



FLUXES

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I

THE AGE OF RAILWAYS

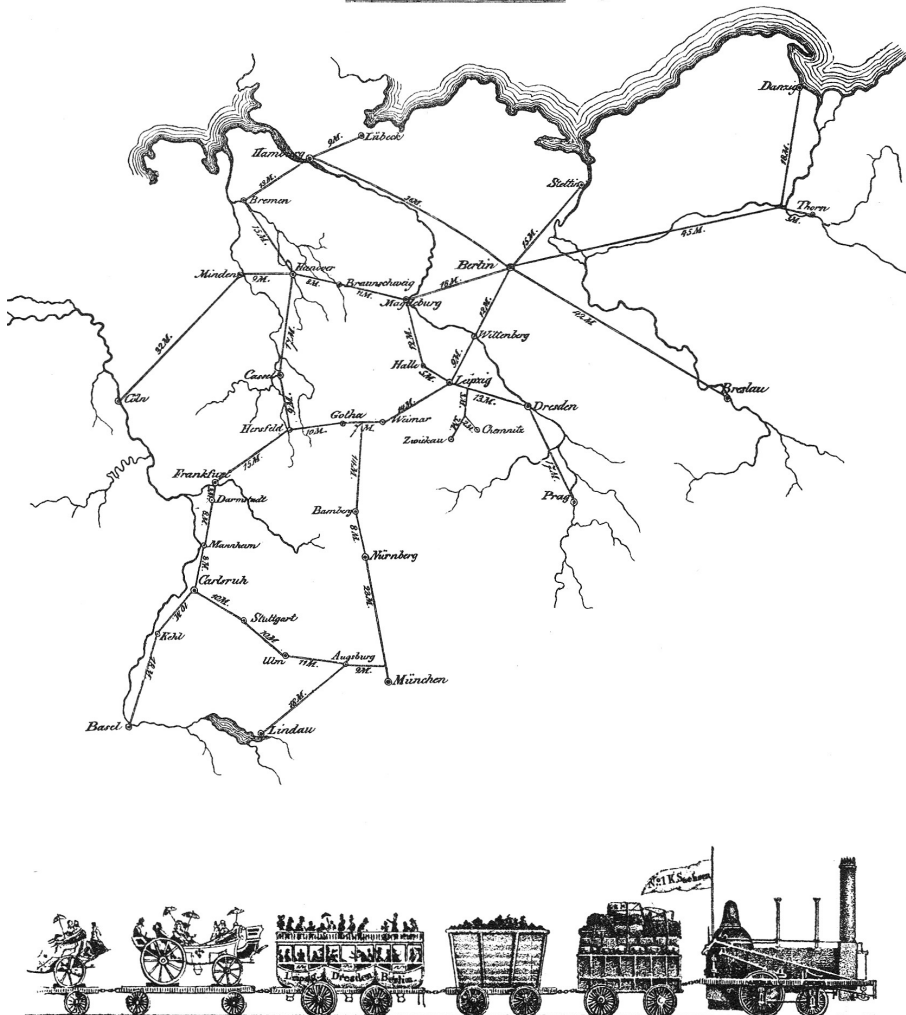


CLAUDE MONET, THE GARE SAINT-LAZARE: ARRIVAL OF A TRAIN (1877)

Before the advent of railways, all travel was powered by muscles – either animal or human – so we had a sense of distance defined by fatigue. Due to the economic boom resulting from the industrial revolution, there was a great shortage of efficient transport systems. With the invention of the steam engine by Thomas Newcomen around 1712 and its further development by James Watt and Richard Trevithick, attempts were soon made to use it to power vehicles. George Stephenson was the first to detach the railway from the mining industry and turn it into a mean of public transport.

On 27 September 1825, the world's first railway line was opened between the English towns of Stockton and Darlington.

Das deutsche Eisenbahn-System.



FRIEDLICH LIST, DAS DEUTSCHE EISENBAHN-SYSTEM (1833)

Since then, the railway soon began to conquer the continent and overseas. The coming of the railways to Europe in the 19th century transformed not only transport across the continent but also Europe's landscapes, interactions between its cultures and its sense of identity. The natural landscape was sometimes literally destroyed when tunnels were cut through hills and depressions were graded to make the railroad as straight as possible, as if drawn with a ruler. All across Europe new horizons opened: journey times had been cut, new routes were built, time zones have been standardized and mass tourism was born.

“What changes must now occur, in our way of looking at things, in our notions! Even the elementary concepts of time and space have begun to vacillate. Space is killed by the railways, and we are left with time alone. [...] Now you can travel to Orléans in four and a half hours, and it takes no longer to get to Rouen. Just imagine what will happen when the lines to Belgium and Germany are completed and connected up with their railways! I feel as if the mountains and forests of all countries were advancing on Paris. Even now, I can smell the German linden trees; the North Sea’s breakers are rolling against my door.”

HEINRICH HEINE, LUTEZIA (1840)

Rail travel seemed almost magical. Our traditional space-time consciousness was shaken by the newly gained speed. On the one hand, the railway opened up new territories that were previously inadequate, on the other hand, it did so by destroying the space between two points. Because the railway only served the points of departure and destination, the in-between space on the railroad dissolved into insignificance. The railway stations became the gateways to previously inaccessible areas such as vacation resorts of the wealthy, which suddenly appeared close regardless of their geographical distance.

By the „annihilation of time and space“, the railroad destroyed not only the traveling space, but also our traditional relationships with nature.



AUGUSTUS LEOPOLD EGG, THE TRAVELLING COMPANIONS (1862)

Wolfgang Schivelbusch insists on the estrangement of the train traveler from nature and his surroundings as a whole because of the speed and isolation in the compartment. Since looking at the landscape was no longer the same experience, many people turned to reading books on railroads. The short duration of railroad journeys discouraged the formation of rapport between travelers. The padded upholstery protects the bourgeois from the reality and the traveller's view is blurred by the train window.

