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18. Cycling or Roller Skating: The Resistible Rise of Personal Mobility

Two-wheeled personal transport owed its origin to ice skating having become popular during the minor "ice age" at the turn of the 19th century. Yet it is still unclear why, after the short boom of 1817–19, the running machines or velocipedes disappeared from the newspapers for nearly 50 years. While one reason certainly was the fascination for the upcoming railways, another might have been that the mobile avant-garde were afraid of balancing on large wheels and switched to roller skating. For instance, inventors in the 1820s created all kinds of miniaturised 2-wheelers, resembling roller skates but called velocipedes. A model of mutual interaction is proposed where advances in the learning curve for balancing in one mode of mobility benefitted the other one. This nicely fits the rise of the front-pedal velocipede of 1866 after an American, James Plimpton, turned his roller-skate patent of 1863 into a worldwide rink business, and taught the American public to get along with both feet off the ground. The front-pedal velocipede, a batchelor machine, was in turn discarded after 2 years in favour of the more social roller skating on covered skating rinks, which took hold even in Europe.

One of the questions in cycling history for which we have no satisfactory answer is: why did it take nearly 70 years to make cycling popular among both sexes—from the velocipedes of 1817 to the safety bicycles in the late 1880s. Looking at the machines alone we cannot tell the reason, and the usual argument is the bad condition of the roads. But this is not quite true since there were indeed some good roads—especially in France—built for the military or the ruling nobility. Thus most news on German velocipede rides centered around the so-called "Kunststrassen," i.e., artificial roads that usually connected the ruler's castle with his summer residence, like Mannheim with Schwetzingen, or Berlin with Potsdam.

A much stronger argument is that legislation turned against velocipede riding, at least in England, Germany, and Italy, either to satisfy enraged citizens and carters, as was the case in England according to Davies,[1] or for political reasons as in Germany, where sportive activities of students, like draisine riding, were regarded as subversive and therefore forbidden.[2] But after a while, this prosecution must have faded away, since we have evidence of velocipede riding in the years afterwards: in Germany there was a comeback of draisines in 1833 as children's vehicles,[3] and one source[4] mentions draisine activities in Dresden in 1843. Alex Clark wrote to the *English Mechanic*[5] in 1835 that a 2-wheeled velocipede was manufactured in London. While newspapers and magazines turned their

K L I N K D I C H T

Op de AFBEELDING van den NIEUWERWETSCHEN SCHAAT-SENRIJDER, zoo als hij zijne Exercitie heeft verricht, tusſchen 'sHAGE en SCHEVENING, in tegenwoordigheid van duizende Aanſchouwers.

Op Donderdag den 19 Auguſtus 1790.

Fig. 18.1. Detail from a leaflet announcing roller skate run in 1790 (Schweizerisches Sportmuseum, Basel).

attention to the railways, we should not infer from the lack of velocipede news that velocipedes no longer existed.

From the earlier conferences, you know that my argument has been that the fear of balancing on two wheels kept the general public from adopting the 2-wheeler. Ice skaters were prepared to take on the challenge of balancing and this was a daring minority then—at least in England, France, and Germany, in contrast to the Netherlands. As a consequence, amateur mechanics everywhere returned to 3- or 4-wheeled constructions to provide the stability the public wanted. Meanwhile I looked into the history of roller skating and found some stunning coincidences, based on which I propose a new view of the history of personal mobility.

Ice Skating—Where It All Began

Around the turn of the 19th century, there must have been a minor ice age with strong winters, e.g., the Thames was frozen in 1788–89 and 1813–14, enabling skating on it.[6] Ice skating had long been a means of travel and transport in the Netherlands with its many canals, and we have a report of Dutch women skating to a distant marketplace while balancing milk vessels on their heads and knitting wool simultaneously.[7] Gender roles were different in neighbouring countries, with skating as a pastime. In France and Germany, only male skaters were allowed. Women skating was regarded as indecent—women were shifted around on stool sleds by the men.[7] When describing the new running machines of Karl von Drais, his contemporaries used the metaphor "skating on the road"; and indeed the ergonomics of his 3- or 4-wheeled ladies' rikscha (as we would call it today) is nothing more than a chair shifted around on the road.

Roller Skating

The roller skate is definitely older than the single-track velocipede. Its beginnings were presumably the need to bring ice skating on stage rather than the unrealistic desire to continue ice skating on the road in summer. The first recorded event on stage appears to have been at London's Drury Lane during a play by Tom Hood in 1743, which I have not yet been able to verify.[8] Scarce mentions are "a pair of skaites contrived to run on small metallic wheels" demonstrated indoors by John Joseph Merlin sometime between the years 1761 and 1772,[8] and "patins a terre" invented by Maximilian Lodewijk van Lede according to the 1790 edition of the Gothaic Almanac.[9]

The first picture we have is on a leaflet announcing a 3-mile run between The Hague and Scheveningen judged to be completed in 5 to 6 minutes. The soldier of the Swiss Guard was reportedly hindered by the many spectators, and the roller skates so unknown that they were exhibited afterwards in the inn "Den Orangen Jäger."[10] Anyhow, his roller skates were 2-wheel in-line skates, as we would call them today. Karl von Drais was then the tender age of 5, but of course these could have inspired his single-track invention of 1817 if he had had access to the leaflet or other literature, which we don't know.

