Extract from book

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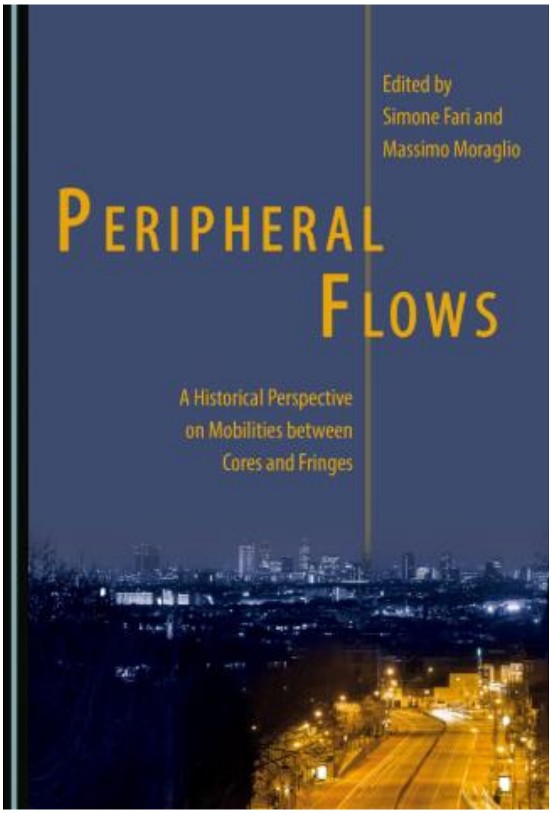

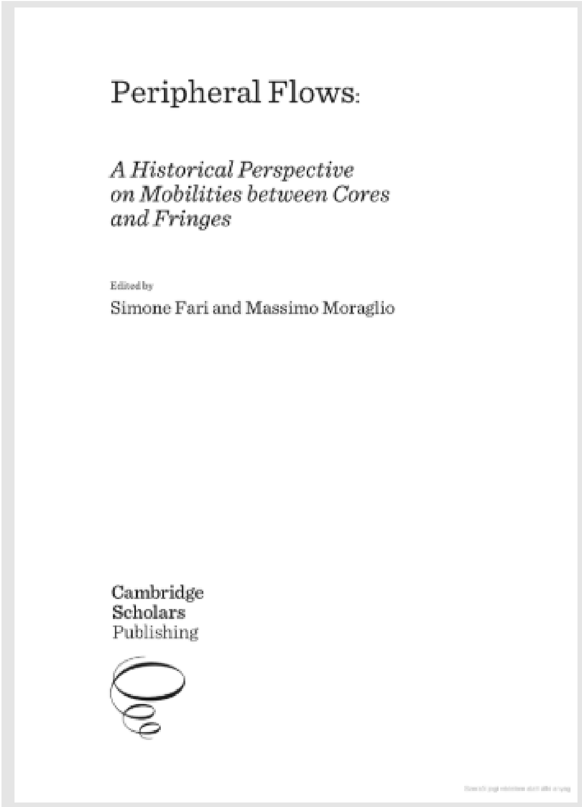
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6.4 The discreet underground

The first line (Line A), built between 1911 and 1913, responded to the AATC's plan to connect underground tunnels with its surface tram network. Although *The Times* noted on 28 December 1909, before construction, that the AATC was "proposing to construct tramway subways similar in character to the Kingsway subway (1906) in London", this mixed system was in fact based on Boston's underground tramways, according to the company. The reference to Boston Subway is important because it was the first underground in all of the Americas (1897). It also helps to trace the route of circulation of a mobility technology from Europe to the Americas, and the way in which this technology changed within the process of circulation. What I will call the "American synthesis" is the result of the observation and assessment of European models, especially Budapest's metro, carried out by American engineers. I suggest that the form and design of Line A seem to follow such a synthesis, one that expressed a particular pattern: the search for a model different from London's.

Boston's Tremont Street was an underground tunnel created in 1897 for a tramway line in order to avoid the circulation of tramcars in the central area (McKendry 2004). It was conceived as a system where the surface tram lines coming from the suburbs reached the centre through shallow underground tunnels. The tunnel was built with a steel structure by cutting a trench and then covering it up, a model later used in the construction of the AATC tunnel. Although the cut-and-cover method was used in the construction of the first underground railway in London (The Metropolitan, 1863) to shape an open trench, the rectangular tunnel, the stations supported by cast-iron pillars, and the tunnel built just beneath street level to allow rapid access to platforms through entrances from sidewalks are the main characteristics of Budapest's Metro (1896). Built by the German firm Siemens and Halske, the Budapest Metro was in fact the first underground on continental Europe. While by the 1890s London was building its well-known Tubes, the model tested in Budapest would find similarities in German and American underground railways (Figure 6. 1-4). The Paris Métro (1900) followed similar principles to Budapest, but the shape of the tunnel varied, as in Paris the vaulted version had to be used. The first line of the Hungarian Metro had another peculiarity that can be found in underground projects for New York and Buenos Aires: a kiosk to cover the entrance. Bobrick (1994) points out that the kiosks were based on the Turkish style and that after being used in the Hungarian metro, they inspired the type of entrances used in the New York Subway and other American subways like Philadelphia - although they were then removed. The evidence that Budapest Metro was a model taken into consideration can be found in Dr Segura's scheme for an underground network for Buenos Aires in 1901. One of the few illustrations available of the underground plans for Buenos Aires shows a cross-section of the tunnel beneath a boulevard and the model of kiosks (Figure 6.5).