As John Ruskin described it, „they were no longer travelers — rather, they were human parcels who dispatched themselves to their destination by means of the railway, arriving as they left, untouched by the space traversed.“

II

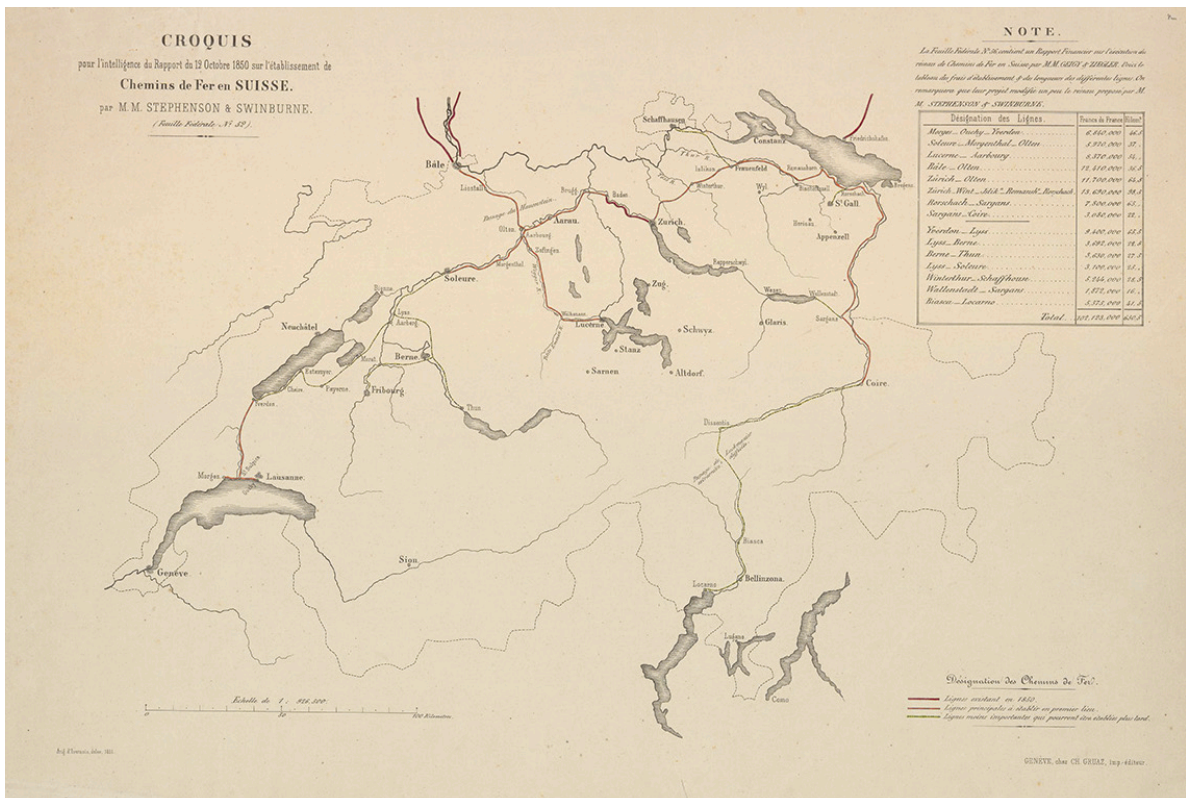
ESCHER'S SUPREMACY



ALFRED ESCHER (1819-1882)

While England, Germany, Austria, France, Italy and Russia had already introduced the railway, Switzerland was, with the exception of the Spanish-Brötl-Bahn that runs from Zurich to Baden, a blank spot in the European railway network. In November 1849, Alfred Escher, as President of the Swiss National Council, expressed his fears that Switzerland could miss the connection to modernity:

"From all sides, the railways are approaching Switzerland more and more. Plans are emerging according to which the railways are to be routed around Switzerland. Switzerland is thus in danger of being completely bypassed and as a result will have to present the sad picture of a European hermitage in the future."



ROBERT STEPHENSON & HENRY SWINBURNE, L'ÉTABLISSEMENT DE CHEMINS DE FER EN SUISSE (1850)

In 1850, the British railway experts Robert Stephenson and Henry Swinburne submitted to the Swiss Federal Government their overall railway project for Switzerland. The construction of railways throughout Switzerland became a question of fate.

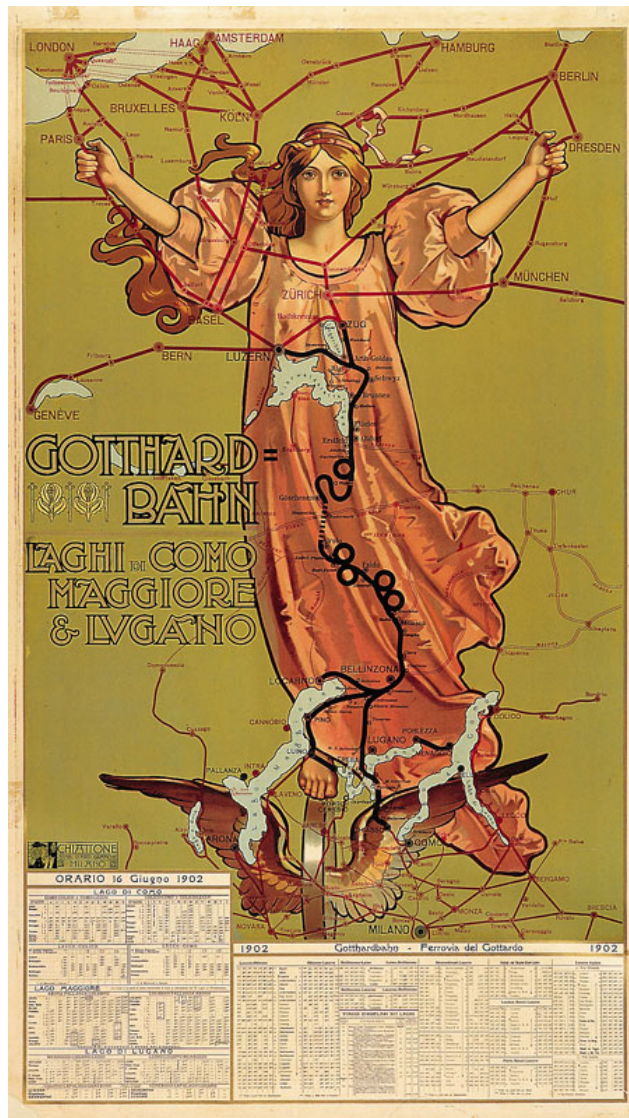
In 1852, the first railway law in Switzerland was enacted, that left the construction and operation of the railways to private companies and the competence to grant concessions to the cantons. Financing was mainly through private capital, which forced the railway companies to profit-oriented construction planning. The competitive situation massively accelerated railway expansion and opened up the battle for the first Alpine traversal.



