



Transnational Infrastructures and the Rise of Contemporary Europe

Johan Schot

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Johan Schot and Erik van der Vleuten

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1. Introduction

Setting: Journalist interviews Gunnar Myrdal, 1st Secretary General of the United Nations Economic Committee for Europe (1947-1957) in 1968/2004¹

Journalist: Sir, the *Economist* wants to publish a special feature in one of the next issues on the future of Europe and in particular on European Integration. After the initial successful built up of the European Economic Community, we now wait for further steps in European integration. The process of integration seems to have stopped. You have been heading the United Nations Economic Committee for Europe, which has worked for the integration of Europe since 1947. What is your view?

Myrdal: Well, my view would be one of caution. May I remind you that the Cold War has not ended. Europe is divided in two self-contained blocks and many countries host military bases, troops, and enormous stocks of nuclear weapons ready for use. The main danger to Europe today is an escalation of this conflict and perhaps even a 3rd World War. In this context I believe that the very success of the European Economic Community, and other sub-regional organisations on both sides of the divide, intensifies the division of Europe. If European Integration is to counter these perils, it should strengthen the links between East and West. This is what the United Nations ECE has been trying to achieve.

Journalist: Is it correct then to speak of European integration in the case of the EEC, OEEC, etc?

Myrdal: Europe is nothing more than a peninsula on the huge Asian continent, and the split of Europe has left us in a situation where Western Europe is nothing more than a string of coastal states on that small peninsula. I always reacted to the increasingly common application of the term 'Europe' to that narrow strip and the term 'European' to its subregional organizations. This indicates an inclination which is intensely inimical to the work governments are trying to do in the European Economic Community

Journalist (skeptical): Is all-European integration a realistic option?

Myrdal: We have to make a crucial policy choice here, and my organization the UN ECE did so. We could have yielded to pressures to become a purely Western organization. Western countries constituted the majority, and in the early years Eastern countries were reluctant to participate. However, we have a moral duty to the UN to preserve the Commission as an all-European body.

¹ Based on Myrdal, "Twenty years" unless otherwise noted.

Journalist (not yet convinced): How would you achieve that?

Myrdal: The UNECE focuses on practical matters and focuses upon bottlenecks impeding trade. For instance, we hosted secret trade negotiations between Eastern and Western countries for East-West trade. There are no other fora where such exchanges are possible. It is also necessary to develop international transport in Europe and improve relations between different countries. The UNECE works on many infrastructures: telecommunication, mail, rail, aviation, road, waterways, electric power. Regarding transport, the UNECE Inland Transport Committee has been working for uniform networks of transport arteries. For instance, the *Declaration on the construction of main international traffic arteries of 1950/1956*², in negotiation with several governments, selected 21 main routes and 90 side roads to be upgraded and used for international traffic. The road system is known as the E-road system. We specified technical norms (size, max load on surface), auxiliary services, and signing. We also worked on related issues improving cross border traffic such as uniform traffic rules; uniform traffic signs; registration of motor vehicles; giving national drivers licenses international validity; organise civil liability and insurance of drivers abroad and develop a uniform insurance card; negotiate customs conventions for tourists, commercial traffic, and freight traffic. Thus, trucks do not need to be unloaded at every customs office. They are sealed in the country of departure.³

Journalist (concerned): OK, you chose a technical, infrastructural route instead of a political route to integration. What about democratic control? What we now should call ‘Western Integration’ has been criticized for technocracy and lack of democracy.

Myrdal: In this respect I agree very much with Claude Monet and the founders of the European Coal and Steel Union. Coal and steel were two very important reasons for conflict and war and were rightly withdrawn from national politics and put under the control of international organization. The UNECE followed a similar strategy. Working for integration under extremely difficult political conditions means that politics blurs practical work. The only successful negotiations are specialized technical intergovernmental organizations such as the International Telecommunications Union, the International Postal Union and so on, which managed to create niches within the administration where they can operate quite independently. The UNECE, too, prefers to work with specialists in a practical, non-political manner.⁴

Journalist Why is this technical work of UNECE not more known? Why are neither the UNECE nor infrastructural projects included in histories of Europe?

