The Metropolitan Area of Vienna

Transitions in the Rural-urban Relationship

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Abstract

The classical contrast between the city and its surroundings, with a clear demarcation of rural and urban functions, is diminishing and therefore giving rise to a third type of landscape, the peri-urban area. This area represents a changeable zone within the rural-urban continuum with a mixture of urban and rural activities and land-uses, where the highest dynamics can be found (Tötzer 2008). These high dynamics can be related to the rural-urban relationship: a dynamic interrelationship concerning the peri-urban area, which comprises many structural and functional linkages between the city and the adjacent countryside (e.g. economic, social, cultural and physical linkages) (Bertrand & Kreibich 2006). As rural and urban interests are becoming more interwoven and complex so is the rural-urban relationship. A confusing blend of functions results, often leading to a degree of inefficient land use. In order to enable policymakers to anticipate better to the dense dynamics within the peri-urban area, this research suggests looking at these changes from a transition perspective. The main objective of this research is to examine whether fundamental changes in the peri-urban area can be traced by the concept of transition if applied to the metropolitan area of Vienna. Moreover, can the concept of transition used as analysis tool in order to make spatial planning policy better connected to the ever changing field of reality?

In our research we define a transition as a gradual, continuous process of fundamental change within a society or culture. Transitions can be seen as the outcome of the constant dynamism of complex systems, such as the peri-urban area, due to non-linear, self-organizing behaviour driven by co-evolutionary interactions. In order to narrow this complexity within the period of transition down, we distinguish different phases of transitional behaviour: predevelopment, take-off, tipping point, acceleration and stabilization. Within these phases a dynamic equilibrium of stable and dynamic elements are constantly shifting and enabling a system to evolve (Hudalah & De Roo 2007). By looking into the case of Vienna, we were able to distinguish seven different phases of dynamics which subsequently can be considered as transitional phases. Throughout the 20th century up till now, Vienna's peri-urban area was influenced by developments originating from the macro, meso as well as micro level.

Though non-linear adaptive systems such as the peri-urban area are evolving as a result of self-organizing behaviour and autonomous drivers to a certain extent, spatial planners and policymakers still can play a vital role in spatial development. Main features of transitional behaviour can be abstracted and found in all occurring transition, though the uniqueness of each system embedded in their own specific context creates diverging paths of development. To defy complexity in spatial planning, and in our case transitional behaviour in the peri-urban area, spatial planners as well as policy makers, have to become aware of different push and pull factors, autonomous or induced processes, opportunities and conditions, in order to reduce unwanted path dependencies. Therefore, by using the concept of transitions as an analysis tool, autonomous, uncontrolled processes don't seem random anymore but become more understandable and foreseeable for spatial planners amongst others. The role of the spatial planner in this perspective shifts from a reactive role towards a more anticipative role.

Preface

In April of the past year I was given the opportunity to join the PLUREL research group of the University of Groningen. PLUREL (Peri-urban Land Use Relationships) is a European integrated project focusing on the quest for 'strategies and sustainable assessment tools for urban-rural linkages' (Plurel 2009). Unlike me, each member of our research group was assigned with an 'an official PLUREL case'. Therefore, within the research group, I had a rather informal role with the metropolitan area of Vienna as an isolated case. However, by adopting a common theoretical framework, points of contact of the different cases researched in our group came to light, which made reciprocal collaboration possible. Within the following research, a transition perspective is introduced and explored in order to cope with a dynamic rural-urban relationship. From this perspective it is, hopefully, possible to provide a new and useful vision on reality and planning in practice. All in all, the following report of my findings form a Master thesis.

Approximately one year ago, I started my research of 'The metropolitan area of Vienna. Transitions in the Rural-urban Relationship'. Back then, I experienced daily life in Vienna for half a year by taking the subway to the University, by going to the Turkish shop to buy fruit, enjoying the extensive recreational area near the Danube river-bed and so on. My personal experience of the ambiance of the city and its surroundings created a proper starting point in the following research. Moreover, the collaboration with my group members was extremely helpful throughout the past year, especially for me and my 'isolated case'. Therefore, I would like to thank Gert, Marc, Ward, Koen, Corien, Stefan and Delik. And remember: we'll always have Warsaw.

