Across the Passes. Transport Structures and Markets in the Alpine Area of the Pre-industrial Period

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1. Introduction

Stretching 1200 kilometres in length and 250 kilometres in width from the Col de Tende in Savoy to the Tarvis Pass in Slovenia, the Alps are the most extensive European mountain range. Despite its function as a natural barrier within the continental transport system, this mountainous area, with its considerable topographical and climatic challenges over the centuries, has served as an important corridor of exchange in economic contexts. Various and constantly changing meta-economic and economic parameters of international and European as well as of regional and local character have affected commercial Alpine transport operations and determined which Alpine passes and transit corridors were used during the pre-industrial era.[1]
This paper, in a first step, discusses the Alpine transportation system by reviewing the state of research and outlining basic preconditions and typical structural characteristics of the respective networks. In a second step, the system of the Alpine passes, the axes of the international transit and its feeder routes as well as the secondary transport networks and connection routes to smaller markets will be addressed. By this means, the most important changes of the traffic flows, interacting with superordinate processes, and their conjunctions to the respective scenes of economic life will be pointed out.

2. State of Research

As for further fields of the economic history of the Alps, a recent general overview of the special theme of Alpine transport and its economic reference points is lacking. Though countless anthologies and monographs have been published during the past decades, it would be useless to give a complete synopsis of this thematic field. Therefore, the following approach will only point out some important landmarks.
In 1900, with his milestone book on Medieval commerce and transport between Germany and Italy, Aloys Schulte set new benchmarks.[2] Fascinated by the high Alpine traffic across the passes, he predominantly envisaged the ways through the Central Alps and therewith created the idea of the Alpine area as a typical transit area—an idea which has dominated previous research. Early historiography on Alpine traffic, such as Paul Hugo Scheffel's cross-epochal work about transport history of the Alps[3], was not only characterised by this predominance of long-distance transport but also by its focus on political history. Emulating these major achievements, the following generation of historians primarily analysed the supraregional traffic axes, the transit, its economic, manorial and political as well as its trade-related conditions and consequences. Regarding the access to markets, they especially studied the major European centres of trade which had a strong pull effect on transalpine long-distance traffic.[4] Since the 1960s at the latest, the upturn of economic and social history brought new stimulating impulses. Special mention should be made of the studies of Otto Stolz and Maria Clotilde Daviso di Charvensod, of Jean François Bergier, Fritz Glauser, Herbert Hassinger and Werner Schnyder, who left abundant oeuvres.[5] Studies on markets, for example, began to analyse local and regional

[1] Herbert Hassinger, Zur Verkehrsgeschichte der Alpenpässe in der vorindustriellen Zeit, in: Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte 66 (1979), pp. 441–465, here: p. 441; Katharina Winckler, Die Alpen im Frühmittelalter. Die Geschichte eines Raumes in den Jahren 500 bis 800, Vienna/Cologne/Weimar 2012, p. 114: As the Alpine transport routes, in contrast to the valleys and territories, were considered as known, the sources often do not mention the passages and ways chosen by travellers.
[2] Aloys Schulte, Geschichte des mittelalterlichen Handels und Verkehrs zwischen Westdeutschland und Italien, 2. vols., Leipzig 1900.
[3] Paul Hugo Scheffel, Verkehrsgeschichte der Alpen, 2 vols., Berlin 1908.
[4] The starting point was the oeuvre of Frédéric Borel, Les foires de Génève au XV^{e} siècle, Paris 1892.
[5] Cf., for example, Otto Stolz, Geschichte des Zollwesens, Verkehrs und Handels in Tirol und Vorarlberg von den Anfängen bis im 20. Jahrhundert, Innsbruck 1953; Maria Clotilde Daviso di Charvensod, I pedaggi delle Alpi occidentali nel medio evo (Miscellanea di Storia italiana, ser. IV 5), Torino 1961; Jean-François Bergier, Les foires de Genève et l'économie internationale de la Renaissance, Diss. Geneva, Paris 1963; Fritz Glauser, Der internationale Gotthardtransit im Lichte des Luzerner Zentnerzolls von 1493 bis 1505, in: Schweizerische Zeitschrift für Geschichte 18 (1968), pp. 177–245; Herbert Hassinger, Der Verkehr über Brenner und Reschen vom Ende des 13. Jahrhunderts bis in die zweite Hälfte des 18. Jahrhunderts, in: Neue Beiträge zur geschichtlichen Landeskunde Tirols (Tiroler Wirtschaftsstudien 26, 1–2), Munich 1969, pp. 137–194; Werner Schnyder, Handel und Verkehr über die Bündner Pässe im Mittelalter, Zürich 1973, etc.

marketplaces instead of only examining the markets of cities and small towns.[6] In the second half of the 20th century, the research field was additionally stimulated by studies on the history of travel and mobility as well as interdisciplinary works in the field of historical geography and archaeology.[7] For the area today known as Switzerland, the "Inventar historischer Verkehrswege der Schweiz IVS" (Inventory of Switzerland's historic traffic routes)[8] has been compiled, which after twenty years of recording offers rich information on historical roads and ways of national, regional and local importance. With short monographs on roads and ways, the compilation presents the crucial historical sources as well as the results of fieldwork. The large number of studies on Alpine transport history of the last few years has brought a diversification of themes and new perspectives at the level of regional and local history. Anne Radeff's study "Du café dans le chaudron" on trade and markets of a vast area of the Western Alps, published in 1996, can be identified as a valuable example of this development.[9]

Altogether the composition of a general scientific overview which shows the most important research findings for different periods and regions gained so far can be identified as the central desideratum of Alpine transport history.[10] In this context, it will certainly be necessary – at least for certain research fields – to include essential connecting factors concerning adjacent areas. The implementation of this priority will not only be complicated by the divergent state of research for different regions but also by the differing availability of historical sources of the pre-industrial transport history of the Alps. The complexity and variety of sources as well as ,at least for certain places, the lack of historical records probably are the most difficult challenges a comparative study of the transport structures of the different Alpine areas will have to face.[11]

3. Alpine Transport of the Pre-Industrial Period

Natural environment and climate

The crossing of one or several mountain passes is the most dominant characteristic of the commercial Alpine transport of the pre-industrial period. In the Western Alps these naturally given barriers are far higher than in the Eastern parts of the Alpine area. Routes with access to navigable rivers and lakes had an advantage in

[6] Cf., for example, Markus Fürstenberger and Ernst Ritter, 50 Jahre Messe Basel, Basel 1971, pp. 329–348; Hans Conrad Peyer, Gewässer, Grenzen und Märkte in der Schweizergeschichte (Mitteilungen der Antiquarischen Gesellschaft in Zürich 48/3), Zürich 1979; Anne Radeff, Du café dans le chaudron: économie globale d'Ancien Régime (Suisse occidentale, Franche-Comté, Savoie), Lausanne 1996; Ibid., Grandes et petites foires du Moyen Age au XX[e] siècle, in: Nuova Rivista Storica 75 (1991), pp. 329–348; Martin Körner, Das System der Jahrmärkte und Messen in der Schweiz im periodischen und permanenten Markt 1500–1800, in: Jahrbuch für Regionalgeschichte und Landeskunde 19 (1993/94), pp. 13–34; Ibid., Le système des marchés annuels et des foires en Suisse dans le cadre du marché périodique et permanent (1500–1800), in: Franz Irsigler (ed.), Messen, Jahrmärkte und Stadtentwicklung in Europa (Beiträge zur Landes- und Kulturgeschichte 5), Trier 2007, pp. 135–160, etc.