Myrdal (smiling): This relates to the former question. As to the work, the committees and their suborgans met in private and documentation was not made public. We did not keep summary records of deliberations, so that the only concern was to agree upon a report. This

² By 2004: 4 international agreements: roads (1950/1956 amendments by 7 countries/1975 European Agreement, binding legal instrument), railways (1985), combined transport (1991) and waterways (1996).

³ Marijnissen, “Internationalisering”; www.unece.org.

⁴ Blomkvist, “Roads for peace.”

greatly contributed to the effective discussion of practical problems. Stress was on the technical, nonpolitical character of the work. As to results, these were constantly underpublicized. This was partly our strategy – a protection of our useful work at a time when East-West cooperation was considered almost subversive. I also personally prefer a veil of anonymity around the Commissions work. Also, governments during the cold war downplayed their work in the commission. All this helped us to get modest results in difficult times. The press took its revenge by explaining that ECE efforts were without results, but the contrary is true.

Journalist: Interesting, this opens up a new perspective and set of questions for us. You seem to suggest that it is time that historians revise their narratives, and I conclude that we in the *Economist* should also publish more about this hidden integration process.

This interview could have happened in 1968. In that year Gunnar Myrdal - he is the one who is interviewed- looked back on his experience of working for the United Nations Economic Commission for Europe. We are citing and paraphrasing him in this stylized interview.⁵ The interview makes clear that the process of European integration is contested, and very different notions of Europe are present. To see Western Europe as the core of Europe is only one vision, although a dominant one. In addition, Myrdal observes the importance of infrastructures connecting different countries and different parts of Europe. Indeed transnational infrastructures may have been far more important than is usually acknowledged in the historiography of Europe.

Sources such as Myrdal have led us to explore the theme of this paper: how can we study the building of 20th century Europe through the lens of infrastructures? In this paper we would like to:

1. assess the existing literature on the development of infrastructures and the shaping of 20th century Europe
2. present our own research programme
3. address the issue of democracy in a history of European infrastructure building. How can one avoid a technocratic bias?

(Very brief) Literature overview

What has been written about infrastructures and the history of Europe? There are two relevant literatures: histories of infrastructures and histories of Europe.⁶ We have looked at these literatures and will not treat them in detail, but give our main conclusions.

Infrastructure studies can be found in history of technology and economic history. In the history of technology, especially since the work of Tom Hughes it is acknowledged that not only artifacts or machines, but also infrastructures or large technical systems constituted a technological front development in the 19th and 20th centuries. Moreover, it is understood that these systems had huge societal implications. The body of research that emerged greatly expanded our knowledge of infrastructure development and the interplay of technical and non-

⁵ We also used some other materials, see footnotes.

⁶ Based on an extensive literature review Van der Vleuten and Kaijser, “Networking Europe”, unless otherwise noted.

technical factors in this process. However, we find that this literature has two weak spots. First, most studies focus on a national or subnational level (including a number of cross-national comparisons).⁷ Only very few exceptions treat transnational infrastructure building: they discuss infrastructural developments in a global, geopolitical perspective, and a few collections of case studies on transborder infrastructural projects in 19th and 20th century Europe have been published by economic historians.⁸ Historians of technology have also explored transnational linking in the context of the *Tensions of Europe* programme.⁹ However, these are explorations and case studies. More systematic study of transnational infrastructure development in Europe is still lacking.

