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What Happens When Internal but Also External Factors Configure Urban Growth ?

The case of Namur

Kurzfassung

Von ihren Ursprüngen her tendierten Städte immer zu einem Wachstum entsprechend ihrem Kommunikationsnetz. Im 19. und 20. Jahrhundert, hauptsächlich aber in der Nachkriegszeit, ermöglichten bedeutende Innovationen im Bereich der Kommunikation das Wachstum der Städte über die Stadtmauern hinaus und ließen Vorstädte entstehen. Die Siedlungen dieses Netzwerkes waren internen Zwängen wie Relief und Hydrographie entsprechend ausgerichtet. Deshalb blieben die städtischen Formen auch nahezu konzentrisch.

Zum ersten faßt dieser Beitrag die Ergebnisse früherer Forschungen in der Städtedynamik und in der städtischen Raumstruktur zusammen, zum zweiten analysiert er einerseits die Stadtentwicklung von Namur von ihren Anfängen an. Andererseits betrachtet er neuere Entwicklungen, die in bevorzugte Richtungen verlaufen, was einen sehr zerstörerischen Einfluß auf die frühere konzentrische Struktur zu haben scheint. Dieses ungleichmäßige Wachstum wird durch den Einfluß exogener Faktoren auf die Stadtregion hervorgerufen.

1. Introduction

1.1. Research in urban dynamics

Research in urban dynamics considers the stages and phases through which cities and towns pass in a specific order. Suburbanization and desurbanization are stages of decentralization, the most powerful trend recently shaping the built environment of western cities.

Suburbanization is a centrifugal movement achieved outside the traditional city at the expense of immediately adjacent rural areas. It has been mainly permitted thanks to progress in the field of communications (first public and then individual). These innovations greatly reduced transportation costs and the relative accessibility of urban areas resulting from their central location. Therefore, distant areas became more attractive as residential locations.

In the sixties, this trend of suburbanization was reinforced by increasing income; then a great number of urban dwellers sought dwellings in urban fringe or rural areas. Indeed, income elasticity of demand is higher for low density, high quality and good neighbourhood housing. This demand can be satisfied, if people settle outside the central city where land prices are lower (1). Today suburbanization is sometimes called periurbanization.

The next stage of urban development is called desurbanization or counter-urbanization. When this movement towards rural areas is achieved, it is referred to as rurbanization. It is not clear yet whether this trend of population deconcentration is an extension of suburbanization or constitutes a process of adjustments to a radically different settlement pattern; it results from a change in preferences by residents towards smaller urban areas and rural regions (2).

In contrast to periurbanization, these urban developments take place at a greater distance from the city on sites that are not immediately adjacent to existing built-up areas (3). Small clusters of urban houses are scattered and completely surrounded by rural areas so that towns now appear as the centres of a discontinuous agglomeration. Such a landscape is found more and more frequently in rural areas around cities and medium-sized towns, particularly in Belgium (4).

1.2 Research in urban spatial structure

Many scientific studies in the empirical literature investigated the urban spatial structure that resulted from decentralization processes in the suburban section of the urban region. In the description of urban spatial structure most of the works widely use the population density-distance function

approach (5). The parameters evolved over time, and their form became complicated through the addition of new parameters fitting the new urban realities, so that few models describing urban spatial structure accurately exist today (6).

Recent analysis of decentralization became more and more aware of the necessity of taking possible differences in growth into account. Indeed, some appreciable differences in the spatial patterns of urban areas became evident in various directions from the centre. However, none of the analyses really suggest why they exist (7).

It could be thought that these variations strongly depend on internal factors such as relief and hydrography, which affect transportation costs. Very often, means of transportation radiated in all directions only if physical features allowed it. But transportation routes depend on external factors, such as a new expressway or an attractive landscape.

2. Case study : Namur, Belgium

The purpose of this section is to show how internal factors have shaped the concentric urban structure of Namur, and, how exogeneous factors have caused some unequal growth patterns described below.

The results of various studies (univariate but also multivariate analysis, landscape observation) will be interpreted in order to obtain a good knowledge of the spatial structure of Namur. First, a Principal Component Analysis based on 23 variables was carried out in the districts of the agglomeration. The variables selected for this multivariate analysis fall into three categories: socio-economy, housing and demography. Secondly, a Cluster Analysis (Ward's criteria) was performed on the district's coordinates

in order to divide the agglomeration into relatively homogeneous zones. Only the most significant components have been retained. Finally, choromatic analysis (8) was used to highlight the growth axes of the agglomeration and to show the current pattern of the urban and suburban structure.