ROMEDO GULER, ZÜRICH, CREDITANSTALT (1883)

The railway companies that were set up from 1852 onwards were the first major corporations to be formed in Switzerland. In 1853, Escher took over the management of the Zürich-Bodenseebahn, which he expanded by merging it into the Nordostbahn, linking Zurich to Basel and Friedrichshafen. The Nordostbahn became soon one of the most profitable in the Swiss railway system of the time.

The large amount of capital required for railway construction had to be obtained from abroad because there were no institutions in Switzerland that could provide money of this magnitude. In order to organize the large financial resources independently of foreign influence, Escher founded the Schweizerische Kreditanstalt (SKA, today Credit Suisse) in 1856.



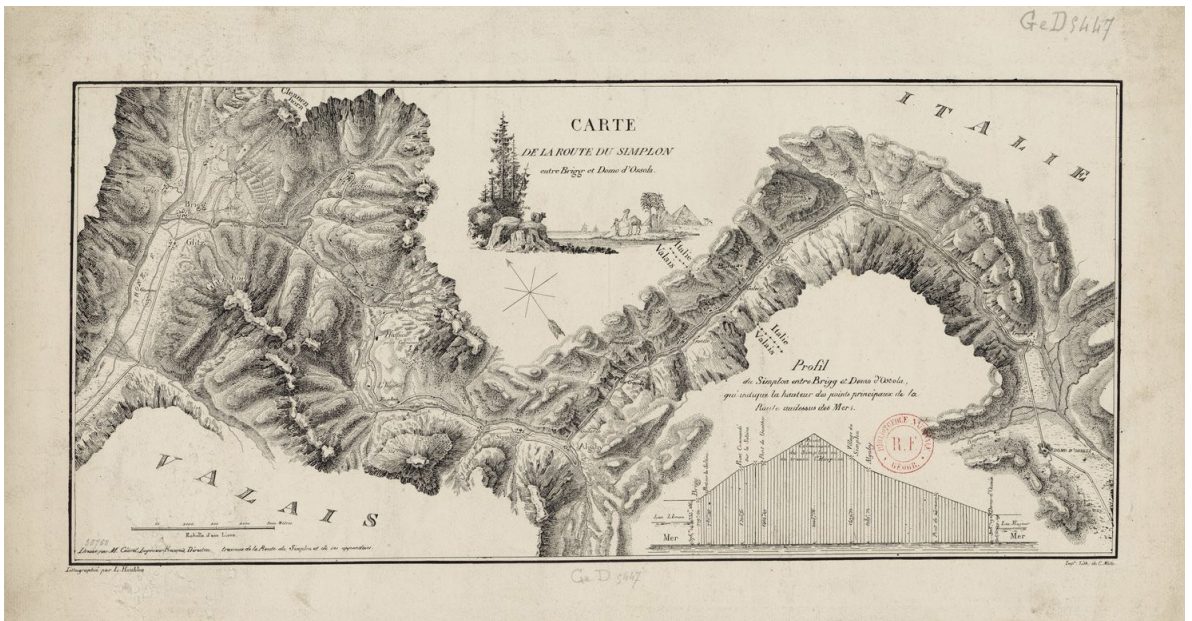
GABRIELE CHIATTONE, GOTTHARDBAHN (1902)

Although the most important places in Switzerland were soon connected to the railway network, a north-south connection was still missing. When the construction of an Alpine transversal in Switzerland became ready for implementation, the Gotthard triumphed over its competitors, the Lukmanier and the Simplon, because Escher had understood how to direct Otto von Bismarck's interest and the support of German and Italian financial circles towards "his" project.

In 1882, the 15 km long Gotthard tunnel was ceremoniously opened. As the most important Swiss transport project of the 19th century, the Gotthardbahn had far-reaching effects on economic geography.

III

THE SIMPLON LINE



NICOLAS CÉARD, CARTE DE LA ROUTE DU SIMPLON (1805)

Throughout the centuries, Valais has had its importance as a transit country between France and Italy. As early as between the 12th and 15th centuries, the Simplonpass achieved perhaps its greatest importance in long-distance trade: it served as one of the most important transport routes at the time between the trading towns in northern Italy and the fairs in Champagne. When the political structures in Europe changed in 1798, Napoleon Bonaparte recognized early on the strategic importance of the pass for his expansionist policy, as it formed the shortest connection between Paris and Milan.

The first modern road across the Alps was completed in 1805 by the engineer Nicolas Céard. It has a length of 63 km; 611 bridges had to be built, 7 galleries had to be broken through.

