

## **The river and the metropolis: a major disconnection**

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## Introduction

This paper explores the disconnection between the river and the metropolis with regard to freight transport (Hall, 2010).

### **Waterways transport: a mode that is disconnected from production and distribution**

Waterways, like railways, today play a marginal role in freight transport. This is explained by a few simple factors related to the development of production and distribution systems. The two oil shocks of 1973 and 1979 marked the end of the thirty-year post-war Boom and the end of a cycle in which heavy industry provided the driving force for growth. Since then, bulk products and heavy products account for a diminishing proportion of freight. However, railways and waterways are particularly well-suited to transporting these heavy products (Savy, 2006). In the case of waterways, the situation is made even worse by the gradual closure of the inland industrial complexes that date from the first industrial revolution and that are located beside them.

Our entry into what is known as the “post-Fordist” era is leading to a change in production and distribution methods. Distribution is drawn by demand, based on the just-in-time principle. The products which are transported are lighter with high added value and consist of a large number of components that are manufactured in specialized units in order to benefit from economies of scale. These are geographically dispersed, even internationally. Transport demand is characterized by an increase in the number of small consignments, as a result of the just-in-time approach, and a highly dispersed nature, both in time and space.

The road has achieved market shares that exceed 80% in France and Europe because it fits well into this huge and intricate production and distribution system (Dablanc, 2007). Road transport is suited to transport demand because of its high flexibility, its low cost (which is explained by very strong competition, both within France and in Europe) and the rapidity with which it is able to reach any geographical area, which has been made possible by development of an enormous motorway network. Warehouses, which operate with trucks, provide locations for grouping, breaking bulk, sorting and storing freight. The road transport system has thus become an essential component of the production and distribution system.

Since the 1970s, a large-scale modal shift has been taking place, from railways and waterways to the road, despite what one hears in the media. The two “old” modes that date back to the industrial revolution are today very disconnected from production and distribution systems. They play only a marginal role which means they are responsible for their own decline, as witnessed by the drastic reduction in the number of boatmen and the increase in their age.

### **The river and the metropolis: spatial disconnection**

The spatial change that affects cities is also felt by freight transport which is related to production and distribution. We can identify two forces that explain the urban dynamic at the metropolitan level. Centripetal forces involve the agglomeration process which are exhibited by the city in general. Conversely, at the scale of the urban area, centripetal forces push the most complex functions outwards in order to keep those with the greatest added value in the centre (Combes et alii, 2006). These forces play a part in the dispersion and sprawling of activities into peripheral areas. These centripetal centrifugal forces at a large scale allow us to observe three stages of logistical development that are related to the urban dynamic (Figure 2).

The first took place before the industrial revolution. Valleys were the preferred locations for European towns and cities, with sites that combined an intersection between a terrestrial route and a river crossing. Watercourses were used to transport freight towards the towns, which were also the location of markets. The “freight” activity took place inside the city, directly on the shores where the boats were grounded or, in larger cities, on quays.

The second stage of logistical development took place between the 19<sup>th</sup> century to the thirty-year post-war boom, i.e. between the industrial revolution and the advent of road transport. As urban areas grew, centrifugal forces became apparent. An inner ring of suburbs developed around cities. This contained a mixture of housing and industry. Waterways, assisted by the development of canals, remained an important place for industrial sites, as is shown in the case of Strasbourg (Beyer et alii, 2012). River ports assumed industrial dimensions, which were incompatible with their central location. An initial disconnection between the river and the city occurred with the coming of the railways. As a direct competitor with waterways, railways provided an alternative for the location of industrial activities and the supply of urban areas.

The radical disconnection between the city and the river constitutes the third stage of logistical development, which came about during the thirty-year post-war boom. Here, road transport was completely dominant. At a small scale, centripetal forces continued to predominate: the largest cities contained the most warehouses as they were the major centres of production and consumption, while having very good connections with other cities as a result of the development of the motorway network (Cidell, 2010). At the scale of the urban area, the road system created leverage in favor of the centrifugal forces. The peripheral areas, where land prices diminished with distance from the centre, became more accessible as a

result of the development of the motorway network. Logistical functions were pushed into peripheral areas (Dablanc et alii, 2010). In the inner suburbs, they were also in competition with shopping centers and service sector centers. They were pushed out into the outer suburbs where spaces were still available for large warehouses which could meet contemporary logistical demand. These warehouses were located near motorway interchanges and along the bypasses that run around cities in order to benefit from good accessibility in terms of cost and time. The centrifugal forces resulted in intensive building of logistical facilities and an expansion of the metropolitan space, with a process of agglomeration along major roads which, at the scale of the urban area, played a structural role. Logistics, like housing, contributed to the metropolitan sprawl which was accompanied by the creation of new centers of activities in the periphery, giving the metropolis its polycentric nature. As the processes are very similar to those that apply in the case of housing, we have proposed the term “logistical suburbanization” to describe this third stage of logistical development.