[7] Cf., for example, Xenja von Etzdorff/Dieter Neukirch (eds.), Reisen und Reiseliteratur im Mittelalter und in der frühen Neuzeit (Cloe. Beihefte zum Daphnis, 13), Amsterdam/Atlanta 1992; Norbert Ohler, Reisen im Mittelalter, München/Zürich[3] 2002; Dietrich Denecke, Methoden und Ergebnisse der historisch-geographischen und archäologischen Untersuchung und Rekonstruktion mittelalterlicher Verkehrswege, in: Herbert Jahnkuhn/Reinhard Wenskus (eds.), Geschichtswissenschaft und Archäologie. Untersuchungen zur Siedlungs-, Wirtschafts- und Kirchengeschichte (Vorträge und Forschungen XXII), Sigmaringen 1979, pp. 433–483; Ibid., Altwegerelikte: Methoden und Probleme ihrer Inventarisation und Interpretation. Ein systematischer Überblick, in: Wege als Ziel. Kolloquium zur Wegeforschung in Münster, 30. November 2000 (Veröffentlichungen der Altertumskommission für Westfalen XIII), Münster 2002, pp. 1–16 [special print]; Ibid., Zur Entstehung des Verkehrs, in: Stadt. Strom – Strasse – Schiene. Die Bedeutung des Verkehrs für die Genese der mitteleuropäischen Städtelandschaft, in: Alois Niederstätter (ed.), im Auftrag des Österreichischen Arbeitskreises für Stadtgeschichtsforschung (Beiträge zur Geschichte der Städte Mitteleuropas XVI), Linz/Donau 2001, pp. 1–26; Ibid., Linienführung und Netzgestalt mittelalterlicher Verkehrswege – eine raumstrukturelle Perspektive, in: Rainer Christoph Schwinges (ed.), Straßen- und Verkehrswesen im hohen und späten Mittelalter (Vorträge und Forschungen LXVI), Sigmaringen 2007, pp. 49–70; Klaus Aerni, Die alten Passwege Albrun, Grimsel, Gries, Mt. Moro und Loetschen. Kartierung der Routen und erste Hinweise auf deren Entstehung, Hofwil/Merligen 1961; Ibid., Die Passwege Gemmi, Lötschen und Grimsel. Topographie, Teichographie und Geschichte der Weganlagen, 2 vols., Bremgarten 1971, etc.

[8] ViaStoria. Inventar historischer Verkehrswege der Schweiz (IVS). Dokumentationen nach Kantonen, Bern 2003. For further information cf. https://www.ivs.admin.ch/bundesinventar; Klaus Aerni und Hanspeter Schneider, Alte Verkehrswege in der modernen Kulturlandschaft – Sinn und Zweck des Inventars historischer Verkehrswege der Schweiz (IVS), in: Geographica Helvetica 3 (1984), pp. 119–127; Klaus Aerni, Ziele und Ergebnisse des Inventars historischer Verkehrswege der Schweiz (IVS), in: Die Erschliessung des Alpenraums für den Verkehr im Mittelalter und in der frühen Neuzeit / L'apertura dell'area alpina al trafico nel Medoevo e nella prima Era Moderna. Historikertagung in Irsee 13.–15.9.1993 (Schriftenreihe der Arbeitsgemeinschaft Alpenländer NF, 7), Bozen 1996, pp. 61–83; Cornel Doswald, Bestandesaufnahme historischer Verkehrswege am Beispiel der Schweiz. Auftrag, Methoden und Forschungsergebnisse des Inventars historischer Verkehrswege der Schweiz, in: Räume – Wege – Verkehr – historisch-geographische Aspekte ländlicher Verkehrswege und Transportmittel (Mensch – Wirtschaft – Kulturlandschaft. Mitteilungen zur Geographie, Landes- und Volkskunde 3), Blankenhain 2000, pp. 11–50.

[9] Radeff, Du café dans le chaudron.

[10] In 1995, on the occasion of the foundation of the International Society for Alpine History, the Swiss historian Jean-François Bergier already noticed a significant lack of overviews and summaries for most of the research fields. Cf. Jean-François Bergier, Des Alpes traversées aux Alpes vécues. Pour un projet de coopération internationale et interdisciplinaire en histoire des Alpes, in: Des Alpes traversées aux Alpes vécues (Histoire des Alpes 1), Zürich 1996, pp. 11–21, here: pp. 16s.

[11] Ibid., Le trafic à travers les Alpes et les liaisons transalpines du haut moyen âge au XVII siècle, in: Le Alpi e l'Europa, vol. III: Economia e transiti, Bari 1975, pp. 1–72, here: p. 8: "Non point que celles-ci [the historical sources] soient peu abondantes, bien au contraire. Mais elles sont incomplètes, dispersées, non cohérentes."

providing fast and cost-effective transportation of goods.[12] With increasing distance from the central zone of the Alps, the importance of commercial shipping was more significant. In the flatter areas, the natural circumstances, such as seasonally strongly fluctuating water levels, were more moderate, as the map of the historical river transportation in the Valais and in Berne shows (cf. fig. 1)[13]. Most of the rivers of the Alpine zone almost exclusively served for timber rafting or for the shipping of heavy, weather-proof goods in the service of transportation of regional significance. By way of example, on the Inn River, wood for the use of the Tyrolian mines was transported since the 15th century, whereas on the Upper Rhine salt, wine, steel, iron, herring, cere, lead and wool were shipped in the Late Middle Ages.[14]

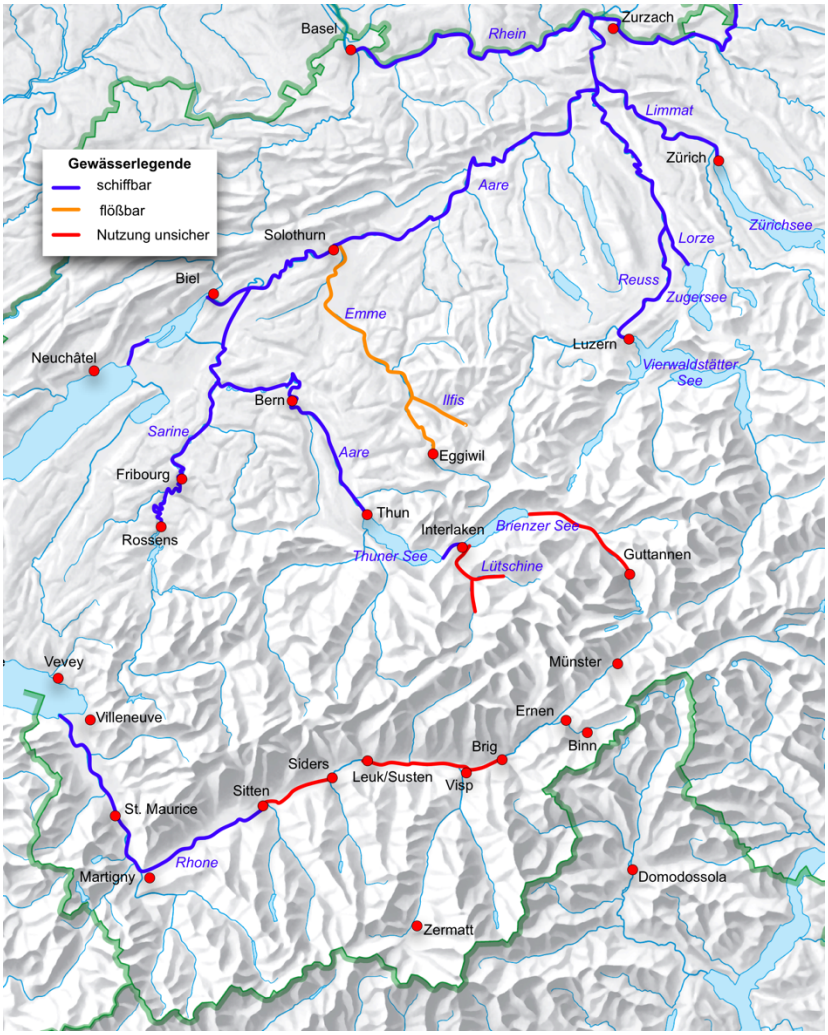

Figure 1: Historical river transportation in the Valais and in Berne (blue: navigable, orange: floatable, red: use unclear)

The crossing of the Alpine passes during the winter months is well documented in historical records. It is significant that the first annual cycle of the Geneva fairs started on Epiphany. In the 15th century, these trade fairs were frequently visited by Italian merchants who had to cross the Alps to reach the town on the shores of Lake Geneva. The Savoyard toll accounts of Montmélian document that between 22 January and 1 May 1300 a remarkable quantity of 2226 1/2 wagonloads crossed the Mont Cénis Pass.[15] Sure-footed oxen blazed trails to the snowed-in passes.[16] For the Valais, the account books, for example the so-called "Libri d'entrata e di sortita",of the Loscho Company in Brig, mention snow-plough men ("Schneeweger"), who removed the snow from the Simplon Pass road. The mercantile records show that in the 19th century, in addition to the