„L’existence du peuple valaisan se partage entre la vie agricole et la vie pastorale [...] On ne fabrique, on ne manufacture rien dans le Valais [...] Renfermé dans le cercle étroit de ses besoins, le Valaisan ne jette aucun œil d’envie sur les richesses de l’industrie et du luxe qui circulent dans les autres contrées de l’Europe [...] L’histoire du 14^e siècle est encore pour lui l’histoire du temps présent, les traits de caractère national sont les mêmes, et le temps qui s’est écoulé depuis cette époque, ne signale aucun changement dans son existence morale, aucune amélioration dans son système d’économie politique.”

JOSEPH ESCHASSÉRIAUX, “LETTRE SUR LES MŒURS DE SES HABITANTS” (1806)

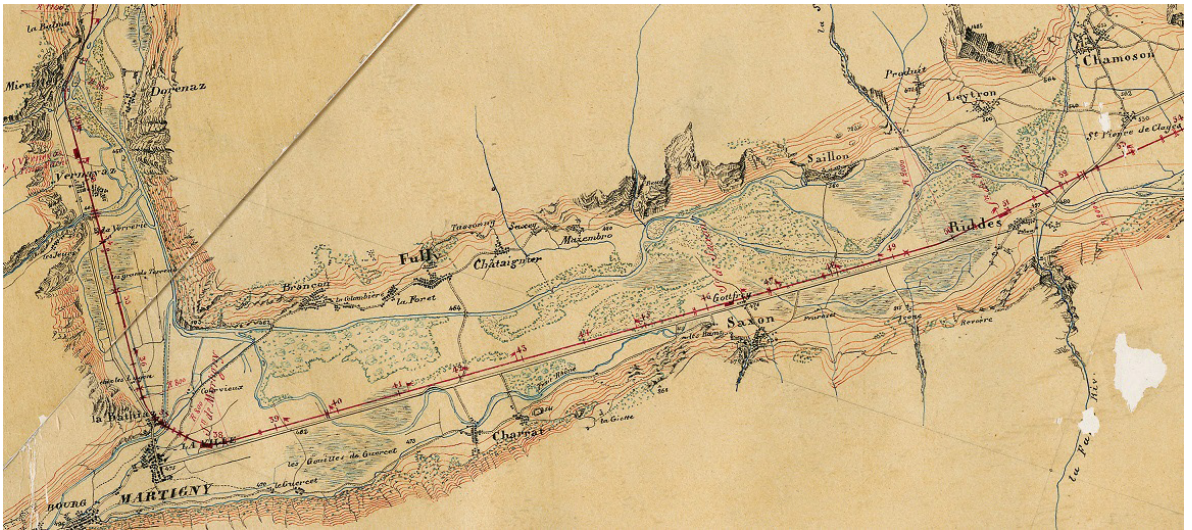
Compared to other parts of Switzerland, where industrialization had already taken root in the 18th century, Valais remained an agricultural canton because of its geographical isolation. The population’s necessities of life were almost entirely met from their own land. Production for the market was unknown; the entire production of goods was oriented towards the requirements of domestic self-sufficiency. There were no craftsmen and tradesmen, or only those who were absolutely indispensable for agricultural production.

The situation changed very quickly when technology succeeded in putting steam power at the service of mechanical locomotion. Finally, the moment had come for the remote Alpine valley to emerge from its fateful isolation.



ADRIEN DE LA VALETTE (1813-1886)

The system of railway construction by private companies made it impossible to plan the entire Swiss railway network in a way that made economic sense. The commercially oriented railway companies were naturally only interested in profitable projects, and there were none of those in Valais. The Valaisans did not succeed in winning over the financial circles of Switzerland for their project, so it was almost inevitable that the Valais authorities would look abroad for financial support. The French journalist Adrien de la Valette entered the scene as a supposed saviour. Although he had no experience in railway construction and no knowledge of Swiss conditions, the Valais government granted him a concession for the railway link between Bouveret and Sion in 1853. In 1854, the concession for the continuation from Sion to Brig and to the Sardinian border at the Simplon followed.



ARCHIVES DE L'ÉTAT DU VALAIS, LA PLAINE DU RHÔNE ENTRE MARTIGNY ET RIDDES (1835-1850)

De la Valette founded the *Compagnie de la ligne d'Italie* and in 1859, the first section Bouveret-Martigny was opened to traffic. One year later, the connection to Sion was inaugurated. Then the construction began to stagnate. Intrigues, scandals and protests over the routing of the line and the choice of station locations prevented the railway from moving forward. The flood of 1860 prompted the cantonal government to ask the federal government for financial support for the Rhône correction. The federal councillors agreed to the request for subsidies and the major work could be started as early as 1863.