Figure 6.1 A Line A Station

Source: D. Zunino Singh, 2015.

Figure 6.2 New York Subway.

Source: Dhan Zunino Singh, 2014.

Figure 6.3 Budapest Metro, Line 1 c. 1890

Source: Wikipedia.

Figure 6.4 Budapest Metro, Line 1.

Source: D. Zunino Singh, 2012.

Figure 6.6 Once Station, Line A, 1913

Source: Courtesy of *Archivo General de la Nación*.

These representations can be traced in the report made by William Parsons, the chief engineer of the New York IRT, as well as in the preferences of the Buenos Aires Municipality and in the technical features of Line A. Parsons, who prepared a report in 1894 after his survey of the European underground systems, pointed out that there were two "distinct and opposite principles" of construction: circular tubes "at such depth as to pass beneath all pipes, mains, sewers […]; or […] to build the railway as close to the surface […] and then to restore the surface of the street". Like municipal engineers in Buenos Aires, Parsons believed that the elevator system to transport the crowd resulted in more congestion, and that although the cut-and-cover method inconvenienced traffic during construction, it would be more convenient for passengers, as they would be closer to the surface. Hence, time would be saved when entering and exiting stations. But, fundamentally, as Parsons observed, "the deep tunnel is necessarily precluded from receiving any natural light." To guarantee the entrance of natural light, Parsons proposed:

> By roofing over such portions of the stations as lie beneath the sidewalks with glass, it will be possible to illuminate the stations not only with

> daylight but with *sun*light, and use artificial means only as evening approaches, and to destroy the popular antipathy to a "hole in the ground" (quoted by Bobrick 1994: 230-31).

Similarly, infrastructural and architectural efforts to allow the circulation of fresh air and natural light in the Line A were "another appreciable hygienic advantage over other underground railways and contributes to remove the shadowy aspect from this underground," according to the AATC (CAAT 1913). The first underground line of Buenos Aires therefore expressed an international trend that I have traced from Budapest to the US. Furthermore, this line expressed both municipal engineers' ideas and the AATC's aspirations to build a more advanced underground railway in respect to what had already been built elsewhere. The company claimed that its chief engineer, Paul Ramme (a German), had studied all the systems applied until then in order to draw the best advantages from each, and that many aspects of construction were carefully advised by engineers of the Municipality and National Sanitary Works.

In this sense, the material form shows how Line A was the result of the consumption of international trends as much as of the search to supersede what had already been done. In other words, it was the result of a process of circulation and reception of ideas, experts, materials, and capital. Regarding the latter, it is important to mention that the economic variable is the key in examining how mobility technology circulates and is implemented in different locations. A hypothesis that might explain the heterogeneity of models adopted in the underground railways in Buenos Aires could attribute the latter to the origin of companies, capital or experts. The similarity of the Spanish-Argentine lines to the Madrid Metro, which, in turn, was influenced by the French underground, seems to be a case in point. Line A, however, is a counter-example.

Line A was well known by Buenos Aires's inhabitants as the Anglo or English underground (*"el subte de los ingleses"*) - it represented the strong influence that the British had on transport. However, the structure and design of the line resemble American subways rather than the London Underground. Therefore, it is not possible to establish a direct influence of the "origin" in all cases. Furthermore, approaching influence in this way hinders the understanding of the mixture of nationalities and interests that comprise an international company.

The composition of the AATC is a good example of how an international company is a complex and multinational network. Firstly, this originally British company was, by 1909, a mixture of European capitalists led by SOFINA, a financial syndicate of German, French and Belgian bankers with a strong interest in the business of electricity and urban transport (García Heras 1994). The Italian manager, Jose Pedriali, was especially designated by SOFINA to commercially improve the company in Argentina.[12] The main engineer in charge of the design of the underground tramway was Paul Ramme, while tunnel construction was carried out by the German contractor Phillip Hollzmann.[13] On 23 September, 1911, during the construction of Line A, a reporter from the Argentine magazine *Caras y Caretas* visited the Anglo-Argentine office and commented on the national diversity of the planning team as a good sign of cosmopolitanism. Among the members of the staff:

> Ten or twelve nationalities are represented […] Argentines, Germans, English, Swiss, Austrians, Danes, Portuguese, French, Spanish, Italians, Syrians, and so on; thus, a large number of the languages of the civilised world are spoken there, picturesquely the languages mix. It is common that one begins the conversation in German, another responds in French, and suddenly they start to talk in Spanish... (Caras y Caretas, September 29, 1911)

The origin of the rolling stock and materials used for construction is another case of mixture. For example, the large part of the materials (bricks, iron-beams, and cement) used by the AATC were imported from Europe and the rolling stock (tramways) were provided mostly by Le Brugeoise (42 units from Bruges, Belgium) and only four units by the English Electric company, showing the influence of SOFINA and its Belgian capital. Contractor Phillip Hollzmann might have been proposed by the German investors. The most important and long-lasting British influence, however, was the name: while the rest of the Latin American and Spanish underground railways are called "metros", reflecting French influence, Buenos Aires is the only Spanish-speaking city where the mode of transport is called "subterráneo" (underground).