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Norwegian Railways ca. 1850-1890: New Technology and Cultural Change.

Introduction

I am working on a project that aims to analyse the cultural integration of railways in Norway in the period from the 1850's to the 1880's. My thesis is about how different conceptions and ideas of the railway was interpreted, changed and was integrated as a part of the way people of the age thought upon themselves and their age. The railwaybuilding itself is not the main focus, but rather how different "cultural constructions" vitalised both engineers' and politicians' plans and peoples understanding of what a railway should be.

Historical writings on Norwegian Railway have to a great extent focused on the political, economic and functional aspects of the railway. These are important and necessary aspects to understand the railways' introduction and development in Norway. But concerning the cultural aspect of railways less historical research has been done. When the social and cultural sides have come into question, they have been discussed almost entirely as *consequences* and *effects* of the railways' development.

There is a comprehensive international literature on railway history, which stretches over a wide range thematically and chronologically. Traditionally these writings have also mainly focused on the technical, economical and political aspects. Quite a few works have also accentuated the cultural history of railways, and the railways' relations to modernising and cultural change. But very often they talk about the changes that the railway *produced*, and thereby neglects important elements and the interaction between technology and culture.

There are many books and articles that discuss cultural aspects of railways and railwaybuilding. But it is almost entirely about cultural *consequences* of the railway. It is about how this mean of transport led to certain consequences concerning growth and changes of towns and villages, how the local society received new impulses from outside, and how new professions and social relations came into being. These are of course interesting and important matters. In a book by the English journalist Nicholas Faith from 1990 the writer is

very ambitious when he wishes to show all parts of the cultural change that the railway led to. But even the title, *The World the Railways Made*, can tell us that this is written in technology deterministic angle. The railway makes the changes, and the society is passively altered by it. Most books of this kind do not take into account the interaction that took place between railway and society.

The English historian Jack Simmons writes in his book *The Victorian Railway*, that the railway has been "too much treated on its own, as a piece of mechanism, a device." (Simmons 1991, p. 10). He tries to do something about this, by looking at the railway through the eyes of those who experienced it between 1830 and 1914. This is a fascinating and informative story about the cultural aspects of the railway. But when he studies "some of the changes it *produced* in their habits of looking and thinking and feeling" (the italics are mine), he in my point of view neglects some important elements of how the railway was interpreted, understood and formed in the interaction between technology and culture. If one wishes to depict the role of railway in society and the cultural aspects of the railway, one has to take in account not only the changes that the railway produced, but also how the culture formed the railway, both mentally and physically.

I think the Canadian sociologist David John Tippin takes a step further in his doctoral thesis *The legitimation of social change: Ontario railways and the idea of progress, 1841-1884*. Here he shows how the plans and ideas of the railway entrepreneurs were received and reinterpreted by the rural population in Ontario in this period, and how this made a new understanding of the railway's function and role, especially in association with ideas of "prosperity" and social change. (Tippin 1983).

The German historian Wolfgang Schivelbusch looks at the railway in a different perspective in his book *Geschichte der Eisenbahnreise: zur Industrialisierung von Raum und Zeit im 19. Jahrhundert*. He studies the railway journey to show how "our perception of distance, time, autonomy, speed and risk were altered by railway travel" (Schivelbusch 1977). His goal is to write "a history, not of technology, but of the surprising ways in which technology and culture interact." Schivelbusch's main point is that the technology becomes both a medium and an instrument. The railway was, at the same time, both a way to look at the journey in a new manner, and an instrument to do so. I think Schivelbusch's approach to the study of railways is very fruitful. A more recent, and a very good contribution to this way of writing railway

history is Michael Freemans book *The Railway in the Victorian Imagination* from 1999, which is "... a study not of railways *per se*, but of their cultural relations. It is an examination of the railway as a cultural metaphor" (Freeman 1999, p. 19).