We intend to test the hypothesis that the age and the form of urban development around growing towns varies according to the characteristics of the area over which it extends. The rural fringe around Namur is made up of several rural regions, each with their own historic patterns and particular features. Lines of communication and associated patterns of accessibility, the planning status acquired for their future use, physical characteristics, the presence of old villages as well as agricultural activities which existed before urban expansion can all have a significant impact on development.

2.1 Regional context

Namur, sixty kilometres south of Brussels (see. fig. 1), is the new capital of the southern part of Belgium, situated between the larger towns of Liège and Charleroi.

Namur is mainly located on the alluvial plain at the confluence of the Meuse and the Sambre. Their valley separates two regions with very different geographical features. A rich plateau named "Hesbaye Namuroise", cultivated with cereals and a location of industrial plants, spreads out in the north. The hilly and less productive "Condroz Ardennais" extends to the south, where land is covered by woods or grassland, although a small south-eastern part of the region is cultivated. Another feature is that the north is less parcelled than the south. The agricultural spaces are characterized by large-size farms protected

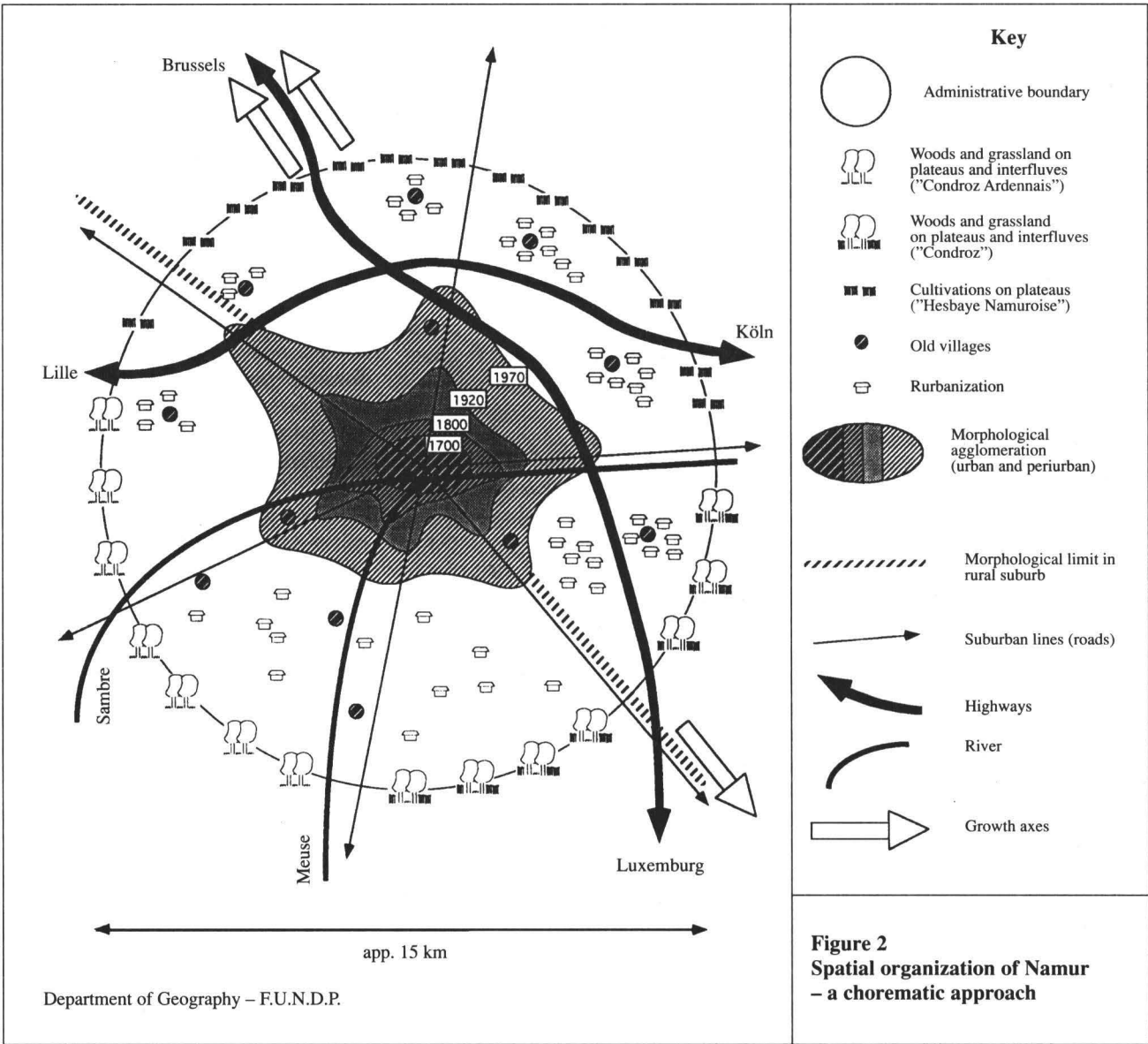
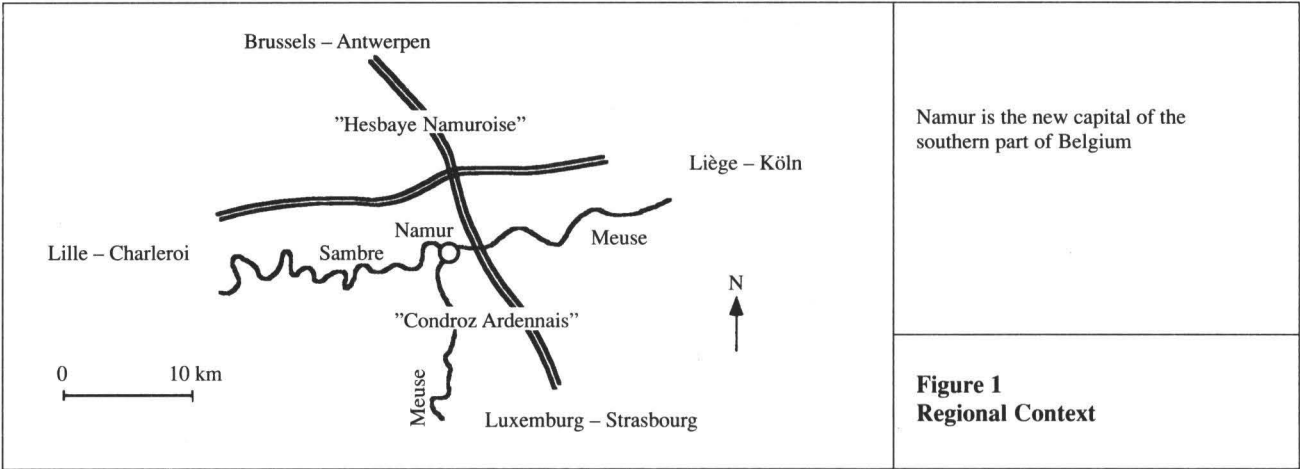
by planning restrictions. These restrictions effectively prevent the rapid urbanization in the north.