A second weak spot in infrastructure studies is that the canonical works mainly seek to explain how infrastructures were shaped by various factors and actors. They deal with technical and social, political or economic changes that are part and parcel of infrastructure building processes. Few studies, however, have looked at infrastructures as a crucial agent of wider societal changes - beyond the realm of infrastructure building. Also here we have some notable exceptions. Although these studies do not focus on Europe, they do suggest ways in which infrastructural changes are entangled with for instance nation-state building processes.¹⁰ On the one hand, these infrastructures enabled and facilitated the development of the nation-states, they helped to integrate the economy and the society and shape national identities. On the other hand, the task of building huge infrastructures also forced politicians and others to rethink their visions on the role of government in modern societies. We will draw on these studies when we develop our own research strategy.

If Europe is scarcely studied in infrastructure studies, is the opposite also true: are infrastructures a theme in histories of Europe? The literature comes in several forms; histories of nation states in Europe, 'European histories' that claim to be more than a history of nation states, and 'European Integration History' that studies the political, economical and cultural history of the European Union.

It is noteworthy that a number of canonical works in these fields recognize the pivotal role of infrastructures in the history of Europe in the 19th and 20th centuries. Some authors might even state that infrastructures represent a deeper form of European integration than political treaty negotiations, and that they determined the shape and size of the European economy and social system. Nevertheless, such observations are never backed up by analysis; neither of the development of (transnational) infrastructures nor of their entanglement with broader political, economic or social processes. They are claims that remain to be investigated. In sum, there is a gap to be filled out, and historians of technology have the tools to do that. Filling this gap might lead to a new type of European history. But what type of European history?

⁷ Studies are available on for instance Finland, Norway, Sweden, Denmark, The Netherlands, France, Germany, and the United States (Lévy-Leboyer 1988; Myllyntaus 1991; Kaijser and Hedin 1995; Van der Vleuten 1998; Verbong 2000; Van der Vleuten and Verbong 2004; for the USA among others Hughes 1983; Nye 1990; MacShane 1994; Fischer 1992).

⁸ See the work of Daniel Headrick and Peter Hugill, on one hand, and of Merger, Carreras and Giuntini et. al. , in the context of the 11th International Economic History Association Congress (1994) and of the COST 340 programme (2000-2004), on the other.

⁹ www.histech.nl/tensions.

¹⁰ Hughes, *American Genesis*; Hecht, *The radiation*; ; Van der Vleuten and Verbong, *Networked nation*; Schot and Van Lente, in volume seven of the series *History of Technology in the Netherlands*

In a new research project -Transnational Infrastructures and the Rise of Contemporary Europe(TIE)- , we plan to explore at least two other types of histories of European integration history: a geographical oriented history of the construction and use of European space, and a cultural history of the emergence of European identities.¹¹ Because of the focus on infrastructures, it does not make sense to start after the Second War World, when the official Integration project was launched. From the mid-nineteenth century onwards, a host of new transnational infrastructures were built that would heavily influence the flow of people, information, energy, goods and services between emerging nation-states and empires. These infrastructures and their resulting flows shaped the boundaries and internal structure and identity of Europe, long before Europe was an explicit political project. To study this process, the research will have to start deep in the second half of the nineteenth century. In this early period, infrastructure building focused mostly on national interests (and nation states). Yet there were several notable attempts to built transnational infrastructures especially in railroads and telegraphs.

The creation of a new European space

The research question we have put central in the TIE project is the following:

How did the construction and use of multiple new transnational infrastructures -- for example, railroads, highways, electricity lines, pipelines, telegraphs, telephone and radio networks -- shape the emergence of Europe in the 20th century?

This is a very broad question that needs further specification.

In this part of the paper we would like to explore two different research strategies that would provide such a specification. One of our main aims is to discuss the pro and cons of both strategies. In this section we focus on a geographical oriented strategy, in the next one on a strategy that focuses on the emergence of an European identity.