Schivelbusches viewpoint has much in common with recent theories in the STS-field, and a field that is very close, the "new cultural history". Because these are very large and extensive theoretical fields, I will not go into details about the different trends, but only mention very short a few main points. In both the history of technology and the new cultural history, the importance of "meaning" and interpretations are emphasised. While historians of technology naturally focuses on scientific and technological change, new cultural history is more concerned with the society and its culture in a wider range. There are therefore not any big contradictions between these perspectives and theories, and I will stress that the railway should be studied as something that forms and is being moulded, which is a consequence of something and which at the same time creates consequences. This perspective is put forward by Thomas P. Hughes in *American Genesis* and Carroll Pursell *White Heat, People and Technology*. (Hughes 1989 and Pursell 1994)

How can we find fruitful ways to analyse the railway as cultural phenomena? This of course depends on what aspects of the railway we wish to study. The railway is an extensive phenomenon, and there are almost countless elements and aspects by this phenomenon which we can study. The notion "railway" is in itself not unambiguous, and is being used in many meanings. It could be the rails itself, it could be the rolling stock, the locomotives and wagons, or it could be the whole system of lines, material, stations, or it could be the railway as an administration and business-system, the railway as an organisation and as a place of work. One can also study political processes that leads to the building of railways, one can look at working process, the workers and their life, the engineers, the economy, the technical matters, peoples experience of travel, consequences for local societies etc.

But if we wish to grasp something more than the concrete and rational questions in railway history, how the railway interacted with ideas and conceptions in society, how such conceptions again played a part in the forming of the railways, then we have to go further than looking only at the functional and technical aspects of trains and railways.

The American historian Carroll Pursell writes that we can look at the technology as man's way to organise its existence. On one side the technology is a tool that we can use to build and develop, and we can use it for either controlling or destroying. On the other side the technology is also a "lens", through which we can look at both ourselves and the rest of the world. "These objects and products allow us to *do* things; and they allow us to *say* things - about who we are, what we value, and our place in society." (Pursell 1994, p. 14).

We can quite easily transfer this to the railway. With the railway people, quite obvious, got a new mean of transport. At the same time, this new way of travel gave people new experiences, and a new to understand and experience travel. The most striking difference from former transportmethods was maybe the speed, and that it was possible to travel over long distances in a short time. The understanding and experience of time and space changed its character, something that Pursell emphasises. If we are to reach a deeper understanding of the development and growth of railways we have to take in consideration both these sides, the railway both as a "tool" and a "lens".

The cultural integration of railways in Norway

The Norwegian railways can be connected to many different hypothesis and assertions of historical development and change. Some common claims are that the railways revolutionised traffic and communication in Norway, that the railways was the prime mover for economic growth and development and was a core element in what is spoken of as "the modern breakthrough" in Norway in the years after 1850.

These assertions may be right, but they show strong traces of the fact that the interaction between technological changes and other changes in society are not too good examined, and are often technological deterministic. It is often presented as though the new technologies comes first, modernises, have certain consequences and influence on the rest of society, which in turn is being changed as a result of the new technology. Changes in society are made a reflection of the technological change.

On one hand the railway was a result of certain technological, economical, political and cultural prerequisites. On the other hand, the railway had a great impact in the same fields.

One can say that the railways were both shaped by the culture they were introduced to, and that they in a very distinct way left its mark on the culture it became a part of.

My focus is on how the people of the age experienced the railway as for example an economic mainspring or as a vital element in the modernising, not in what degree it actually had such a function. By applying theories and perspectives from the New Cultural History and the STS-field on the interaction between technological development and cultural change, I want to study the forming epoch of the railways in Norway. Central in this kind of theories are the focus on conceptions, meanings and cultural constructions.