Sappemeer, April 2009

Richt van der Meer

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1 Background

1.1 Introduction

Well-known American expressions such as 'the best of both worlds' and 'the middle landscape' aim at a rather positive definition of suburbia or the urban fringe: the qualities of urban life and the resources a city can offer combined with nature and peacefulness close by (Boomkens 2006, Sieverts 1997). It's not possible to 'catch' the fullness of the urban fringe and its peri-uban land-use relationships in these abstract and vague terms. On the opposite, the fringe represents a highly dynamic area where urban and rural functions coexist and should actually stand under continuous scrutiny. The balancing of conflicts of interest, competing demands and the likelihood of unwanted changes of land occupation for desirable future developments arising in the urban fringe is a matter of ongoing planning endeavors. Nevertheless, contemporary planning is mainly aimed at the cohesion of urbanization models with a focus on the city centre and its relation to the suburbs often without taking a dynamic and changing society into account (Sieverts 1997).

Sieverts (1997) states that it's necessary to call the conventional way of planning into question: only by carrying through structural changes, opportunities in shaping the *Zwischenstadt* or the urban fringe for its inhabitants will arise. Unregulated exploitation of the common good, which isn't an exception in the urban fringe, can easily lead to suboptimal, inefficient use of resources which eventually results in a waste of scarce space (Liljenström & Svedin 2005). Moreover, despite a lacking definition and appropriate research of the urban fringe, the emergence of urban development outside designated city boundaries has been a global phenomenon, which is still not yet fully understood (Boomkens 2006, Sieverts 2007, Hudalah 2007).

Reflecting on these issues and lacunas in contemporary planning regarding the peri-urban area, we could say the subject should actually be studied more intensively. Besides, the occurrence of conflicts in peri-urban land-use relationships in the fringe of most of our contemporary cities show the need for a common understanding which maybe, in a way, give rise to a new generic approach with a common objective regarding sustainability and time-space efficiency. Nevertheless, we shouldn't lose sight of the specific features which characterize the difference between urban areas: it's undesirable to return to a technical approach, resulting in a false objectivity and control, where different cities are seen as systems in the same context. A more comprehensive approach is needed to reflect on specific cases which will hopefully lead to recognition of similar occurrences taking place in the urban fringes of different cities.

In our research we review the case of the metropolitan area of Vienna, trying to fill in the lacunas of the lacking definition regarding the peri-urban area while determining the contemporary role of the spatial planner in issues originating from the dynamic urban fringe. Above all, this research tries to clarify how to enable spatial planners to anticipate timely to changes occurring in a highly dynamic area such as the urban fringe. To tell the truth, the urban

fringe seems too dynamic in its meaning and identity to leave out contemporary planning: we plead for a new approach to cope with the arising land-use issues. The next subsection outlines the main objectives of this research. Further, subsection 1.3 comprises the research methodology and an overview of the contents and purpose of the following chapters.

1.2 The Rise of the Peri-Urban Area

'The last years we said farewell to the city'. 'The title of a reader containing scientific articles about contemporary urbanism and urban culture from 2002 clearly ventilates this parting: *Post, sub, ex, dis. Urban Fragments and Constructions*' (Boomkens 2006, p.109). The rise of concepts such as the post-city, disurbia, exopolis seems, according to Boomkens (2006), a sign of conceptual powerlessness. He states that this conceptual impotence expresses the radical changes the city has gone through the last decades. These changes as a result of a globalizing world in the communication-age put an end to the more or less conveniently arranged city-landscape (Boomkens 2006). According to Hoggart (2005), our vision of city-regions, as being exclusively driven by events in its core, is rather outdated. Since flows of people, goods and communication in contemporary city-regions are directly connected and bypassing the core city, the city and its rural hinterland become more and more each others equivalent (Tacoli 1998, Hoggart 2005). Moreover, the former demarcation between urban rural areas is currently changing into 'new patterns of built/ non-built and multifunctional land-use', which creates new functional systems and land-use types, covering larger areas at regional and inter-regional scale' (Hudalah 2007, p.1). Therefore, while acknowledging the fact that urban fringes are subject to change and could play a 'lead role' in the spatial planning of rural as well as urban areas, we will search for a better understanding of the urban fringe and its rural-urban relationship.