[12] Bergier, Le trafic, p. 41f.
[13] Marie-Claude Schöpfer, Verkehrspolitik im Mittelalter. Bernische und Walliser Akteure, Netzwerke und Strategien (Vorträge und Forschungen, Sonderband 55), Ostfildern 2011, p. 313.
[14] Bergier, Le trafic, p. 31f.
[15] Peter Spufford, Handel, Macht und Reichtum. Kaufleute im Mittelalter, Darmstadt 2004, p. 123; see also Maria Clotilde Daviso di Charvensod, I pedaggi delle Alpi occidentali nel medio evo (Miscellanea di Storia italiana, ser. IV 5), Turin 1961.
[16] Fritz Glauser, Ochsen und Pferde. Voraussetzungen des mittelalterlichen Alpenverkehrs, in: Beiträge zur alpinen Passgeschichte. Akten der 4. Internationalen Tagung zur Walserforschung in Splügen 6. September 1986, Anzola d'Ossola 1987, pp. 109–119.

costs of transportation and tolls, merchants had to pay a special "schneveg" fee for their snow clearance work.[17] In this regard the enhanced availability of local guides, sumpters and waggoners during the winter months, when agro-pastoral production made fewer demands, surely had an impact. Archaeological finds on high medieval Alpine routes, like the Antrona Pass, the Theodul Pass or the Lötschen Pass, prove that the altitude was not the only substantial factor concerning the use of an Alpine transport route. Particularly in the period of the Climate Optimum (c. 900–13th century)[18] in the Middle Ages, those passes had high levels of traffic. With the progressive melting of glaciers during the European summer heat wave of 2003 various, prehistoric and medieval objects were discovered on the theretofore unknown Schnidejoch route in the northern Alps.[19] Many of these ancient ways fell into oblivion during the Little Ice Age with its maximums from 1300 to 1500, from 1560 to 1670 and from 1800 to 1860[20]. Others, like the passes of the Saas Valley, were further used for the regional exchange of goods. In 1559 a treaty between Macugnaga on the Italian side and Visp on the Valais side governed the pasture management modalities under adverse weather conditions and during snowfalls as well as under further unfavourable conditions, which made crossing the mountains impossible. As the annual period of time to cross the higher Alpine passes was limited and the possibilities to supply were difficult, the supraregional traffic and the transit generally preferred to flow over passes with a maximum altitude of 2000 m a.s.l., which usually had an infrastructure.

Means, Duration and Costs of Transport

The difficult natural and climatic conditions required specific solutions concerning the means of transport used on Alpine routes. The cart traffic in the flat valleys which led to the starting points of the pass routes had capacities up to 250 kilograms. The transport vehicles were pulled by teams of horses, mules and oxen. With the introduction of the four-axle wagon in the 12th century and the doubling of the load capacity, carrier services were established at least in the pre-alpine region. As until 1500 the front axle was rigid, the wagons were not universally usable; only at the end of the Middle Ages were these kinds of vehicles slowly introduced in different Alpine regions. The invention of the collar harness as well as of the offset rim and the wheel chamber supported this development. The use of wagons is documented in the late 15th century for the Brenner Pass, across which since 1480 a road has been built on the so-called Kuntersweg and improvements of certain segments have been realized between Bozen and Klausen. However, in general, until the early modern period, Alpine traffic combined wagons on the suitable access roads and pack animals on the pass routes. In the case of frost, sledges and pull skins were additionally used. The packaged goods passing the Alps on the back of mules and horses determined the relevant load unit of the transit. The summage (from Latin "sagma" = load or "sauma" = pack saddle)[21], called "Saum" in German, usually included two bales or two alternative transport units.[22] These further divisions of the summages, the so-called "colli" (Italian "collo"), were classified according to the different types of goods and types of packaging. It was, in particular, "the bearing capacity of the pack animals, which determined the range of the weights used for the packages in the Alpine long-distance

[17] See for example Archiv des Geschichtsforschenden Vereins Oberwallis, Forschungsinstitut zur Geschichte des Alpenraums (AGVO/FGA), Fratelli Loscho, FL-9: Libro d'Entrata e Sortita, p. 105.

[18] Recent research of a team of experts from England, Wales and the USA as well as from the WSL (Swiss Federal Institute for Forest, Snow and Landscape Research) offers insightful findings concerning the causes of the medieval warm period. By comparing growth-ring data of Moroccan trees with the growth zones of stalagmites in Scotland, the scientists reconstructed the annual NAO index (North Atlantic Oscillation), which is based on the differences in atmospheric pressure abnormalities between the Azores and Iceland, back to the 11th century. As the low-pressure system over Iceland and the high-pressure system over the Azores determine whether the winter weather is warm and humid or cold and dry, this pressure ratio has a significant impact on the European climate. The study shows that between 1000 and 1400 A.D. the NAO index was extremely high. Warm air from the Atlantic Ocean between the Azores and Iceland was blown towards the cold European continent and warmed the mainland. Cf., for example, Trouet, Valérie/Esper, Jan/Graham, Nicholas E./Baker, Andy et al., A multi-proxy Reconstruction of Winter NAO Variability since AD 1050, in: Giles Young und Danny McCarroll (eds.) European climate of the past millennium, Proceedings Volume, Calla Millor 2008, pp. 116–117.

[19] Schöpfer, Verkehrspolitik, p. 320.

[20] So far, certain authors only identified the period between 1560 and 1860 as the Little Ice Age. Cf. Wanner, Heinz/Luterbacher, Jürg et al., Klimawandel im Schweizer Alpenraum, Zürich 2000, pp. 76f. and 101–103; for more information about the Medieval Climate Optimum and the Little Ice Age in general see ibid., pp. 73–87.

[21] Michael Moissey Postan, Medieval Trade and Finance, Cambridge 1973, p. 115: "Carrying services on medieval estates [...] consisted of both summage, i.e. carriage by horseback (indeed sometimes on human backs), and cartage."

[22] According to circumstances, a *sumpter* regularly carried two bales, barrels, chests, etc., which were fixed on both sides of the pack animal. This practice allowed the tying of another smaller additional load onto the back of the animal. The specific weights of a summage, composed of the two carrying weight units, varied from region to region: one sack of English wool, for example, corresponded to 364 pounds (c. 165.5 kg), which were usually further divided into two bales. Francesco Balducci Pegolotti, La pratica della mercatura, Allan Evans (ed.), Cambridge MA 1936, p. 257: "1 sacco di lana, che se ne fanno 2 balle, che sono una carica, cioè 1 soma." For the etymology of "Saum", cf. Miscellen, in: Zeitschrift für romanische Philologie 3 (1879), pp. 73–106, p. 102s. (Romanische Eytmologien).

trade. This is mainly due to the fact that carriages by carts and wagons were – for longer distances – impossible in this highly situated mountain area".[23]

For the time around 1380, the "fürleite" tariff of Bellinzona mentions horses on the Monte Ceneri route. The statutes of Biasca from 1334 document oxen which were used for the transalpine goods transport. Archaeological finds at the forge of the hospice of the Lukmanier Pass confirm the use of these animals.[24] Particularly on the high-altitude routes, robust and sure-footed oxen were used to groom the snow's surface and to beat the path down during the winter months. Mules with pack saddles replaced the horses from the 16th century on. At the technical level, the introduction of the horseshoe and of the oxen shoe in the Late Middle Ages brought significant improvements. Whereas medieval pack animals were able to carry loads between 127 and 170 kilograms and oxen up to 200 kilograms, breeding successes seem to have enlarged the pack capacities of the loads until the 19th century. Researches on the transport over the Simplon Pass have shown that the summages went up to loads of 170 to 200 kilograms. The routes of the Alpine passes which followed watercourses, the probably artificial lakes near pass hospices and the numerous wells reveal the water needs and supply difficulties encountered while using pack animals. The transalpine traffic inner Alpine economy contributed to change the inner Alpine economic system in multiple ways: the transports, for example, had an impact on the process of the successive replacement of sheep breeding with stock breeding and of the area used for agriculture with pastures reaching a higher altitude.