Namur, a medium-sized town, is today structured in an agglomeration with about 100,000 inhabitants and a surface of approximately 150 km². A densely built-up central town contrasts with a suburb consisting of individual periurban settlements which developed during the 20th century. A urban suburb is spreading out further.

2.2 Development of a concentric spatial structure

Until the early eighteenth century, Namur remained confined to the Sambre alluvial plain and to the confluence (see. fig. 2). The first human settlements and pre-industrial developments can be explained by the commercial and strategic opportunities which were offered by the site. Like other western European cities, Namur remained enclosed in its city walls. Population growth was prevented by the shortage of food surpluses, slow technical progress, the lack of changes in transportation means as well as by disasters such as wars, famines, epidemics and fires. The town was physically separated from the countryside by walls from the Middle Ages.

Afterwards, changes concentrated particularly on the outer periphery of the built-up area. The spatial expansion over the eighteenth century still remained determined by the valleys and the natural lines of communication. However, technical progresses and the growing importance of road infrastructures, which developed progressively over the whole nineteenth century, allowed the spread of the settlements along the main roads. They quickly leave the valleys, giving a star-shape to the agglomeration.



Although Namur is located on a node in the communication network, its urbanization is not much explained by the industrial revolution. Unlike the other Walloon towns, Namur experienced little industrialization. Its position outside the Walloon industrial axis allows it to escape from a major structural crisis which hits other Walloon urban areas today.

In the post-war period, the settlements continued to spread similarly to the previous periods, i.e. around the already existing town to form the present agglomeration. Detached houses developed in monofunctional districts along the suburban lines, reaching into the neighbouring hills. This periurbanization partly incorporated existing villages in the administrative district. Therefore, the urban fringe consists of a star-shaped urbanized area spreading into a rural area. Between the points of the star, agriculture and other non-urban uses have continued.