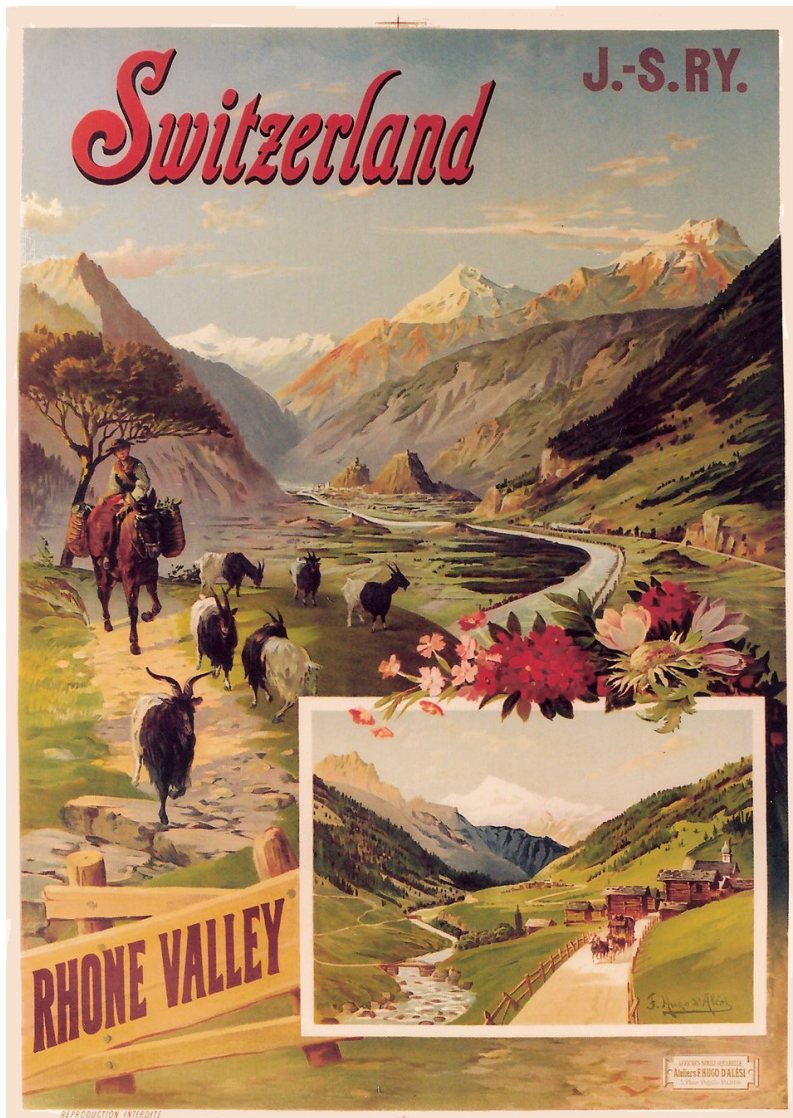
The management of cantonal affairs was totally disastrous. Despite the federal subsidies, Valais plunged into a terrible economic and financial crisis and the *Compagnie d'Italie* went bankrupt.



PETER BUMANN, BAHNHOF BRIG (1905)

The canton of Valais granted a concession to the *Nouvelle Compagnie de la ligne internationale d'Italie par le Simplon* in 1867, which only managed to complete the section Sion-Sierre in 1868. As this second company was no more successful than the first in raising the necessary funds, the Federal Government declared in 1872 that the concession had expired.

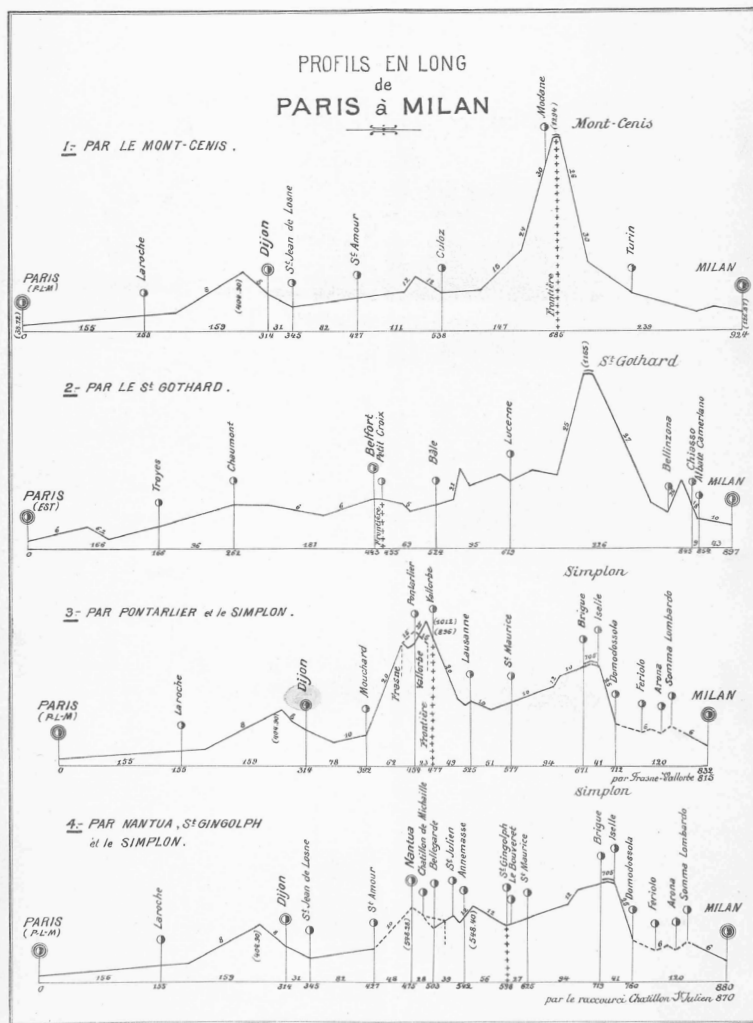
Two years later, the line was assigned to the *Compagnie du chemin de fer du Simplon* and by 1877 extended to Leuk. From then on, the company was required to adopt a line parallel to the river between Susten and Brig, in order to contribute by its earthworks to the execution at correcting and damming the Rhône. Brig was finally reached in 1878 and the length of the railway was now 116,9 km.



FRÉDÉRIC HUGO D'ALESI, RHONE VALLEY, SWITZERLAND (1895)

Twenty years of construction time and three changes of ownership gives an idea that the Simplon Line had to contend with difficulties. These were not so much technical as financial and political. However, the mismanagement of the Ligne d'Italie had brought the company into disrepute both in Italy and in Switzerland and was one of the main reasons why the Simplon lost out to the Gotthard in the battle for the first Swiss Alpine transversal.

What if the Valaisans had considered the Simplon Line economically and strategically more important than the Rhône and therefore prioritized the construction of the Simplon Line over the Rhône correction?



A. PEREY, PROFILS EN LONG DE PARIS À MILAN (1902)

The valley of the Rhône is formed completely evenly, so that the maximum gradient of the railway only reaches 12 per mille (Gotthard 26 ‰) in a few places. It is fairly straight and has only a few and large curves. Brig lies at 678 m above sea level, almost 500 m lower than the southern exit of the Gotthard tunnel. Above Brig, the rails are then led directly into the mountain without having to strive for the height of the tunnel entrance by artificial means such as helical tunnels, loops or ramps. The southern ramp Iselle-Domodossola is similar to the Gotthard but superior to it in that it is less exposed to the climatic influences of winter. At Mont Cenis (1269 m) and at Gotthard (1145 m), the climatic influences on traffic, especially in winter, are not to be underestimated, and not only the speed but also the safety and punctuality of traffic must suffer significantly.