The accounts of the company Koler-Kreß-Saronno prove that around 1500 the horseback ride from Nuremberg to Milano to deliver letters generally took between 12 and 14 days.[25] The transportation of goods usually required more time. The average daily distance for travellers through the Alps, regardless of the chosen means of transport ,was between 20 and 40 kilometres. Interestingly, this measure corresponds to the distance of the so-called "Susten" (roadhouses or warehouses)[26] for the transit. On the Simplon Pass road, these official points had an average distance of about 30 kilometres. As the complaints of merchants illustrate, the transport of goods between South Germany and Northern Italy took up to three months due to bad weather and further obstructions.[27] But contrary to the sea route across Gibraltar, which since the 13th century particularly was used for the shipment of heavy goods, travel over the Alps was usually predictable and relatively short. The massive transport costs led to the fact that only the transit of luxury and semi-luxury products was profitable. When the company del Bene bought fine French textiles at the fairs of Troyes in 1319, the costs for the transport to Florence, for the packaging, tolls and insurance fees amounted to an additional 16–20% of the merchandise value.[28] The study of Alain Dubois on the salt transport in the Valais of the 16th century documents offers even more spectacular sums.[29] Recent researches on the transport business across the Simplon Pass at the end of the Ancien Régime have confirmed that prior to the construction of the engineered road the costs remained at an unchanged high level.[30]

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[23] Gabriel Imboden, Marie-Claude Schöpfer, Packages in the Alpine Long-distance Trade up to the Introduction of a Standardised Metric System, in: Scripta Mercaturae. Zeitschrift für Wirtschafts- und Sozialgeschichte 43 (2009), no. 1–2, pp. 111–140, here: p. 140.

[24] Urs A. Müller, Von Trägern und Säumern. Zur Funktion von Webegleitern im Transportwesen, in: Bulletin IVS 1 (1994), pp. 5–33, here: p. 31.

[25] Schulte, Geschichte des mittelalterlichen Handels und Verkehrs, vol. I: Darstellung, p. 386.

[26] The "Susten" were identical with the official stage points where the merchant goods needed to be exclusively unloaded. Anybody who violated the regulations was given at least a financial penalty. The transit route through the Valais had several places which were privileged with roadhouse rights, entrepot rights (German: "Niederlagsrecht") and transportation rights. As a rule, the distance between these points corresponded to the approximate distance which pre-modern mule and cart/wagon transport was able to manage per day. The establishment of corporate transport organisations at these points followed the traffic upturn of the 12th and 13th centuries and at some places even persisted up until modern road construction across the Alpine passes were taken up. Cf. Ferdinand Schmid, Verkehr und Verträge zwischen Wallis und Eschenthal vom 13. bis 15. Jahrhundert, in: Blätter aus der Walliser Geschichte I/II (1889/1890), pp. 143–174, 164–167; Schulte, Geschichte des mittelalterlichen Handels und Verkehrs, vol. I: Darstellung, p. 459s.; Peter Arnold, Der Simplon. Zur Geschichte des Passes und des Dorfes, Brig 1984, pp. 33ss.; Hans Peter Nething, Der Simplon. Saumweg, Fahrstrasse, Eisenbahn, Chavez' Simplonflug, Autostrasse, Nationalstrasse N9, Thun 1977, p. 17s.; Antoine Lugon, Le trafic commercial par le Simplon et le désenclavement du Valais oriental (fin du XIIe – milieu du XIVe siècle), in: Pierre Dubuis (ed.), Ceux qui passent et ceux qui restent. Etudes sur les trafics transalpins et leur impact local. Actes du Colloque de Bourg-Saint-Pierre 23–25 septembre 1988, Saint Maurice 1989, pp. 87–99, here: p. 93, etc.

[27] Hermann Pfister, Das Transportwesen der internationalen Handelswege von Graubünden im Mittelalter und in der Neuzeit, Chur 1913, p. 71; Maria Strasser-Lattner, Der Handel über die Bündner Pässe zwischen Oberdeutschland und Oberitalien im späten Mittelalter, Magisterarbeit, Konstanz 2002, p. 101.

[28] Spufford, Handel, p. 151; Armando Sapori, Una compagnia di Calimala ai primi del Trecento (Biblioteca Storica Toscana VII), Firenze 1932.

[29] Alain Dubois, Die Salzversorgung des Wallis 1500–1610. Wirtschaft und Politik, Winterthur 1965, table in the appendix. Dubois calculates that in the 16th and 17th centuries the costs of the transportation including tolls amounted to between 50–80 % of the total costs.

[30] On the Simplon Pass route of the end of the 18th century, the transport costs generally were significant as the accounts of the Fratelli Loscho company document: the expenses registered in the "Libro d'entrata e sortita" include the carriage costs ("vittura"/"condotta") as well as expenses for customs, roadhouse fees, snow removal fees and perquisites. These costs altogether usually added up to a considerable proportion of the value of the goods. The Fratelli Loscho, for example, paid the following fees for the transport of a bale of cloth of 162 pounds forwarded by Joseph Anton Jordan on 6 December 1796: the "vittura" was credited to a value of 40 Valais batzen. Additionally, unspecified costs for customs and snow clearance for 2 batzen and 2 denari were paid (AGVO / FGA, Libro d'Entrata e Sortita, FL-9, p. 347). According to Albert Hauser, in 1790 this corresponded to 43 3/4 hours of work, whereas in 1800, 29 hours of work were necessary to obtain the same amount of money (Albert Hauser, Was für ein Leben. Schweizer Alltag vom 15. bis 18. Jahrhundert, Zürich 1987, p. 47). Furthermore, the amount is equivalent to two-thirds of the monthly wage of a hospital cook in Lausanne at the

Construction and Maintenance of Roads

In the 12th century, Europe's traffic system experienced a turning point which was marked by an economic upturn. Thomas Szabó referred to this process as "Neuentdeckung der Strasse" (rediscovery of the road). At this time, public authorities sharing in the benefits started to show interest in the route system which they successively turned into a political and economic issue.[31] The earliest written records documenting Alpine road construction relate to a 22-kilometre segment of the Rhone valley route between Martigny and Bex in the Valais. Accounts of Savoyard castellanies dating between 1284/85 and 1350 draw a precise picture of the completed work steps: gravel, faggots and wood piles were used to fix the road edges, and trenches were dug on both sides of the road so that the water was able to drain down the lane.[32]

Non-recurring road construction works did not suffice. As the accounts show, it was a permanent struggle with the natural forces. The road, washed out by the water of the river repeatedly, had to be shifted to the mountainside and cleared of rocks. Furthermore, the bridges torn away by the overflowing tributary waters had to be reconstructed. Up to 700 day labourers and up to 60, and in exceptional cases a hundred or more, wagons were annually employed in road building.[33] Construction and maintenance of the roads occasionally required the use of unusual techniques: Felix Fabri documented in his travelogue from 1483 that on the Kuntersweg and further Eastern Alpine roads, Sigismund (1427–1496), Duke of Austria, blasted roads out of the cliffs "with fire and gunpowder" ("durch Feuer und Schießpulver").[34] The early period of Alpine road construction did not leave significant traces. Furthermore, in many cases, it is difficult to determine when the few remains were exactly built. Very often, the historical routes were overprinted by modern roads. As the historical sources document, many of the tributary roads leading to the Alpine passes were improved during the Middle Ages. Consequently, until today, a lot of road sections, for example the route between Vuitebœuf and Sainte-Croix, contrariwise are classified as Roman cart tracks, though they have meanwhile been identified as medieval routes.[35] Meandering rivers made the maintenance of the access roads to the Alpine passes burdensome. Tolls, fees for escort and further duties which were raised for the administration of roads, ways and traffic infrastructure ensured the further maintenance of the constructions. These special charges, which were usually granted to individuals, usually responded to local requirements. The accounts for the "pedagium camini" of St. Maurice show that from 1276 to 1282 the merchants of Milano agreed to pay two additional pennies for the maintenance of the road from Bex to Martigny. The count of Savoy benefitted from the arrangement for this special fee with which he not only financed works on the road but also the construction of bulwarks and ditches.[36] This initiative of foreign merchants was not a singular phenomenon. Thus, since the 13th century, the merchants of Milano continuously showed interest in the Simplon Pass route which resulted in numerous traffic-managing contracts with regional potentates.[37] Their interplay was not always harmonious: in 1268 the Venetians put massive pressure on the count of Gorizia to repair his section of the "Hungarian road" in Slovenia.[38]

Though rationalisation trends characterised Alpine road construction of the early modern era, the major part of the road construction and maintenance was continuously performed mainly by locals by means of socage services. With the development of independent municipalities, the manorial burden turned into a corporative duty. Since the end of the 17th century, with the increase in efforts to maintain the roads, these duties became an element of modern statehood. As multiple complaints, for example, in the recesses of the Valais Diet about unimplemented works prove, the execution of orders issued by the authorities was not always

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end of the eighteenth century (calculated according to the information in Ein Handelshaus zu Zeiten des Umbruchs. Fratelli Loscho in Brig, in: Blätter aus der Walliser Geschichte XXXI [1999], pp. 125–135, here: p. 129).