Economic growth, an improved welfare and subsequently the increasing use of mechanized transport, especially motorized vehicles, were the main causes for the American cities to expand. 'The open country features of suburban living, lower taxes, fashion and prestige not merely attracted the surplus population, but began to invite and allure the established residents of the city itself' (Dickinson 1952, p.120). This development can be traced back to the 20th century. Back then, a majority of urban areas in dynamic, urban-industrial countries were characterized by the occurrence of an urbanisation phase, followed by suburbanization processes. The United States can be considered as forerunner since the process of urbanization and suburbanization already set in before World War II, after which the European continent followed, delayed by the war and its consequences. Despite the differences in scale and context of these urban areas, a distinct similarity could be recognized: due to the expansion of urban functions an intermediate zone, showing urban- as well as rural characteristics, rose on the outer borders of the cities (Lucas & Van Oort 1993). Dickinson (1956) states that 'the impact of urban land-uses on the countryside has produced a wide fringe of land which in its uses and the life of its people is neither urban nor rural, but sub-urban' (Dickinson 1956, p.122). Van Engelsdorp Gastelaars (2000) perceives a third type which came into existence in the 1950s in Europe and is

too rural to be seen as urban area and too occupied with urban functions to be regarded as rural. He terms this third type of landscape 'the suburban environs' (Van Engelsdorp Gastelaars 2000, p. 9). According to Sieverts (1997) the classical contrast between the urban and rural landscape is disappearing giving rise to a 'grey area': the *Zwischenstadt.* In our research, we define this 'grey area' as the peri-urban area: a changeable zone within the rural-urban continuum with a mixture of urban and rural activities and land-uses, where the highest dynamics can be found (Tötzer 2008).

These high dynamics can be related to the rural-urban relationship: a dynamic interrelationship concerning the peri-urban area which comprises many structural and functional linkages between the city and the adjacent countryside (e.g. economic, social, cultural and physical linkages). This rural-urban relationship can be regarded as a result of the interaction of the urban and rural area. According to Betrand and Kreibich (2006), two types of relations can be distinguished, namely structural and functional relations. Structural relations concern the type of land use, the 'urban organization and the spatial distribution of the population. Functional relations refer to socio-economic processes concerning diversification of land and the interconnections between various local functions' (Bertrand & Kreibich, 2006 p. 7). With the diminishing of a clear demarcation between the city and its countryside, rural and urban interests are becoming more interwoven and complex and therefore also the rural-urban relationship. Considering developments in the relation between the city and its surroundings, the rural-urban relationship has been given a spatial dimension within the peri-urban area. This relationship within the peri-urban area is characterized by an ongoing struggle between urban and rural interests, resulting in an urban fringe consisting of a mixture of rural and urban functions. One commonly felt problem within this area, strengthened by a confusing blend of functions, is a degree of inefficient land use (Yadav 1987). It seems a common phenomenon that urban expansion takes place at the expense of traditional agriculture, open spaces and green zones (Tötzer & Gigler 2008). By researching the changing rural-urban relationship within the suburban environs, the *Zwischenstadt,* or the peri-urban area, we hope to offer a starting point come to a durable integration of rural and urban interests in order to prevent wasting scarce space.