With this kind of theories I am trying to analyse how the railway not only had “power” to make an influence on Norwegian culture, but my challenge is more that of describing how this technology interacted with a number of other factors which together changed Norwegian culture and society. Analytically this means that I am approaching the subject as an interaction between two kinds of simultaneous and co-operating processes, namely influence and submission. The railway, an imported, foreign technology, was integrated in a new cultural context, the Norwegian society, and was simultaneously shaped by and had a moulding influence on Norwegian culture and society. A possible way of studying this, I think, is to analyse the meeting between railway and society (culture) as a kind of "negotiations" between a row of different actors on different levels. How this happened and how these processes developed is what I empirically am trying to examine through analyses in limited fields and cases. I am studying the public discourse and the political debate, and how the people of the age talked about railways, and how these streams of meanings and "pictures" of the railway formed the Norwegian railway. These processes and changes can not be studied within one limited group or only at a certain time. These processes took time, and so did the development and changes in people's reflections and minds. The railway as a phenomenon was "constructed" and understood by many different people and groups. What kind of positive and negative effects did people expect and fear? Which ideas of modernising and progress was hidden in different perceptions of the railway, and in what way was the railway a part in the moulding of such ideas in nineteenth century Norway?

I have divided my thesis in four main phases. The first phase is up until 1854, when the first railway was built, the second from 1854 till 1865, the third from 1865 to 1875, and the last one

goes from 1875 to ca. 1886. I will go shortly through the different phases, mainly the second, and try to give examples of what I mean, and what kind of questions I have been studying.

I. 1845-1854: What is a railway?

As early as in the end of the 1820ies, when the first railways was being built in England, it was discussed to build a railway in Norway. But most people did not take such ideas seriously. Leading politicians and later railway entrepreneurs laughed at the thought of building railways in Norway. The nation was too poor, there were too many mountains and lack of people and capital. Even ten years later, in 1839, Anton Martin Schweigaard, who later were to become one of the leading Norwegian politicians and the one of the main spokesmen for railway construction, that "Norway will never have railways". But in 1845 the Norwegian parliament decided to examine if it was possible to build a railway between the capital Christiania (now called Oslo) and the lake Mjøsa, and in 1851 the building of the railway could begin. The first Norwegian railway was officially opened in 1854. It was built for log transport, but immediately became a success also as passenger carrier. Before it was built, many people still meant that it would be the only Norwegian railway. But shortly after the opening, proposals of new lines were put forward. And in 1857 the building of three new lines started. A new view of the railway had developed in very short time, as a result of the first few experiences with this new mean of transport.

II. 1854-1865: Economic growth and prosperity

The transfer of technology

My first focus in this phase is on the railway pioneers, the first engineers (and central entrepreneurs). Technologytransfer and the meeting between foreign technology and the domestic culture is the main focus in this part. The Norwegian railwayentrepreneurs imported both technology and ideas of the railway from abroad, and constructed their own picture of the railway, both physically and mentally. I am examining how Norwegians began to use and actively transformed the foreign technology, and how both railways and the conceptions of the new mean of transport was altered and shaped in this meeting.

When the first railway was built in Norway in the early 1850s the expertise was imported from England together with the materials needed. But when the next lines was constructed a few years later, the country itself was able to supply itself with engineers and material.

Because of the Norwegian nature with its high mountains and deep valleys, they had to develop distinct Norwegian technical solutions and material.

Norwegian railway engineers imported a foreign technology and rebuilt it after Norwegian conditions. But the Norwegian technical solutions did not only come into use in Norway. Foreign engineers came to Norway to study the Norwegian narrow-gauge railways, they became an ideal and a pattern for many other countries, especially poor countries in Africa and Asia, but also in countries like Canada and the USA.

The main railway entrepreneurs and institutions built something else than just a new mean of transport, which connected distant parts of the country and offered better transport for man and goods. They also made new scenarios for modernising, progress and nationbuilding that had a great impact on the country. It is important to analyse what kind of visions and plans the engineers and other experts had for the railway. These pioneers were among the first Norwegians to form their own conceptions and "pictures" of the new technology. Therefore they played a special role in the process of shaping the values, ideas and meanings that came to be connected to the railway.

Nature and culture

Inspired by Bruno Latour's actor-network perspective, technological change can be seen as something that happens in a "negotiation process" between nature and culture. The promoters of the technology have to find solutions through negotiations with both nature and culture. They have to make alliances in the society to utilise the nature in a certain way, and they have to make "alliances" with the nature to negotiate their way towards their goals in society. The point is that one has to join forces with both nature and culture, two spheres with different sets of values and conceptions, and two areas where the alternative choices and acts differ. In this way nature and culture are linked up in the work of the technologist.