All these centrifugal movements have preserved the concentric form of the agglomeration of Namur, since no directions were really privileged.

2.3. Recent urban growth developments

Recent residential developments occur in the form of rurbanization of the large surrounding countryside. The expansion is no longer as closely linked with the already built-up areas (leap-frogging peripheral growth). Settlement growth appears less concentrated throughout the countryside. This rurbanization has always been more scattered and regular in the southwestern part than in northern and eastern parts of the countryside.

Moreover, these developments seem to destroy their regular concentric spatial structure. Indeed, it only takes place in some directions. This can be explained by internal factors, but mainly by the dominating role of exogeneous factors. All these factors can involve a social segregation in space.

2.3.1. Movement towards the south-west

At first, the settlement expanded south-westwards, where parcelling was very favourable for a spontaneous rurbanization. There, environmental amenities and the quality of the rural landscape, on which many urban people place a high value, are very great. Large families with younger and wealthier people became numerous.

Form

These new developments are not necessarily located on the main roads leading away from the city, but in formerly less accessible areas between the main lines of development. The settlements are established in countless small valleys covered with woods and grassland and along numerous small roads that serve an originally scattered settlement.

Hypothetic causes

This movement first occurred when competition with other European countries began in livestock breeding as a result of the opening of national boundaries in the early seventies. Most farms disappeared and were purchased by people coming from the central city. They were interested in owning a small landed property in a high-quality environment with a varied landscape. The fine countryside, physical characteristics and the rural life are eagerly sought after.

However, congested traffic routes restricted the attractiveness of this region.

2.3.2. Movement towards the north-east, east and south-east

Settlement expanded in the northern and eastern parts of the agglomeration of Namur, further beyond the communal boundary than in the south. On both sides of the motorway, villages were progressively urbanized. A demographic rejuvenation, an increase in the standard of living, and great changes in settlement were observed during the eighties. Previously, in the later seventies, when the motorway network had just been completed, these

areas were preferred housing locations for elderly people.

Form

Growth is channelled into concentrated villages. New dwellings were built close to the old villages. Unlike periurbanization, rurbanization has its source in the old villages. With the imposition of green-belt policies, the amount of newly built houses remained small. Outside the old village, expansion is limited to a few houses built along the roads or in new housing developments. Inside the village, a few houses may fill in the vacant plots which used to be grazing land of the village. At the same time, older depopulated settlements have been progressively renovated or converted.

Hypothetic causes

The necessity of essential services can also explain why such clusters are often based on already existing villages. However, the population growth in these parts of the rural area cannot only be explained by local factors. It is likely that the settlement of people in this region can be greatly explained by the accessibility of other cities via the motorway network. Only villages located along the motorway Bruxelles-Luxembourg, which are easily accessible and experience rurbanization. This motorway represents the national and European development axis, along which dynamic populations are settling down. This is a real chance for the area.

Moreover, Namur has been undergoing an intense functional change in recent years with the emergence of political power in the Walloon region. New office buildings had to be constructed. But a very large stock of historically and culturally important buildings exists in the central town of Namur. As most of them are worth protecting, an important planning choice had to be made. Spaces required for offices were found east of the central town. Among other, the alluvial plain is wide enough there, the architectural heritage was less important than in the old centre and the land values were lower. Walloon officials contribute to the unequal

growth by settling down near the motorway network, causing much commuter traffic towards other cities. Considering job opportunities as well as the easy accessibility of the motorway, the eastern part of the city is becoming very attractive as a residential location, which reinforces the unequal growth of the agglomeration.

As the demand for offices is increasing, some speculation is taking place in the housing market. Former one-family houses are often converted into flats by owners which make significant profits by letting them. The social implications are obviously serious, but this is not the purpose of this paper.

The housing market as well as the new attractiveness of the rural suburbs appear to be the main explanations for the restructuring of the urban area.

3. Conclusion

The urban growth of Namur involves recent rurbanization after a previous urbanization. This urban growth is not only determined by differences in the attractiveness of the natural environment and by historical features, but also and mainly by the motorway network as well as the new political function of the city. At present, exogeneous factors have a great significance and disturb the regular concentric organization of the urban area, producing an unequal growth of the agglomeration.

These political and economic factors on the local, regional, national and European scales shape the new urban, periurban, rurban and rural landscapes in the region of Namur, and will continue to do so. It is likely that such external factors structure the growth of many old western cities, causing some unequal growth at different stages of their recent development.

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