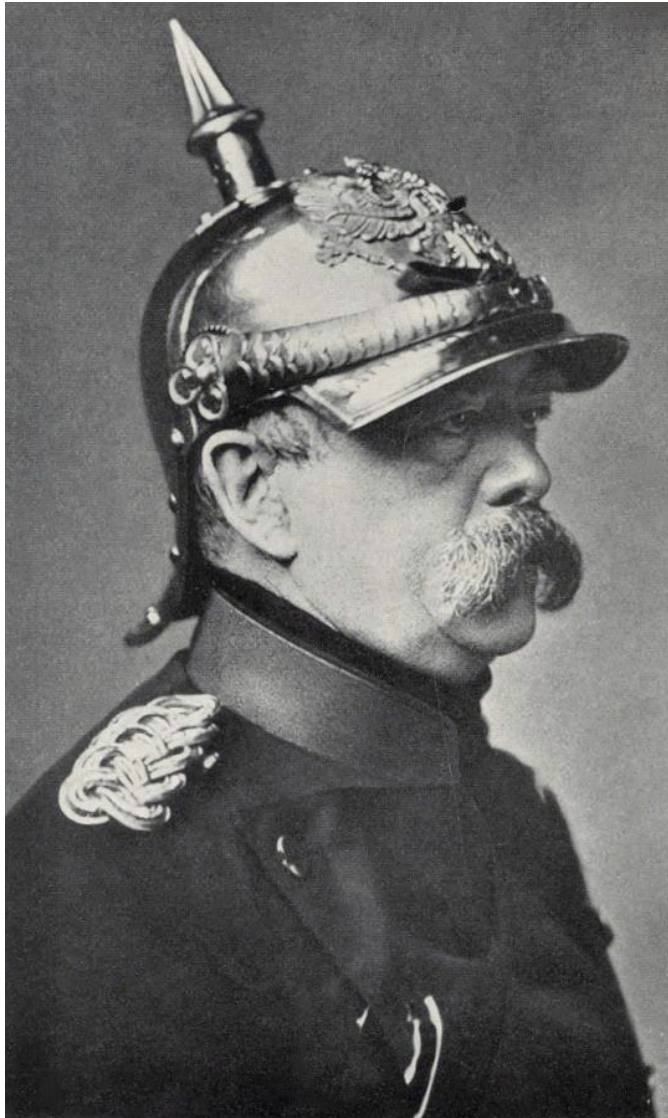
SBB HISTORIC, SIMPLON-SÜDPOR TAL IN ISELLE IM BAU (1903)

Along the entire length of the Alps from Mont Cenis to the Tyrol, the Simplon is the only point where two opposing valleys cut so deeply into the mountains that it was possible to make a puncture at the foot of the mountain without exceeding the possible length of the tunnel. By tackling the massif at its roots, it was possible to facilitate traffic considerably.

In 1906, after eight years of construction, the 20 km long Simplon tunnel I was opened, making it the second Swiss Alpine railway line after the Gotthard. The international north-south connection was created and gave Brig great importance on a national level. Despite its topographical advantages, the Simplon has never been able to acquire the same importance as the Gotthard tunnel.

IV

FRANCO-PRUSSIAN WAR



OTTO VON BISMARCK (1815-1898)

Germany had recognized the eminent political and economic importance of a north-south axis, and in the Reichstag session of 25 May 1870 Otto von Bismarck spoke of the necessity of creating a direct railway linking Germany with Switzerland. Bismarck urged the government to provide substantial subsidies to secure an undertaking of great international importance.

It was not only a question of Germany securing international traffic by connecting Hamburg and Berlin directly with Milan and Genoa, but also diverting the transit of the northern countries of Europe away from France and onto German territory. Six weeks before the war on the battlefield, Germany declared war on France in the economic field.

„C'est ainsi qu'il a été établi, depuis longtemps, que les distances *réelles*, par voies ferrées, étant entre Paris et Milan :

Par le Mont Cenis . 951 *km*

Par le St-Gothard . 927 „

Par le Simplon . . 850 „

les distances virtuelles deviennent :

Pour le Mont Cenis . 1086 *km*

Pour le St-Gothard . 1062 „

Pour le Simplon . . 965 „

ce qui, à des raccourcis en faveur du Simplon de 101 et de 77 *km*, en substitue qui s'élèvent, pour ce même passage, à 121 et 97 *km*.

„Au départ de Paris, en prenant de l'autre côté des Alpes Plaisance pour objectif, l'avantage du Simplon sur le Mont Cenis diminue un peu; il n'est plus que de 105 *km* au lieu de 121. Mais vis-à-vis du St-Gothard, l'avantage du Simplon augmente au contraire et devient de 108 *km* au lieu de 97.

LE PERCEMENT DU SIMPLON DEVANT LES CHAMBRES ET LES INTÉRÊTS DE LA FRANCE (1875)

The Simplon had always been considered the shortest as well as one of the easiest and most comfortable connections between France and Italy. The question of the Simplon tunnel became particularly important in France at the moment when the assurance of a subsidy for a Gotthard railway by the North German Confederation showed the dangers that continued to threaten France's commercial and political relations with the countries of the Mediterranean.