If one studies the pioneers phase in Norwegian railwaybuilding the relation between nature and culture was of course important. The railway was a technology that to a great extent interfered with and reshaped the landscape. The railways could not be built without taking geographical and natural considerations. The terrain set more or less clear limitations for where and how the railways could be built. The engineers could not mould the landscape according to their wishes. One had to take in account and "negotiate" with the nature. A project that was the

most desirable for the society could be stopped by a "obstinate" nature. At the same time the engineers had to take the society in account as well, and negotiate with it. Possible and practicable solutions on the "natureside" could be stopped on the "cultureside", for example by economical limitations. A railwayproject or a line that was desirable from the nature's point of view and that was easy to build was maybe not in accordance with the society's interests and goals for the railway.

These kinds of problems were maybe bigger in Norway than in other European countries where railways were built. The nature was stubborn and difficult to negotiate with, because the high mountains and deep valleys made limitations for the construction of railroads. On the other hand, the society was refractory in the sense that the economical resources were limited, the population was small and scattered and could barely form the basis of the great investments of such a big mean of transport as the railway. In the Norwegian railwaydebates one can follow such "negotiations" between culture and nature in the debates about different alternative lines and technical solutions.

III. The great railway fever 1865-1875.

The next step is to move from the constructors and see how the rest of the society reacted and responded to the introduction of the technology. In this part of the thesis I am studying what kind of picture and conception of the railway that was made in the public opinion, and how these interpretations again influenced and shaped the further development of Norwegian railways. What kinds of visions of material and spiritual development connected to the railway were made and formed in the public debate?

There were several opinions concerning what purposes the railway should serve. Local activists worked hard to get a railway line to their towns and districts, while (very few) sceptics focused on what they saw as negative effects. Different groups gave the railway different interpretations, but they all played a part in a process that shaped the Norwegian railway. For some groups economic development was the basic factor, while other people looked beyond this, and held up that the railway could "civilise" the country through modernising and the spread of urban culture and values to remote parts of the country. The railway was also a national project. It should bring the nation together, and at the same time it was a kind of material and economic

nationbuilding. Not only did the railway offer more effective transport for man and goods, but for many people it was an important element in a new way of life, the modern life.

In the first years of the Norwegian railway history, until the middle of the sixties, most politicians and local activists were concerned with the economical aspects of the railways. It had to be profitable, and it had to serve a concrete economical purpose, f. ex. the development of agriculture or industry. The first lines were quite short, they were not connected to each other, and there was no national plan to tie the lines together. But in the sixties and seventies new aspects of the railway were attached importance to. The profitability of one single line was no longer the most important thing. Instead of local business interest, higher and more spiritual goals were put in front. Civilisation, nationbuilding, the spread of modern urban values, and the modernisation of the traditional Norwegian rural culture became the new goals, and the railway became a bearer of other meanings than before.

The understanding of time and space was changed and was separated from the traditional conceptions. Artists praised the beauty of the speed in poems and paintings. For some writers the railway was to a great extent idyllic and harmonic. But the new technology was not portrayed without fear and opposition. A struggle between an old and a new culture was described in both art and public discourse.

The railway now became a central element in the process of modernisation and industrialisation, which the country went through in this period. The railways should tie the nation together and create communication both directly and in a figurative sense, by, as a Norwegian historian has put it, "intensifying the peoples communication and coexistence" (Seip 1990, s. 135). An example of this is how the later Norwegian Prime Minister Johan Sverdrup in 1869 made a speech about the "civilising power of railways". Another example is from one of the big newspapers at the time, *Morgenbladet*, who wrote that the "railways are the standard for a nations level of culture and national power". (*Morgenbladet*, June 9th, 1869). One can look at the railway as a technological miracle and something that revolutionised transport, but it also played a very important role as a symbol of progress, nationbuilding, modernisation and hopes for a bright future.