Inspiration the other way round is more distinct. Soon after the velocipede boom since 1817, the first patents on roller skates appeared: 1819, *a brevet* without picture on a *patin* (roller skate) by the Parisian mechanic Petibled with the text: "Description of skates destined to perform in a room everything that skaters can do on the ice with ordinary skates." According to Ginzrot[7] these were 3-wheeled (1 front, 2 back) and were demonstrated outdoors in Paris. In 1823, the next patent went to Robert John Tyers, fruit merchant on Picadilly Square for his Volito; I know only the German description: "Vorrichtung zum Schnellaufen," that is, provision for fast walking, with 5 wheels in line. And in 1825, an anonymous article published in *English Mechanic* showed a velocipede which was nothing but a roller skate for one foot only while the other one was free to touch secure ground; as such it is also an archetype of a boy's scooter. In 1828, Jean Garcin obtained the brevet "for a mechanism called cingar (anagram of Garcin) for skating in all seasons *on a prepared floor*."[10] So the majority of these patents still tried to imitate an ice skate using small wheels that were unsuitable for outdoor conditions. How many users there were is unknown.

The Mobile Avant-Garde

Jean Garcin appears to be a protagonist of a social group that I would call "the mobile avant-garde." We know he was an ice skater and manufacturer of skates initially, since in 1813 he wrote a booklet on ice skating.[11] Ice skating was really something special in France, with a hierarchy of masters evolving who wore a special costume, *le gilet rouge*, the red collar; Garcin was called a *gilet-rouge*.

Then in 1818, he demonstrated the draisines in the Luxemburg Gardens of Paris, hired them out, and

gave driving lessons in several places.[12] Ten years later he switched to roller skating. Here was somebody who switched from one mode of mobility to the other in due time, and the social group to which he catered which was willing to pay for the fun of mobility must have followed this change, too.

It is not known when French women were emancipated from the stool sled on the ice. It is also not known if the rikscha-type velocipede was a success among mobile couples in 1818. It appears that the velocipede turned out to be a batchelor machine, something for daring young men, except for rare references to Johnson's lady's velocipede. Anyhow, in 1853 we find a picture showing a man and a woman roller-skating together, in a French book on ice skating.[13] Mobile fun on roller skates had become much more social than velocipede riding.

What had happened? The breakthrough was due to a stage event again: in 1849, Meyerbeer's opera *Le Prophète* showed a simulated ice-skating scene on roller skates built by Legrand, and was a huge success throughout Europe. Roller skating took off everywhere, e.g., in Berlin, where a beer hall had waitresses on roller skates.

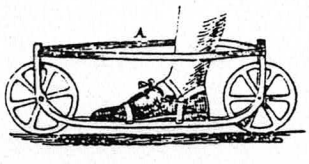
Still the simulation of figure skating on ice—which was then a true revolution—through roller skating was more than imperfect. None of the proliferating roller-skate designs could be guided in curves except at the expense of enormous friction and exertion. This problem was solved in 1863 by James Plimpton, an American mechanic who became a multimillionaire by exploiting his patent. His "rocking" roller skate had two parallel sets of wheels, one under the ball and one under the heel of the foot, working on rubber springs. When the skater pressed or leaned on one side of his foot, the front and hind wheels on that side came closer together and allowed a curved line. In the same year, Plimpton started his business of licensing skating rinks and leasing (never selling) his roller skates in his new Plimpton building in New York. It became a worldwide monopoly on roller skating and skating rinks—the start of a significant part of American culture that still exists even in small towns today where teenagers date. In 1865, the first European skating rink in London's Crystal Palace was opened.

Why not Cycle with the Feet Off the Ground?

By 1866, the balancing skills on four small wheels under each foot were already widespread, and we all know that Pierre Lallement obtained a U.S. patent in that year on the old velocipede, but now with cranks on the front wheel. This meant a very critical initial phase to gain momentum and lift the feet off secure ground to put them onto the cranks. It took the German inventor Karl Benz two weeks to teach himself riding. Several removable contraptions were developed to keep the velocipede upright. It is my point that the boneshaker was not pure chance, but only understandable with the rise of roller-skating skills.

Interestingly enough, in the U.S. boneshakers were hired out initially on indoor skating rinks[14] so nobody felt the need to buy the costly machine since an entrance fee had to be paid anyhow. Only in

A VELOCIPEDE.



SIR,—The above is the drawing of a Velocipede, intended to be fixed on one foot, when the *velocipedestrian* pushes himself away with the other. As the wheels are about six inches in diameter, it may be used on any road tolerably smooth; and as the foot is brought near the ground, and is supported by the strap, A, it will not wrench or fatigue the ancle, as the common skates do; the whole body, too, will be as much at liberty as in walking.