**Table 1.**

Forces	Scale		
	Small	Medium (urban area)	Large
<b>Agglomeration</b>	+	-	+
<b>Dispersion</b>	-	+	-

**Figure 1. Disconnection between the river and the city**

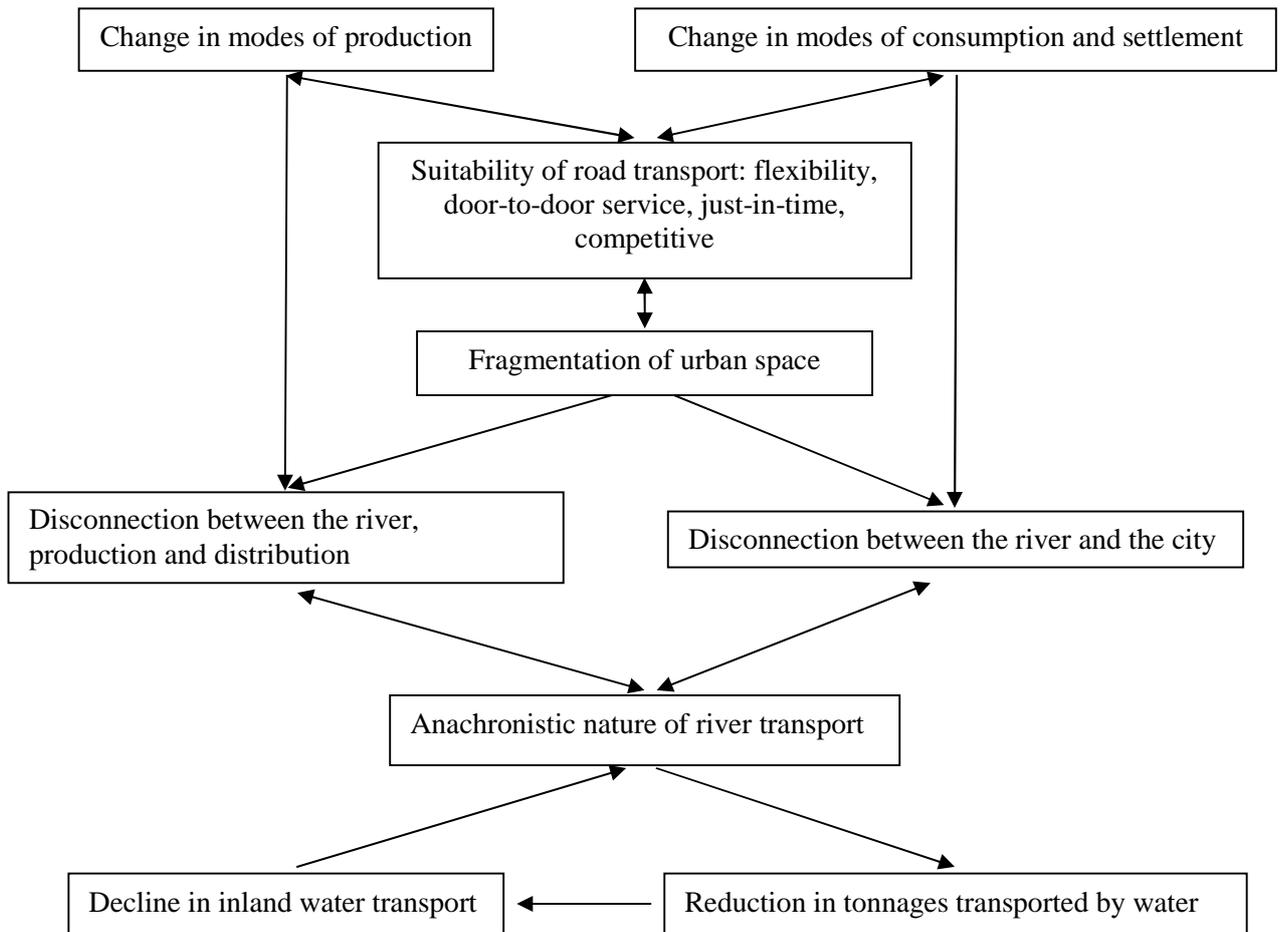