The notion of Europe is often used in a trivial and unreflexive way, as if it is clear what Europe is. Many handbooks on European history do not reflect on the assumptions implicated in the word 'Europe'. Probably because it is too difficult to articulate a convincing point of departure. Still, it is unfortunate because many histories of Europe make implicit choices on their time- and space frame. For example, some books include Turkey (Ottoman Empire) and/or Russia in their history of Europe, while the majority focusses on Western Europe only. Also for some books European history goes back to Greek civilisation, while for others it starts when the relatively modern concept of Europe gradually replaced the earlier dominant notion of Christianity, somewhere between the fourteenth and eighteenth century. So the notion of Europe and what it means to write a European history shifts between authors. Since it is so hard to provide a precise and shared definition of Europe, many historians attempting to write a history of Europe do not discuss the issue. An exception is Norman Davies, who in his monumental *Europe. A History* does reflect on the difficulties involved in defining Europe. He comes to the conclusion that it makes sense to focus on mediaval and modern periods, "where a recognizably European

¹¹ This project is funded by the Netherlands Organization for Scientific Research (NWO). Project team consist of four Ph.D students: Irene Anastasiadou, Sorinela Ciobîca, Frank Schipper, Vincent Lagendijk, post-doc Alec Badenoch, and several faculty members including Erik van ver Vleuten, Geert Verbong, Gijs Mom and Johan Schot. In addition we collaborate with Arne Kaijser, Paul Edwards and Tom Misa

community can be seen operating”, and also “to give equitable coverage to all parts of the European Peninsula from the Atlantic to the Urals--north, west, south, and centre (vii).” How he came to this decision is not so clear, except for his strong wish to write a balanced European history and not a Western Europe biased history.

Following this approach of the historian Davies, and also the politician Myrdall as we have seen, would lead us to a research strategy in which Europe basically is defined in a geographical sense. It refers to the Peninsula connected to the world's largest land mass called Asia. Only a choice needs to be made where to draw the line between Europe and Asia, and the Urals are oftend used for this. Following from this geographical definition, our first research strategy will focus on the construction of infrastructures **in** Europe. It would be a story of how cities, regions, nation-states and empires in this area from the Atlantic till the Ural became connected and disconnected through time. This will imply collecting largely quantitative data (and maps) on the growth of the various infrastructures over time, the size and nature of cross-border crossing, and if possible also get data on use of these infrastructures. For example, we will measure the growth of road network, and map the development and use of transnational connections. The task at hand should not be underestimated. We will be collecting data across Europe for 150 years time period, and in a century where borders of several countries changed dramatically several times and entire empires collapsed.

The main aim of such an exercise would be to find out if and what kind of European space emerged out of all the infrastructural connections. Which places became connected and disconnected and which bias prevailed in a certain period. For example we could test the hypothesis that infrastructure network in the interwar period became more dense within the nation-states at the expense of international and European connections.

The emergence of a new European identity

In this approach the assumption would be that European identities have been articulated in response to the development of transport, communication and energy transnational infrastructures and the resulting circulations and movements. Of course the notion of identity is a difficult concept. Without going in too much detail here, we assume that people tend to define themselves on the basis of a set of ideas to which they can relate positively and which they share with others. These ideas help to define people's identity, the community they belong to and also the one they do not belong to and thus want to exclude. When using the identity concept, it is also important to see that people are members of several groups, and thus will have multiple identities. Identities can, for example, relate to families, class, gender, and also a nation-state. This latter identity has become very strong in the last two centuries, and for this reason many historians have questioned the very possibility and legitimacy of a European identity. They maintain that key elements for forming a European identity, such as political legitimacy, a shared language, symbols, and a sense of history and memory are missing. However, others have argued, and we share this view, that this position is exaggerated precisely because people can have multiple identities, and a European identity does not have to be in conflict with a national one (see for example Smith 1991); One can even go further and point out that many national identities do integrate ideas about Europe from the start, and various meanings of Europe have been mobilized in the process of building nation states (e.g. French identity is constructed as a European identity) (see Malmberg and Stråth 2002). A final note is that a European identity should be conceived neither as a set of core unchangeable values nor as completely fluid and negotiable. Identities do

change, but not frequently because a lot of work has been done to reproduce and maintain certain identities, and there are embedded in institutions (procedures, rules for behaviour, routines, collective understandings, myths), and in technology. Still, actors might try to direct the identity formation process in new directions, and if effective, shifts can occur.