The patent "Land-skate" has the wheels directly under the foot, and, from their being so small, it can only be used on a boarded floor, or a place equally smooth.

I am, Sir,
Your obedient servant,
* * * * * *

Fig. 18.2. Velocipede to stand on (from Mechanics Magazine, 1825).

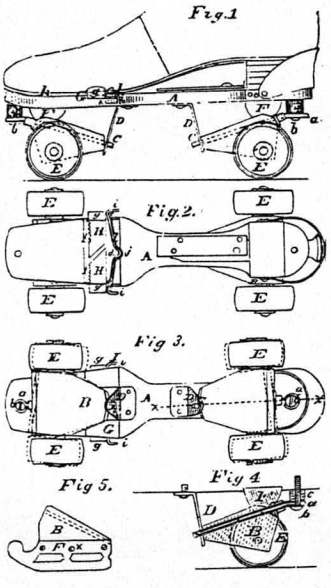


Fig. 18.3. James Plimpton's patent drawing, 1863.

December 1868, reports began about outdoor activities, and then the boom set in. In Vienna the riding school was indoors, too. In Paris boneshaker fans profitted from the new macadam boulevards constructed by Haussmann. Despite some initial fanfare and separate driving schools, women apparently did not join in in large numbers. The forged frames were heavy and the rides very strenuous—no wonder that outdoor distance riders were slower (40 miles in 15 hours) than those on the lighter draisines had been (27 miles in 7 hours). By 1869, Maurer added a roller-skating room to his enterprise. Once more cycling turned out to be a batchelor's pastime, whereas roller skating became the social event for both genders even in Europe, with rink owners organising masquerades and other get-together events. It comes as no surprise that boneshaker cycling was throttled by roller skating even before the onset of the Franco-Prussian war in 1870. A French author wrote in his roller-skating book[15]: "Roller skating is in fashion. It has replaced advantageously the velocipede."

The Give-and-Take between Cycling and Roller Skating

Needless to say, skating rinks continued to expand on the continent. Again the Grand-Bi proved to be a batchelor's machine and a stunt accessory on skating rinks. Presumably skating rinks worldwide formed the stage for the famous trick rider Nick Kaufmann.

From what has been said, I have assembled preliminary gender statistics that can be merely qualitative. The resistible rise of cycling appears to be a one-sided batchelor affair until the 1890s when women jumped onto safety bicycles. Roller skating profitted early in the 1820s from the hobby horse, but due to its two-gender openness, throttled boneshaker cycling in 1870. Cycling profitted from roller skating in 1866, and stifled indoor roller skating in the 1890s when the rinks in London and Berlin closed down. Its rebirth in 1907 as an outdoor activity.

Notes

1. Thomas Stephens Davies. "On the Velocipede," May 1837, lecture manuscript, reprinted in *The Boneshaker*, no. 108 and 111 (1985–86).
2. H. E. Lessing. "Karl von Drais' Two-Wheeler—What We Know," *Proceedings of the 1st International Cycle History Conference*. San Francisco: Bicycle Books, 1990, p. 5.
3. Karl v. Drais, letter reprinted in M. Rauck, K. F. Drais von Sauerbronn. Erfinder und Unternehmer (vol. 24 of Beiträge zur Wirtschafts-und Sozialgeschichte). Franz-Steiner-Verlag, Stuttgart, 1983.
4. Paula v. Bülow. *Aus verklungenen Tagen*. Leipzig, 1924, p. 15.
5. *Mechanics Magazine*, London, vol. 23, no. 633 (23 September 1835): 32.
6. N. N.. "Frostiana or a history of the river Thames in a frozen state...to which is added: The Art of Skating." London, 1814.
7. J. C. Ginzrot. *Die Wagen und Fahrwerke der verschiedenen Völker des Mittelalters*. Munich 1830, reprint 1979 by Olms Presse, Hildesheim-New York, vol. 3, p. 328.
8. Greater London Council (ed.). *John Joseph Merlin—The Ingenious Mechanick*, catalog, 1985.
9. *Gothaischer Hofkalender 1790*. Gotha 1790, p. 36.
10. Sam Neveu. "Les origines du roller-skate" in: Schweizerisches Sportmuseum Basel (ed), Schweizer Beiträge zur Sportgeschichte, Band 2/1990, pp. 30–55.
11. Jean Garcin. Le vrai. *Patineur ou Principes sur L'Art de patiner avec Grace*. Paris, 1813.
12. Keizo Kobayashi. *Histoire du Vélocipede de Drais a Michaux 1817–1870—Mythes et réalités*. Tokyo: Bicycle Culture Center, 1994.
13. Paulin-Desormeaux. "Patinage et Récréations sur la Glace..." *Encyclopédie-Roret*, Paris (undated, but 1853).
14. Norman L. Dunham, "The Bicycle Era in American History," unpublished thesis. Harvard University, 1956.
15. H. Mouhot, *La Rinkomanie*. Paris, undated (1876).