[31] Thomas Szabó, Thomas Szabó: Art. "Strasse (westlicher Bereich)", in: Lexikon des Mittelalters, vol. 8, Munich/Zürich 1999, cols. 220–224, here: col. 222; Ibid., Die Entdeckung der Strasse im 12. Jahrhundert, in: Società, Istituzioni, Spiritualità. Studi in onore di Cinzio Violante, vol. 2, Spoleto 1994, pp. 913–929, here: p. 914.

[32] Maria Clotilde Daviso di Charvensod, La route du Valais au XIVe siècle, in: Schweizerische Zeitschrift für Geschichte 1 (1951), pp. 545–561, table p. 555.

[33] Ibid., p. 549–556; Arnold Esch, Spätmittelalterlicher Passverkehr im Alpenraum. Typologie der Quellen, in: Ibid., Alltag der Entscheidung. Beiträge zur Geschichte der Schweiz an der Wende vom Mittelalter zur Neuzeit, Bern/Stuttgart/Vienna 1998, pp. 173–248, here: p. 190s.

[34] Ernst Gasner, Zum deutschen Straßenwesen von der ältesten Zeit bis zur Mitte des XVIII. Jahrhunderts. Eine germanistisch-antiquarische Studie (Neudruck der Ausgabe von 1889), Wiesbaden 1966, p. 65.

[35] Heinz Herzig, "Römisches Reich", in: Art "Strassen", in: Historisches Lexikon der Schweiz, vol. 12, Basel 2013, pp. 50–55, 50s.

[36] Daviso di Charvensod, La route du Valais, pp. 548s.

[37] Schöpfer, Verkehrspolitik, pp. 156–164; Antoine Lugon, Le trafic commercial par le Simplon et le désenclavement du Valais oriental (fin du XIIe – milieu du XIVe siècle), in: Pierre Dubuis (ed.), Ceux qui passent et ceux qui restent. Etudes sur les trafics transalpins et leur impact local. Actes du Colloque de Bourg-Saint-Pierre 23–25 septembre 1988, Saint Maurice 1989, pp. 87–99.

[38] Spufford, Handel, p.145.

sufficient. The extensive transformation of the pass routes into engineered roads by the governments of the Alpine area during the 19th century was the most concise expression for the revolution and acceleration of the production and transportation processes. The replacement of the socage services with wage work and the professionalisation of road services through the creation of public offices and the assignment of private builders were slow and gradual processes. In the Valais this development only progressed when the French model of the "Département des ponts et chaussées" began to have a decisive influence.

4. Alpine Transport Structures

Hospices, Hospitals and Inns

The existence of maintained roads and infrastructures as well as a certain offer of services were the preconditions for the smooth running of goods traffic. In the early Middle Ages, monasteries at the starting points of the pass routes were granted with toll privileges, welcomed travellers and exercised traffic control. With the establishment of numerous hospitals and hospices, particularly since the 11th century, new forms of charitable hospitality emerged along the transalpine routes.[39]

Figure 2: The morgue of the Grand Saint Bernard hospice. Photograph by Charles Paris, presumably taken in the 1920s.

As early as in the 9th century there was a hospice on Mont Cénis.[40] Additional early hospices on the tops of the passes were located on the Grand Saint Bernard Pass as well as on the Septimer Pass and on the Julier Pass. The housekeeping accounts of the hospice of Grand Saint Bernard, which was founded by Bernard of Aoasta and sponsored by the Savoy dynasty, reveal a wide range of hospitality services: tuna fish from the south, herring from the north, slaughter cattle from the Bresse and spices from Geneva were bought. The names of high-ranking guests are specifically mentioned if the hospice had to make additional efforts to house them.

[39] Ibid., p. 156; Schöpfer, Verkehrspolitik, p. 266.
[40] Winckler, Die Alpen, p. 131: 825 Lothar I ordered that a hospice was built on the Mont Cénis pass to accommodate pilgrims. See also MGH DD Lo 1 Nr. 4, pp. 60ss.

The visit of the bishop of Ghent required four guinea fowls. In 1447 the hospice bought three dozen new drinking glasses for the Savoyard sovereign. In contrast, nameless travellers are only registered in the account books if they died on the pass route. Their bodies were brought to the hospice's morgue (cf. fig. 2) which existed until the 1980s and distinctively exemplifies the dangers of the Alpine crossing.[41] Since the 13th century, these institutions of charitable hospitality and the scattered taverns were no longer sufficient. Numerous commercial inns emerged, especially along the main traffic arteries, with the result that an Alpine hospitality network developed.[42] It is an exceptional case that the account books of a premodern inn like that of Hans von Herblingen who welcomed his guests in Thun at the access area of the Alpine passes have survived. From 1398 to 1415 his house became a hub for the trade traffic.[43]

Guides, Transport Organisations and "Susten"

The specific conditions of crossing the Alps required the local inhabitants to be capable of handling the traffic. Historical sources register so-called "marrones" (French "marronniers") for the years 900, 905, 943 and 1129 at the Grand Saint Bernard Pass, as the bodies of these guides were pulled down into the valley by an avalanche. Their mention gives evidence of an early offer of guides provided by the hospice, a service which was offered up to modern times (cf. fig. 3).[44]
In the course of the traffic expansion of the 13th century, sumpters and waggoners began to organise themselves into corporations. Through the grant of privileges from the sovereign, these cooperatives had gained specific rights which concerned the "Susten" (roadhouses or warehouses) and transportation.[45] In general, the municipally organised corporations formed themselves close to routes on which the transit, or at least an intense regional goods transport travelled. In addition to the monopolistic carriage of trade goods on chosen routes, they regularly maintained sections of road. The sumpters of the neighbouring municipality brought the purchased merchandise to the local "Suste" where they were stored for a fee. The so-called "Ballenteiler" (Latin: "partitor ballarum"), a divider of the bales,[46] later handed them over to the sumpters of his own municipality to transport them to the "Suste" of the next village. This mode of transportation, based on stages, was called "Rodfuhr" or "Portensystem". The system gave the local population the opportunity to earn an auxiliary income, whereas it occasionally did not satisfy the needs of the merchants. In the late Middle Ages, therefore, the so-called "Strackfuhr" prevailed. With this alternative transport system, the

[41] Les comptes de l'Hospice du Grand Saint Bernard (1397–1477), Lucien Quaglia (ed.), rev. by Jean-Marie Theurillat, in: Vallesia 28 (1973), pp. 1–162, 30 (1975), pp. 169–374, here: 28 (1973), pp. 113, 138, 30 (1975), pp. 181s.; Esch, Spätmittelalterlicher Passverkehr, pp. 191–198; Ibid., Auf der Straße nach Italien. Alpenübergänge und Wege nach Rom zwischen Antike und Spätmittelalter. Methodische Beobachtungen, in: Straßen- und Verkehrswesen im hohen und späten Mittelalter, hg. von Rainer C. Schwinges (VuF 66), Ostfildern 2007, pp. 19–48, here: p. 30; André Donnet, Der große St. Bernhard (Schweizer Heimatbücher 38), Bern 1950, p. 46.