In research we will explore the contents of these identities, and see who is promoting specific elements, how and why, and if these European identities have become stronger and converge in the last part of the twentieth century due to the process of construction and using infrastructures. Using the now classical concept introduced by Anderson (1983) for studying nationalism, we will explore Europe as an imagined community. The construction of Europe (and Europeanness) is then conceived as a bonding process whereby people imagine that other people have the same understanding of what Europe is about, even though they have never met. We will apply the concept of imagined communities to the development of a range of various transnational infrastructures. The following questions will be addressed: What visions of imagined Europe accompanied the construction of transnational infrastructures? How can we describe their content? What was emphasized and what was marginalized? Which kind of needs, purposes, users and usages were projected? What kind of changes can be seen over time? Which aspects are embedded in the design and lay-out of the infrastructures? Who is proposing which imagined Europe? What voices are heard and what voices are silent or silenced? Whose imaginations prevail in the construction and use of infrastructure? How can we explain this outcome?

However, looking at the design of new infrastructures, standards, artefacts and other systems only neglects that the scope and nature of the emerging European identity will crucially depend on how the infrastructures were actually taken up by a range of users and in a broader sense all citizens. The construction of Europe cannot be reduced to the politics of “imagined Europe” materialized in transnational infrastructures; the research needs to take into account how a range of users appropriated them. Here, appropriation refers to the process in which users and citizens signify, reproduce, communicate, explore, and integrate these infrastructures in their daily life. The assumption is that the circulation of goods, information, services, and people brought about by the use of infrastructures created many sort of new ties among users and citizens. By using these infrastructures, users and citizens created **living communities** (instead of imagined communities) building new identities, experiences and relationships across Europe. What we want to indicate is that a concept such as imagined community tends to lead to a focus on the design and construction of a European identity through a range of Europe-building practices of elite actors. However, we also need to look at how people in their daily life do not forget and maintain their Europeanness. Here we might profit from the use of the concept of banal nationalism (introduced by Billig 1995). This concept might be used to refer to the reproduction of a sense of Europeanness in daily life. This happens through daily routines which keep people aware they belong to Europe, for example to through their pattern of consumption (driving a European car, consumption of food from a European country, listening to Euronews) or through the exposure to European landscape. In our research project we will ask the question if and how the use of transnational infrastructures helped people to remember their European identity.

Concluding remark

Myrdal’s plan of using infrastructures fits into a long technocratic tradition (see Scott 1998; Mattelart 2000). If we as historians follow, record and document the footsteps of these type of

modernizers we might become the heralds of the importance of infrastructures and European integration. For this reason it is very important for our research to look at failures, and to focus on alternatives and competing visions of, and subsequent controversies on how to build Europe on infrastructures. If we are able to write a contextual technology history of Europe that integrates the political character of infrastructure projects, we might be able to avoid a teleological bias.

Citizens do not relate to treaties and formal coordination processes orchestrated from Brussels (hence the often noticed lack of democracy of the European Union), yet they do engage in the process of building European infrastructures. We therefore, believe that our study of transnational infrastructures might also lead to a re-assessment of democracy in Europe, albeit not using a notion of representative democracy but a participative one. Such a view assumes that democratic governance relies heavily on full participation of a range of groups (see Laird 1993). Infrastructure development never goes on unnoticed; over the last 150 years many groups and individuals such as Myrdal have engaged with infrastructures trying to influence what would happen. We are looking forward to study this process in more detail.

