? One conclusion that can be drawn is based on the parallel between the comprehension of space and of people. Space in the Lake Torne case is regarded as a potential resource in different ways - as museum, as recreational space, as reindeer grazing area, as untouched nature. The practice and ideology of land use have direct and indirect implications for how people are perceived. The close connection between how space and people are conceived and presented makes it reasonable for us to be attentive to how geography is constructed.

The question of land being “ours” is another matter requiring further development. Spanning between sentimental patriarchy and rational regional economy, there are positions of management and counselling where the manner in which the Lake Torne is economised show links to the Linnean cameralism that Lisbeth Koerner discusses:

Whereas classical economists advocated one single, ungoverned, yet self-regulating global modernity, and whereas Romanic antimodernists hoped for an infinitude of custom-governed, local, traditional communities, cameralists strove for rationalistically governed autarkies. Their now largely forgotten model of society I term here cameralist concept of local modernity. The Lake Torne region should be wisely managed and used in a manner benefiting the whole Swedish country. This could at times mean that reindeer herding should be promoted, at times it should not. To certain areas should accessibility be promoted; to other areas it should not. Since people are “race mixed”, “denationalised” or “merged into larger and more economically sound enterprises” it is important for science to save information – “before it is too late”.

Concluding the beginning of this case study of geographies of science, I hold a number of spatial concepts to be valuable in building a deeper understanding of spatialities of knowledge. Relational location, maps and matrixes as suitcases, scales, and positioned definitions are terms implying external links. As I proceed with this study I aim to look inwards – to the everyday practice of “stationing science” in a local community.

References


**Sources**


**Author**

Dr. Katarina Schough
Karlstad University
Division for Social Sciences
Department of Geography and Tourism
SE-651 88 Karlstad Sweden
Katarina.Schough@kau.se