[42] Beat Kümin, Wirtshaus, Reiseverkehr und Raumerfahrung am Ausgang des Mittelalters, in: Straßen und Verkehrswesen im Hohen und Späten Mittelalter, hg. von Rainer C. Schwinges (VuF 66), Ostfildern 2007, pp. 331–352, here: p. 331, 340s.; Ibid., Wirtshäuser und Bäder, in: Berns mächtige Zeit. Das 16. und 17. Jahrhundert neu entdeckt, André Holenstein (ed.), rev. by Claudia Engler, Norbert Furrer and Heinrich R. Schmidt, Bern 2006, pp. 544–550, here: p. 545s.; Marie-Claude Schöpfer, Kaufleute, Säumer und Ballenführer. Der transalpine Fernhandel im Mittelalter, in: DAMALS Sonderband: Fernhandel in Antike und Mittelalter, Stuttgart 2008, pp. 95–110, here: p. 110.

[43] Vinzenz Bartlome, Die Rechnungsbücher des Wirtes Hans von Herblingen als Quelle zur Wirtschaftsgeschichte Thuns um 1400 (Archiv des Historischen Vereins des Kantons Bern 72), Bern 1988.

[44] Quaglia, Les services du passage du Saint-Bernard établis a Bourg-Saint-Pierre, in: Annales Valaisannes 48 (1973), pp. 43–76, here: p. 44; Fritz Glauser, Die Transit-Infrastrukturen im Hohen Mittelalter, in: Wege und Geschichte 2 (2007), pp. 12–17, here: p. 15; Spufford, Handel, p. 119; Schöpfer, Verkehrspolitik, p. 171.

[45] Ibid., p. 271, 183–204. Numerous studies have been published on the Alpine transport corporations: Gerhard Börlin, Die Transportverbände und das Transportrecht der Schweiz im Mittelalter, Zürich 1896; Karl Meyer, Urkunden zur mittelalterlichen Transportorganisation in der Leventina, in: Anzeiger für Schweizerische Geschichte 11 (1910/13), pp. 171–182; Hermann Pfister, Das Transportwesen der internationalen Handelswege in Graubünden, Chur 1913; Johannes Müller, Das spätmittelalterliche Straßen- und Transportwesen der Schweiz und Tirols, in:
Geographische Zeitschrift 11 (1905), pp. 85–99, 145–162; Ibid., Das Rodwesen Bayerns und Tirols im Spätmittelalter und zum Beginn der Neuzeit, in: Vierteljahrschrift für Wirtschafts- und Sozialgeschichte 3 (1905), pp. 361–420, 555–626; Otto Stolz, Zur Geschichte der Organisation des Transportwesens im Tirol im Mittelalter, in: Vierteljahrschrift für Wirtschafts- und Sozialgeschichte 8 (1910), pp. 196–267; Ibid., Neue Beiträge zur Geschichte des Niederlagsrechts und Rodfuhrwesens im Tirol, in: Vierteljahrschrift für Wirtschafts- und Sozialgeschichte 22 (1929), pp. 144–168; Ibid., Geschichte des Zollwesens, Verkehrs und Handels in Tirol und Vorarlberg von den Anfängen bis im 20. Jahrhundert, Innsbruck 1953; Werner Schnyder, Handel und Verkehr über die Bündner Pässe im Mittelalter, Zürich 1973, pp. 22–34; Fritz Glauser, Der Gotthardtransit von 1500 bis 1660. Seine Stellung im Alpentransit, in: Schweizerische Zeitschrift für Geschichte 29 (1979), pp. 16–52; Pio Caroni, Soma et alpis et vicanale. Einleitende Bemerkungen zu einer Rechtsgeschichte der Säumergenossenschaften, in: Festschrift für Ferdinand Elsener zum 65. Geburtstag, Louis Carlen und Friedrich Ebel (eds.), Sigmaringen 1977, pp. 97–110; Ibid., Dorfgemeinschaften und Säumergenossenschaften in der mittelalterlichen und neuzeitlichen Schweiz, in: Recueils de la Société Jean Bodin pour l'histoire comparative des institutions, vol. XLIV: Les communautés rurales, cinquième partie, Paris 1987, pp. 191–222; Ibid., Über innere Verfassung und Haftungspraxis der Liviner Säumergenossenschaften zu Beginn des XV. Jahrhunderts, in: Gesellschaft und Gesellschaften. Festschrift zum 65. Geburtstag von Prof. Dr. Ulrich Im Hof, Nicolai Bernard und Quirinus Reichen (eds.), Bern 1982, pp. 61–79; Bergier, Les foires, pp. 195–202; etc.

[46] Peter Arnold, Gondo-Zwischbergen an der Landesgrenze am Simplonpass. Im Selbstverlag der Gemeinde und der Pfarrei Gondo-Zwischbergen, Brig 1968, p. 31; Ibid., Der Simplon. Zur Geschichte des Passes und des Dorfes, Brig ^{2}1984, pp. 209, 273; Schöpfer, Verkehrspolitik, p. 185, p. 135s.:. In the Upper Valais the office of the Ballenteiler even became the name of a whole family. The family of the Theiler/Teiler/Partitoris – originally resident in the Simplon Pass area – adapted their name from this privilege. Certainly, this process was facilitated by the fact that episcopal offices were inheritable.

merchandise was carried past the "Susten" by a single carrier, for example directly from Sion to Domodossola. As the "Strack" sumpters used the transit roads without contributing to the construction and maintenance, they had to pay a special fee to the neighbouring communities.[47] This so-called "furleytum" or "furleytallum" is first documented in 1260 in Chiavenna at the Splügen Pass route.[48] The division of "Rodfuhr" and "Strackfuhr" developed in a divergent way: In Grisons, where the autonomy of the local authorities was strong, the system based on stages survived until the era of engineered roads. At the Gotthard Pass, with a few exceptions, the "Strackfuhr" prevailed. It was not until the 16th century that the carriers of the different valleys finalised contracts concerning the tariffs.[49] The concurrence of rising transport companies, such as the Genoese Compagnia Rossi dell'Isola which conveyed goods between Italy, Geneva, Lucerne, Lyon, the Rhine area and the Netherlands, led to this novelty. According to Jean-François Bergier, the transportation system based on stages being a rural fealty is also documented for the Swabian-Bavarian Alpine foreland as well as for the Veneto. This finding inevitably raises the question about the Alpine-specific characteristics of the system.[50]

Figure 3: Equipped with long sticks, "marronniers" of the Grand Saint Bernard hospice carry the body of a casualty. The canons receive the group.

5. The System of the Alpine Passes

Transport Routes and Markets of the Transit

Since the 13th century, economic growth with its increased consumption needs and its demands for sales markets on both sides of the Alps resulted in more regular and intense trans-Alpine exchange. The respective traffic, with a few exceptions, used already existing routes. The earliest data on transit frequencies are recorded

[47] Pio Caroni, Zur Bedeutung des Warentransportes für die Bevölkerung der Passgebiete, in: Schweizerische Zeitschrift für Geschichte 29 (1979), pp. 84–123, here: pp. 86s.; Oliver Landolt, Straßenbau und Straßenunterhalt in spätmittelalterlicher Zeit nach zentralschweizerischen Quellen, in: Der Geschichtsfreund 163 (2010), pp. 27–72, here: p. 45; Spufford, Handel, p. 149; Schöpfer, Verkehrspolitik, pp. 173s.
[48] Guglielmo Scaramellini, Das Transportsystem vor 1800: Die Porten in der Valchiavenna seit dem Mittelalter: Fakten und Mutmassungen, in: Der Splügenpass. Zur langen Geschichte einer kurzen Transitroute / Il Passo dello Spluga La lunga storia di una breve via di transito, Georg Jäger (ed.), Chur 2016, pp. 47–70, 150: In 1314 a "fürlaiti" can also be identified in Vicosoprano.
[49] Bergier, Genève, pp. 195s.; Ibid., Le Trafic, p. 50.
[50] Ibid., Le Trafic, p. 52.