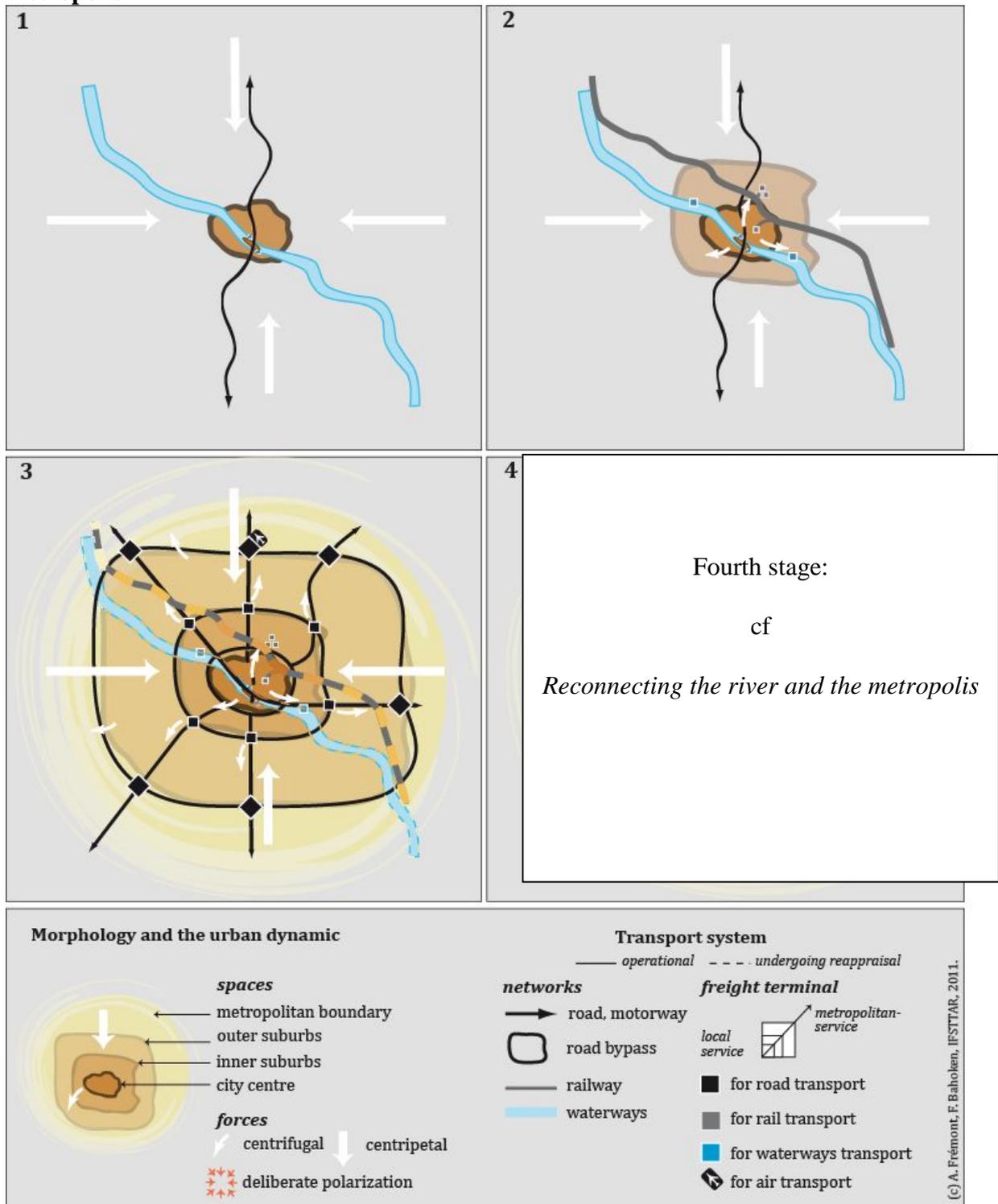


Figure 2. From connection to disconnection between the river and the metropolis



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