The artist and writers view

Writers and other artists portrayed the railway, and played a role in the shaping of the railway in people's minds. Not only were railways directly and indirectly a theme in art, but many artists played a prominent part in the public debates about railways. Most of them were enthusiastic over the new mean of locomotion. Aasmund Olavson Vinje was one of the most interested and enthusiastic writers and he early emphasised that railway was something else than just a mean of transport, and he therefore scoffed at people who saw the use of the railway only in economical terms. "The iron-road is rich on spirit and prosperity and like all true work of poetry it runs trough the living life, and strews flowers all around" (Vinje 1860, p.2). Both in Vinjes and other poets' work the railway was largely idyll and harmony, and it reflected a belief that the technology was good. While Vinje writes about "the victory of human spirit", another famous Norwegian poet, Johan Sebastian Welhaven saw the railway as a part of the divine and Christian plan for human existence. (Hageberg 1996, p. 55). Bjørnstjerne Bjørnson showed his ardent interest both in his novels and plays and in a strong political involvement. He participated in the debates on issues ranging from the big questions of principle till the small technical details. In the story "The railway and the Churchyard" from 1866, Bjørnson wanted to describe the conflict between a new materialistic spirit and culture and the old traditional piety. Even though Bjørnson was a spokesman for modernity, the technology was not depicted without fear and antagonism. Two of Bjørnsons other plays from the seventies describes the political debates about the railways, and many of the characters in the plays have parallels in Norwegian politicians and railwayengineers at the time. Bjørnson used the railwayquestion as a political symbol and to describe the battle between an old and a new way of life.

IV. Plan and bureaucratism 1875-1886.

The railways and its new institutions led to a renewal of the central administration, and at the same time this administration shaped the further development and integration of railways in Norway. The political system could both restrict and stimulate the railway's cultural integration in society, but the railway's entry also gave the system new challenges and duties.

The central administrative and political direction was fairly loose in the early years. The first lines were built on local initiatives and private financing. After a few years the planning and administration was integrated in the central machinery of government, was made more scientific

and rational, and new and permanent institutions were established. The establishing of these institutions were influenced of the interpretations and understanding and meanings connected to the railway by entrepreneurs and the public. Again the railway had become something else, even though the technology itself had not changed very much over these years.

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Canadian History 1850-1890. Timeline created by rwmacdonald. In History. Sep 1, 1860. Cornerstone of Parliament Laid. Timeline of all Canadian History The cornerstone for the new Canadian Parliament in Ottawa was laid on this date. Sep 1, 1864. Charlottetown Conference Begins. New Provinces Join Confederation. Prince Edward Island joined confederation on this date, and on July 20 British Columbia joined. Mar 18, 1885. See more Science and Technology timelines. Browse. Timeline categories. 4 Doing Business With the Nordic Culture. 5 Scandinavian Culture and the Forgotten Countries. 6 Swedish Culture. 7 Get a Taste of How Chris Presents, Watch his TEDx Talk. 8 Book Chris Smit as a Speaker. Nordic Culture, Scandinavian Culture, and Swedish Culture. One or None? Is this One Region? It's like this: if you are not from a Nordic culture or Nordic country, you will likely not see the differences between Norway and Sweden. Much like if you're from the US you will likely not see the differences between a Mexican and a Guatemalan. But if you are from a Nordic culture or country you will certainly see the difference between what they call the Nordic area. On the technology front, the biggest advancements were in steam power. New fuels such as coal and petroleum revolutionized many industries including textiles and manufacturing. Also, a new communication medium was invented called the telegraph. This made communicating across the ocean much faster. Also, during this time much international changes was occurring at this time. The American Revolution was occurring in the beginning part of the Industrial Revolution. The French Revolution was in the process at the turn of the 19th century.

Norway, with its population of 4.6 million on the northern flank of Europe, is today one of the most wealthy nations in the world, both measured as GDP per capita and in capital stock. On the United Nation Human Development Index, Norway has been among the three top countries for several years, and in some years the very top nation. Huge stocks of natural resources combined with a skilled labor force and the adoption of new technology made Norway a prosperous country during the nineteenth and twentieth century. Table 1 shows rates of growth in the Norwegian economy from 1830 to the present usi