in Savoyard toll accounts of the end of the 13th century.[51] Overall they registered approximately 400 tons of goods of long-distance traffic for the Western Alpine passes of Simplon and Grand Saint Bernard as well as 500–600 tons for Mont Cénis within a year. The principal goods were wool and textiles from France and England which were brought to Northern Italy. Since 1300 this merchandise was also carried in the opposite direction. There are no documented sources for the Central Alpine area (Gothard Pass) for the respective period, whereas the most important Eastern Alpine pass, the Brenner, nourished by the Venetian trade presumably knew the highest frequencies. Based on the available toll-related sources, Herbert Hassinger estimated the merchandise transported across the Brenner around 1300 at a volume of 4000 tons for each year, of which a quarter was transit goods. The Eastern Alpine passes served for the transport of salt from Hall in Tirol in a southerly direction and of spices, cotton, textiles and wine in a northerly direction. In addition, above all, metals, fruits and olives etc. were transported across these routes.[52]

In the 14th and 15th centuries, in line with the general trend of the European economy, the quantities of the Alpine trade generally diminished. As a consequence of a climate deterioration, famines, plague epidemics concomitant with a demographic decrease, the economic output declined.[53] Furthermore, the wars in France interrupted the Flanders trade and the upturn of the north Italian cloth manufacturing additionally diminished the trade of the Northern Alpine producers of this segment.[54] Not later than with the beginning of the 15th century, a new trade route favouring the Eastern Alpine passes, which led from the Southern German cities to Italy, developed. This process was coupled with a shift among the economic centres of the continent from Central to Western Europe. The transalpine ties with Italy persisted, advantaged by the slowly noticeable recovery of the European economy as well as due to the new economic centres' enormous demand for luxury goods.[55] The decline of the fairs of Geneva in the 1560s and the simultaneous rise of more northern trade fair places like Zurzach (cf. fig. 4) reinforced the trend towards a reduction in the Western Alpine traffic, which had been looming for some time.[56] The transalpine goods traffic, which was generally growing, visibly shifted to the improved eastern passes until the beginning of the 16th century, though the frequencies of the western Alps also increased on account of cyclical reasons. The Brenner Pass continuously asserted its most prominent position within the Alpine system of transit roads. The quantities of goods transported across this pass were at a volume of at least 5000 tons of which the share of long-distance trade merchandise was c. 1200 tons. In contrast, according to the evaluations of Fritz Glauser from 1493–1505, only 170 tons were transported across the Gotthard Pass each year.[57]

In the course of the discovery of the New World, a part of the trade certainly transferred to the Atlantic coastal areas, but as Oriental products primarily were shipped across the Mediterranean to Italy and then carried across the Alps to the north, the Alpine traffic was not immediately affected. In the west, the rise of the fairs of Chalon-sur-Saône and Lyon benefited the Mont Cénis Pass, which, around 1500, had a transit volume of 500–1000 tons per year.[58] Beyond their initial functions, the Grand Saint Bernard and the Simplon Pass at the same time began to serve as routes particularly for the importation of salt. In the first half of the 17th century, transit across the latter pass again began to flourish on the initiative of the entrepreneur Kaspar Stockalper vom Thurm (1609–1691).[59] By contrast, the goods traffic across the central Alpine passes, which

[51] Daviso di Charvensod, I pedaggi; Herbert Hassinger, Die Alpenübergänge vom Mont Cenis bis zum Simplon im Spätmittelalter, in: Wirtschaftskräfte und Wirtschaftswege, vol. I: Mittelmeer und Kontinent. Festschrift für Hermann Kellenbenz, Jürgen Schneider (ed.), Bamberg 1978, pp. 313–372, here: p. 315s.

[52] Hassinger, Zur Verkehrsgeschichte, pp. 445–449; Ibid., Die Alpenübergänge, pp. 334ss., 362.

[53] Spufford, Handel, p. 12; Schöpfer, Verkehrspolitik, p. 73.

[54] Hassinger, Die Alpenübergänge, pp. 345s., 351; Jean Favier, Frankreich im Hoch- und Spätmittelalter, in: Handbuch der europäischen Wirtschafts- und Sozialgeschichte, Hermann Kellenbenz (ed.), vol. 2, Stuttgart 1980, pp. 297–326, here: p. 320.

[55] Hermann Kellenbenz, Wirtschaft und Gesellschaft Europas 1350–1650, in: Handbuch der europäischen Wirtschafts- und Sozialgeschichte, vol. 3: Europäische Wirtschafts- und Sozialgeschichte vom ausgehenden Mittelalter bis zur Mitte des 17. Jahrhunderts, Ibid. (ed.), Stuttgart 1986, pp. 2–387, here: pp. 258–273.

[56] Jean-François Bergier, Die Schweiz 1350–1650, in: Handbuch der europäischen Wirtschafts- und Sozialgeschichte, vol. 3, pp. 894–926, here: pp. 914–916; Marie-Claude Schöpfer, Jahrmärkte und Messen auf dem Gebiet der heutigen Schweiz vom Mittelalter bis zum 19./20. Jahrhundert, in: Markus A. Denzel (Hg.), Europäische Messegeschichte. 9.–19. Jahrhundert, Cologne/Weimar/Vienna 2018, pp. 203–219.

[57] Hassinger, Zur Verkehrsgeschichte, p. 451; Kellenbenz, Wirtschaft und Gesellschaft, p. 273; Fritz Glauser, Der internationale Gotthardtransit im Lichte des Luzerner Zentnerzolls von 1493 bis 1505, in: Schweizerische Zeitschrift für Geschichte18 (1968), pp. 177–245, here: pp. 199ss.; Reto Furter, Frühneuzeitlicher Transitverkehr in den Alpen, in: Schweizerische Gesellschaft für Wirtschafts- und Sozialgeschichte 25 (2010), pp. 109–120, here: pp. 112s.

[58] Gérard-François Dumont, Anselm Zurfluh (ed.), L'arc alpin. Histoire et géopolitique d'un espace européen, Paris/Zürich 1998, p. 32; Furter, Frühneuzeitlicher Transitverkehr, p. 113.

[59] Furter, Frühneuzeitlicher Transitverkehr, p. 113; Alain Dubois, Die Salzversorgung des Wallis 1500–1610. Wirtschaft und Politik, Winterthur 1965; Ibid., Die Salzversorgung des Wallis unter Michael Mageran, unpublished manuscript, Lausanne 1998; Ibid., Les fermes du sel de Michel Mageran (1608–1648) et de Gaspard Stockalper (1648–1678) comme aboutissement d'un processus amorcé vers 1530, in: Pascal Ladner, Gabriel Imboden (eds.), Alpenländischer Kapitalismus in vorindustrieller Zeit (Veröffentlichungen des Forschungsinstituts zur Geschichte des Alpenraums 9), Brig 2004, pp. 121–136. For more information about the life of Stockalper, cf. Helmut Stalder, Der Günstling. Kaspar Stockalper. Eine Geschichte von Raffgier, Macht und Hinterlist, Zürich 2019; Marie-Claude Schöpfer, Kaspar Stockalpers Verkehrspolitik, in: Idem, Heinrich Bortis (ed.), Tradition – Vision – Innovation. Hommage an Kaspar Stockalper (1609–1691) (Veröffentlichungen des Forschungsinstituts zur Geschichte des Alpenraums 12), Visp 2013,

connected battles areas, stopped for the longer term. During the 17th and 18th centuries, the constantly growing transalpine long-distance trade passed through concentration processes, which had commerce increasingly using chosen passes as its consequence. In the Western Alpine area, after the overthrow of Stockalper in 1678, the Mont Cénis pass regained its position as most important transit route. In the Eastern Alpine area, the rise of the fairs of Bozen as international trading venues from the 1630s on favoured the Brenner Pass traffic.[60] With the construction of engineered roads in the 18th and at the beginning of the 19th centuries, the Alpine transit traffic of this area once again intensified, whereas transport quantities across further passes stagnated. Thus, the Brenner Pass, which due to the economic policy of the Habsburg state was in the meantime in strong competition with the Tauern, Semmering and Karawanks passes, in 1840, with c. 100,000 tons, exceeded the frequencies of the Gotthard Pass by a factor of twenty.[61] At the same time, the Mont Cénis Pass, which since 1806 was a drivable road, experienced an upturn, whereas the Simplon Pass, reconstructed by Napoleon, the Grisons commercial routes and the Gotthard road did not show excessive growth. Above all, with the enormous competition of the railways and with the construction of lines and tunnels, since the 1850s, the transport frequencies of all Alpine passes were reduced.[62]