References (not complete, see also footnotes)

- Anderson, Benedict, (1983), *Imagined Communities. Reflections on the Origins and Spread of Nationalism*, London.
- Bavoux, Jean-Jacques and Jean-Bernard Charrier, (1994), *Transports et structuration de l'espace dans l'Union européenne*, Paris.
- Billig, (1995) *Banal Nationalism*, Oxford
- Blomkvist, Pär (2003), "Roads for peace. Lobbying for a European highway system", manuscript.
- Davis, Norman, (1996), *Europe. A History*, London.
- Fischer, Claude, (1992), *American Calling. A Social History of the Telephone to 1940*, Berkeley.
- Gall, Alexander, (1998), *Das Atlantropa Projekt. Die Geschichte einer gescheiterten Vision. Herman Sörgel und die Absenkung des Mittelmeers*, Frankfurt.
- Headrick, Daniel, (1991), *The invisible weapon. Telecommunications and international politics 1851-1945*, New York.
- Hecht, Gabrielle (1998), *The Radiance of France. Nuclear Power and National Identity after World War II*, Cambridge.
- Hugill, Peter, (1999), *Global communications since 1844. Geopolitics and technology*, Baltimore.
- Thomas Hughes, (1983), *Networks of power. Electrification in Western society 1880-1930* Baltimore.
- Kaijser, Arne, and Marika Hedin, (1995), *Nordic energy systems: Historical perspectives and current issues*, Cambridge.
- Kaijser, Arne, (1997), 'Trans-border integration of electricity and gas in the Nordic countries 1915-1992', *Polhem* 15, 4-43.
- Laird, F. N., (1993) 'Participatory Analysis, Democracy and Technological Decision-making', *Science, Technology and Human Values*, 18, 13, 341-361.
- L'evy-Leboyer, Maurice, (1998), 'The French Electrical Power System: An Inter-country Comparison', in Renate Maintz and Thomas Hughes, *The Development of Large Technical Systems*, Boulder, 245-262.

- Marijnissen, Yvette (2001), "Internationalisering van het Nederlandse wegennet: 1940-1960". Unpublished student paper. Eindhoven.
- Mattelart, Armand, (2000), *Networking the World 1794-2000*, Minneapolis.
- McShane, Clay, (1994), *Down the Asphalt Path. The Automobile and the American City*, New York.
- Milward, Alan (1992), *The European Rescue of the Nation-State*, London.
- Myrdal, Gunnar (1968), "Twenty years of the United Nations Economic Commission for Europe", *International Organization* 22 (3) 617-628.
- Scott, James C. (1998) *Seeing like a State. How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press.
- Smith, Anthony D., (1992), 'National Identity and the Idea of European Unity', *International Affairs*, 68,1, 55-76.
- Shore, Cris, (2000), *Building Europe. The Cultural Politics of European Integration*, London and New York.
- Laurent Tissot, (1998), 'Les modèles ferroviaires nationaux et la création d'un système international de transports européens, 1870 - 1914. Coordination, intégration ou unification?' *Relations Internationales* No. 95, 313-327.
- Verbong, Geert (ed), (2000), 'Energie', in J.W. Schot et. al., *Techniek in Nederland in de 20^e eeuw* Vol. 2 , Zutphen.
- Verbong, Geert and Erik van der Vleuten,(2002), *Long-term electricity system dynamics* Eindhoven n, internal report.
- Vleuten, (1998), Erik van der, *Electrifying Denmark*, Århus.
- Vleuten, Erik van der, "Infrastructures and societal change", *Technology Analysis and Strategic Management* 2004 (3).
- Vleuten, Erik van der and Geert Verbong, eds. *Networked Nation. Technology, society and nature in the Netherlands in the 19th and 20th centuries*. Special issue of *History and Technology* 20 (3) (2004).
- Vleuten, Erik van der and Arne Kaijser, "Networking Europe", *History and Technology* 21 (1) (2005) forthcoming.