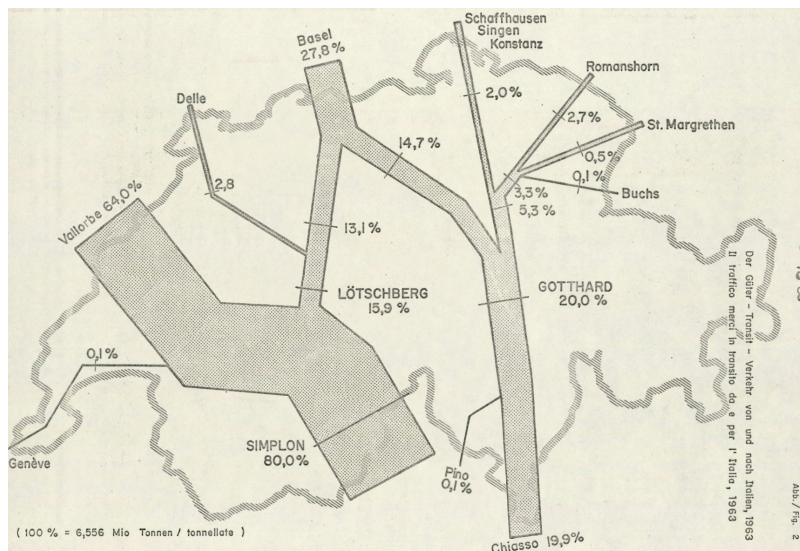
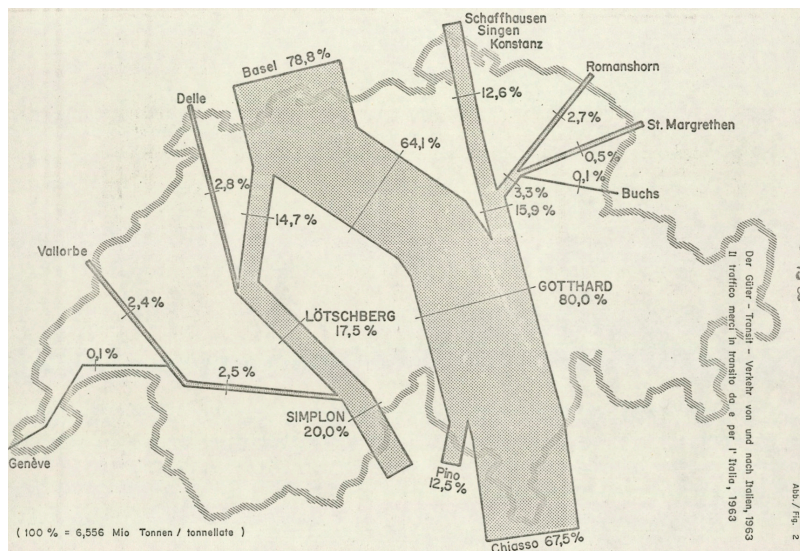
There was great movement in the French Chamber. On 21 June 1870, a number of deputies then made the proposal to the French legislature to grant a Simplon subvention of 40 million in response to the German subvention for the Gotthard. The outbreak of war prevented this request from being dealt with.



CARL STEFFECK, BATTLE OF SEDAN (1870)

France declared war on Prussia on 19 July 1870. Contrary to the French Emperor's expectations, the four southern German states entered the war because they had to stand by the North German Confederation of an alliance treaty. Within a few weeks in the late summer of 1870, the German allies defeated large parts of the French armies and after the Battle of Sedan in northern France, Emperor Napoleon III went into captivity. With the proclamation of Wilhelm I as German Emperor in 1871 in the Palace of Versailles, the German Empire was founded.

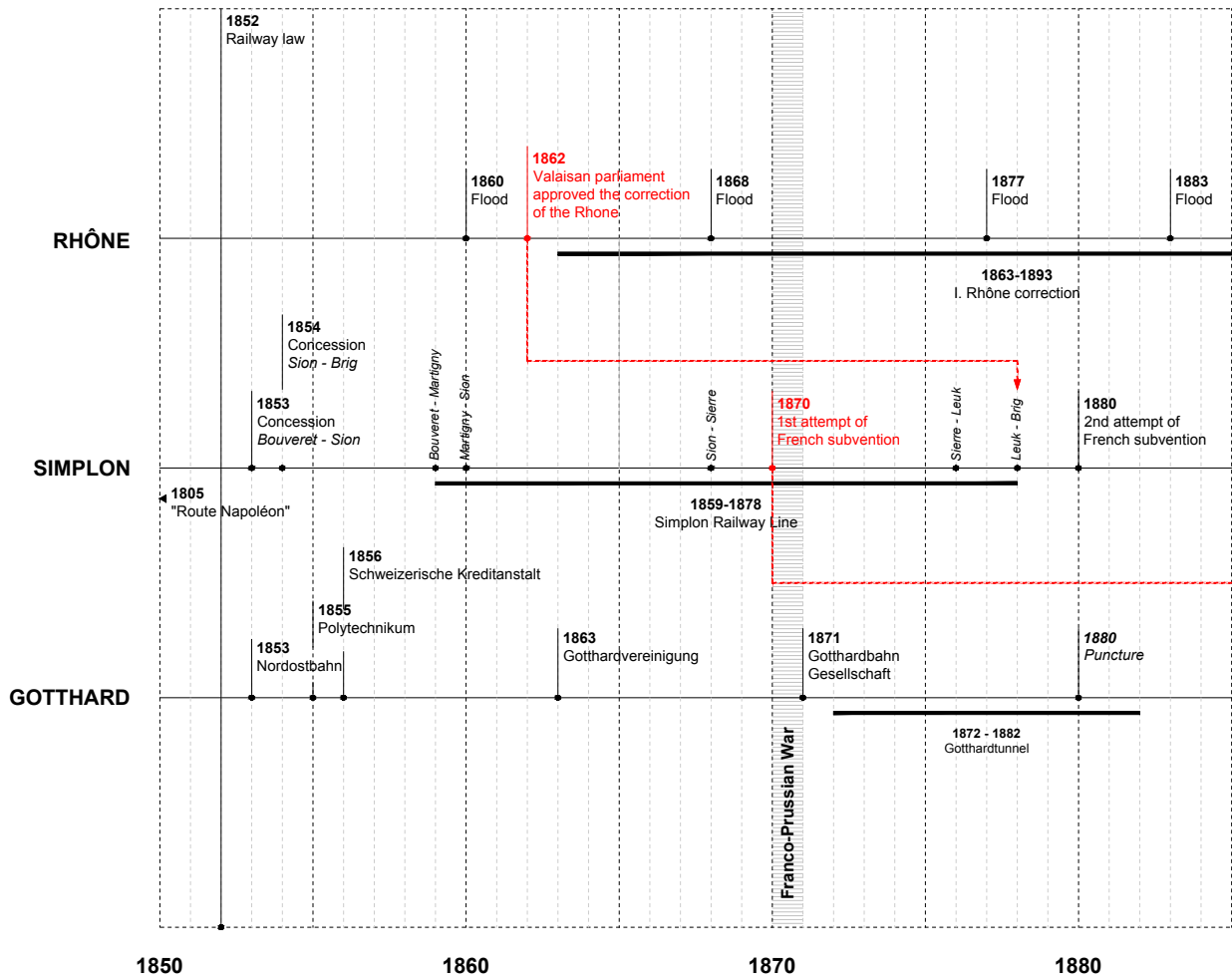
France's defeat in the war prevented the Simplon from being carried out earlier, while Gotthard railway became France's Sedan from an economic point of view.