Secondary Transport Systems and Markets of Supraregional to Local Significance

The transit roads were obviously also used by regional trade. Conversely, with regard to the historical sources, a clear distinction between the form of transport cannot always be precisely drawn. Secondary transportation systems and passes serving the regional trade between neighbouring valleys in economic terms played a crucial part.[63] On the eastern fringe of the Alps, the Slovenian pass of Predil across which Venetian spices as well as Hungarian copper and cattle were carried was incorporated into a system of secondary passes which interconnected the Veneto region, the Tyrol, Carinthia and Slovenia.[64] On the one hand, such complex road systems created connections to central places with markets which offered foodstuffs, consumer goods, luxuries and non-Alpine industrial and cottage-industry products; on the other hand, these passes served to supply markets with inner-Alpine products, local animal husbandry products as well as with Alpine agricultural and industrial products. In the case of mining areas, an additional component was present. The Alpine economic system in this light had traffic-producing effects on multiple levels. The area surely disposed of a large number of annual fairs, which served as sources for the food supply and as markets for local products.[65]
Thus, Franche-Comté, Romandy and Savoy at the end of the Ancien Régime alone had 475 marketplaces with 1427 annual markets in total.[66] As the example of the weekly markets and annual fairs of Brig with a catchment area reaching to the Val d'Ossola shows, economic interaction frequently crossed natural and political borders. Since the 14th century, the business relations of the cattle breeders of the southern Valais valleys crossed the high Alpine passes, and thus this proves that commercial interests often were decisive. During the Little Ice Age, they preferred the regional markets of the Aosta Valley over the markets of their home country because Northern Italy offered the better sales potential.[67] Since the 16th century, the number of markets noticeably increased with the result that weekly markets and annual fairs often took place a short distance away from each other. The reason for this growth was the need for more and easily accessible exchange places for agricultural and industrial products. The Alpine market system in this sense reflects specific characteristics of the regional

pp. 103–140; Gabriel Imboden, Der Transit am Simplon zu Beginn der Ära Kaspar Jodoks von Stockalper 1634–1645, in: Enrico Rizzi (ed.), Beiträge zur alpinen Passgeschichte / Contributi alla Storia die Passi Alpini (Akten der vierten internationalen Tagung zur Walserforschung in Slügen, 6. September 1986, Anzola d'Ossola 1987, pp. 177–203; Peter Arnold, Kaspar Jodok Stockalper vom Thurm (1609–1691), vol. 1: Der reiche Stockalper, vol. 2: Der grosse Stockalper, Mörel[2] 1972.

[60] Furter, Frühneuzeitlicher Transitverkehr, pp. 114s.; Markus A. Denzel, Unternehmen, Handelshäuser und Wirtschaftsmigration im neuzeitlichen Alpenraum. Einführung, Forschungsaufriss und konzeptionelle Überlegungen, in: Ibid., Markus Stoffel and Françoise Vannotti (eds.), Unternehmen, Handelshäuser und Wirtschaftsmigration im neuzeitlichen Alpenraum (Veröffentlichungen des Forschungsinstituts zur Geschichte des Alpenraums 13), Brig 2014, pp. 1–24, here: p. 20; Andrea Bonoldi, Handel und Kreditwesen zwischen Italien und Deutschland: Die Stadt Bozen und ihre Messen vom 13. bis ins 19. Jahrhundert, in: Scripta mercaturae 42/1 (2008), pp. 9–26.

[61] Hassinger, Die Alpenübergänge, p. 461s.; Furter, Frühneuzeitlicher Transitverkehr, p. 116.

[62] Furter, Frühneuzeitlicher Transitverkehr, p. 116; Klaus Aerni, Pässe, in: Historisches Lexikon der Schweiz, vol. 9, Basel 2010, pp. 562–656, here: pp. 563s.

[63] Bergier, Le trafic, p. 13s., describes these passes as "liaison intra-alpines", a system which, according to him, also included the routes between places at different altitudes in the same valleys.

[64] Ibid., p. 35

[65] Markus A. Denzel, Märkte und Messen im vorindustriellen Alpenraum. Ihre Bedeutung für den trans- und inneralpinen Handelsverkehr, in: Anne-Lise Head-König, Luigi Lorenzetti and Andrea Bonoldi (eds.), Transits – Transit. Infrastructures et société de l'Antiquité à nos jours. Infrastrukturen und Gesellschaft von der Antike bis heute (Geschichte der Alpen – Histoire des Alpes 21), Zürich 2016, pp. 43–62, here: p. 46, 57.

[66] Radeff, Du café, p. 459.

[67] Bergier, Le trafic, p. 14.

economic structures which are not only recognisable from the products and the networks but also by the scheduling. So, a large part of the markets took place before the cattle drives to and from Alpine pastures. As the rare historical sources on the inner-Alpine commerce between places of different altitudinal belts and valleys as well as on that between Alpine and sub-Alpine zones do not give a clear answer about which types of markets dominated until the 18th century, its importance and further attributes can barely be assessed and classified.[68]

Figure 4: Plate in the chronicle of Johannes Stumpf (1548) which shows the so-called Hurentanz (ball of the whores) and the horse market in Zurzach which took place on the main day of the annual markets. During the 16th century, the Zurzach market events evolved into important fairs.

6. Concluding Remarks

Until the construction of trans-Alpine railway lines, the fluctuations of the European economy and the shifts of economic focus areas, more than other factors, profoundly affected the choice of routes, as well as the quantity, composition and frequency of goods flowing across the Alps. In particular, the rise and fall of economic centres and important international fairs, which had an impact across the Alps, led to major traffic growth on different passes. In the Middle Ages, the corresponding activities were mainly performed by non-Alpine regions; in the modern era they were also undertaken by Alpine protagonists. Therefore, pre-industrial Alpine traffic is characterised by a distinct mixture of transit, which travelled to markets usually located outside the Alpine area, and of regional trade, which served for the exportation of goods. Commercial relations across

[68] Denzel, Märkte und Messen, p. 47; Anne-Marie Dubler, Art. "Märkte", in: Historisches Lexikon der Schweiz, vol. 8, Basel 2009, pp. 297–300; Martin Körner, Das System der Jahrmärkte und Messen in der Schweiz im periodischen und permanenten Markt 1500–1800, in: Jahrbuch für Regionalgeschichte und Landeskunde 19 (1993/94), pp. 13–34; Ibid., Le système des marchés annuels et des foires en Suisse dans le cadre du marché périodique et permanent (1500–1800), in: Franz Irsigler (ed.), Messen, Jahrmärkte und Stadtentwicklung in Europa (Beiträge zur Landes- und Kulturgeschichte 5), Trier 2007, pp. 135–160; Anne Radeff, Grandes et petites foires du Moyen Age au XXe siècle, in: Nuova Rivista Storica 75 (1991), pp. 329–348; Walter Bodmer, Die Zurzacher Messen von 1530 bis 1856 (Separatum of Argovia 74 [1962]), Aarau 1962, pp. 9s.

the Alpine passes were a self-evident component of economic life and which were preferably exploited to their own advantage. The system of Alpine passes, despite remarkable shifts, especially towards the already naturally advantaged Eastern Alpine region, remained by far the most important connection between the Mediterranean region and the North Alpine countries during the entire pre-industrial era. This fact exemplifies its central function in the European economy.[69]

7. List of Figures

1: Forschungsinstitut zur Geschichte des Alpenraums, Brig.
2: Charles Paris, Mediathek Wallis, Martigny.
3: https://www.rtn.ch/rtn/Programmes/emissions/Format-A3/Barry-chien-sauveteur.html.
4: Bibliothek des Geschichtsforschenden Vereins Oberwallis: Johannes Stumpf, Gemeiner loblicher Eydgnosschaft Stetten, Landen und Völckeren Chronic wirdiger Thaaten beschreybung, Zürich 1548, p. 130.

[69] Denzel, Unternehmen, pp. 6–8.