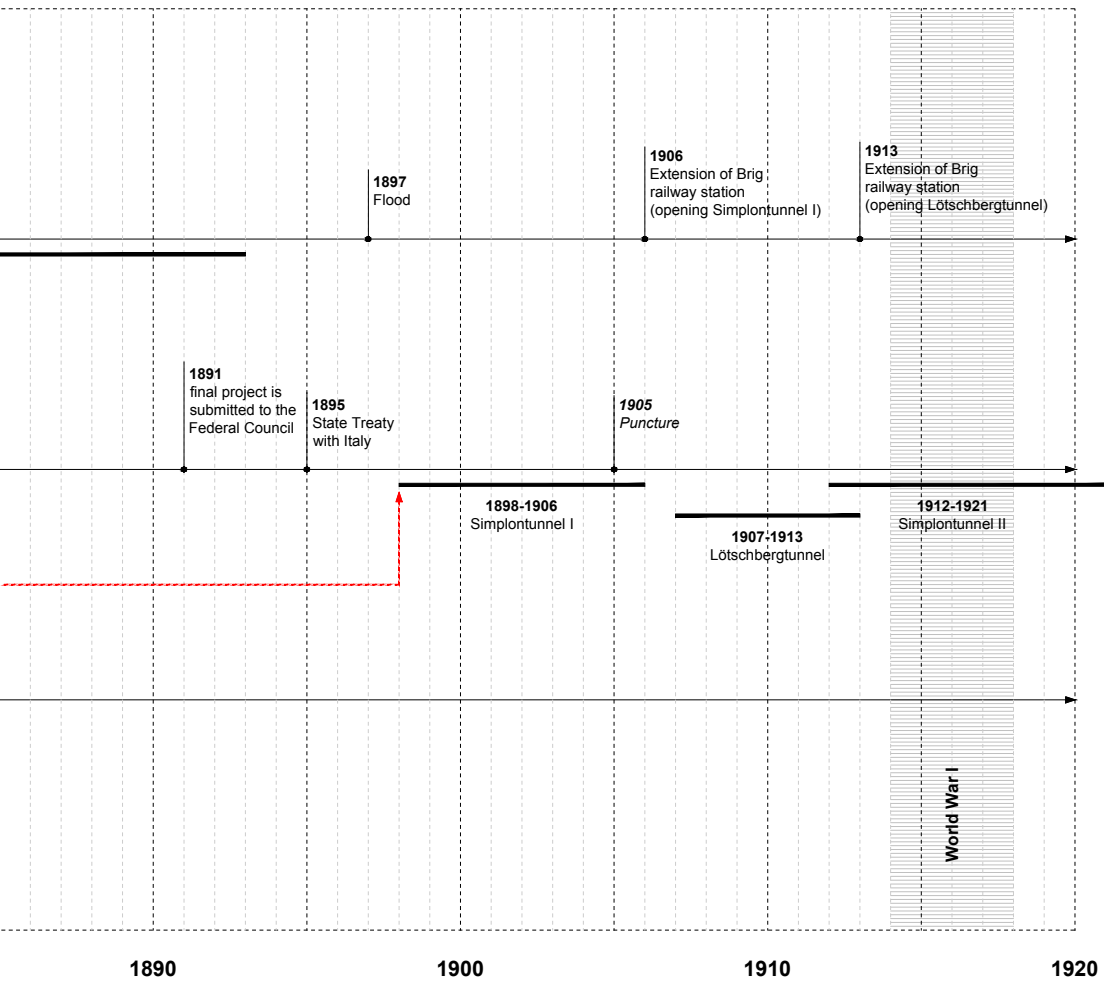
KOMMISSION "EISENBAHNTUNNEL DURCH DIE ALPEN", GÜTERTRANSITVERKEHR (1963)

What if Brig had been reached even before the Franco-Prussian War, and the French government had thereby agreed to the subsidy credit of 40 million in 1870?

The Simplon tunnel would have been built before the Gotthard and became the major north-south axis. The railway opened Valais' gateway to the more economically advanced areas and greatly increased the mobility of goods, due to its position between Paris and Milan. Instead of conquering the land of the Rhône for agriculture, the Valaisans would have concentrated on the new possibilities offered by the railway and promoted industry. As a consequence, strategically important points would have been created rather than a corrective work along the entire length of the Rhône Plain.



TIMELINE





WILLIAM TURNER, RAIL, STEAM AND SPEED (1844)