1.3 A Perspective on Austrian Urbanization

1.3.1 Austrian Urbanization

With the take-off of suburbia and the following disurbanization trend, North American suburban areas expanded by an ongoing incorporation of peri-urban fringes (Lucas & Van Oort 1993, Lichtenberger 2002). Moreover, in the large metropolitan areas with over half a million inhabitants, a complex, cross-linked inter-metropolitan network is replacing the old system 'just' focused on the city centre. Mentioned before, more and more, flows of people, goods and communication in contemporary city-regions are bypassing the core city resulting in the dissolving of the centre-peripheral pattern (Tacoli 1998, Lichtenberger 2002, Hoggart 2005). Geuting and

Schlüter (2004) define this phenomenon as *Metropolitanisierung*: a form of urban development which comes down to urban growth as result of decentralization and suburbanization in combination with flows of residents, workplaces, economic activities and other specific functions from the core-city towards the suburban districts. These global trends, which underlie the rise of the peri-urban area, can to a certain extent be found within the Austrian Republic. Additionally, Austria and the specific case of Vienna have their own characteristics regarding peri-urban areas and rural-urban relationships. Zooming in on the Austrian situation, we can say that urban expansion developed in accordance with the model of chaotic urbanization (especially Vienna) on one hand and on the other hand with the 'domestic' type of *Zersiedlung* in the rural areas[1]. Urban settlements are predominantly situated in plane areas which, in first instance, were also more than suitable for agriculture. Therefore, the Austrian rural-urban relationship is characterized by a struggle between rural and urban interests, for instance: extensive building activity throughout the Austrian Republic encountered little restrictions posed by the regional planning departments, resulting in a deterioration of the rural and historical cultural landscape. The post-war period was characterized by urban growth as a result of an increasing welfare, expressed in an increase of area required for urban functions in combination with a modest population growth. In short, traditional city lay-outs diminished through time by respectively a changing social geography of industrialization, the chaotic urbanization in the post-war period and emerging postindustrial lifestyles (Lichtenberger 2002).

1.3.2 Case-study Area: the Metropolitan Area of Vienna

Reflecting on the specific case of the nation's capital, some characteristics found within the city boundaries seem rather relevant considering peri-urban developments and dynamic rural-urban relationships. For instance, Vienna is the smallest federal state of Austria with the highest percentage of cultivated land: leaving the infrastructural and built environment out of consideration, approximately 59% of the region is covered with agriculture, forestry, horticulture and grass-land. Due to its central geographical central location, the city could develop in one of the largest and most meaningful metropoles in Europe. With approximately 1.68 million inhabitants and 2 million within the Metropolitan Area, Vienna is Austria's densest populated city (Urban Planning Bureau Vienna 2000). Moreover, the area displays the trends of an increasing population rate and an ongoing move of residents, workplaces, economic activities from the core urban area towards an expanding suburban area, a collective phenomenon in most metropolitan areas. Its metropolitan area cannot be considered as a clearly defined geographical unit, fenced off by sharply defined borders. Dickinson (1952) describes the metropolitan region as the area dependant on the metropole which 'represents a constellation of centers, the interrelations of

[1] Two types of urbanization trends on the European continent can be distinguished: the French type of chaotic urbanization and the type of *Zersiedlung* in the German language area, both founded on different ideologies. As the French type of chaotic urbanization opposes the rise of metropoles, the latter focuses mainly on the historical settlement lay-out. Nevertheless, both types entailed a rather unregulated and unplanned urban growth (Lichtenberger 2002).

which are characterized by dominance and subordination'. The influence of the metropolitan community extends beyond the suburban area 'over a more vaguely defined 'trade area' or hinterland' (Dickinson 1952, p. 18). The surrounding area of Vienna with its sphere of influence displays these distinct features to a certain extent. The city, located in the eastern part of Austria, is completely enclosed by Lower Austria (image 3.1). Considering its threefold function, Vienna has a rather 'special status' functioning as the nation's capital, a federal state (*Land*) and municipality (*Gemeinde*). Therefore, its metropolitan area, which is considered the Viennese peri-urban area, reaches beyond the city's administrative boundary and is partly situated the jurisdiction of municipalities in the adjacent federal state of Lower Austria (image 3.2) (Kaufmann 2007, Tötzer & Gigler 2008). The dynamic rural-urban relationship is characterized an ongoing conflict between the city of Vienna and the surrounding municipalities. Each municipality, Vienna included, follows their own policy when it comes to spatial planning policy (amongst other policy fields), therefore a common planning approach for the metropolitan area as a whole seems rather difficult to attain (further elaborated in subsection 4.1). Thus, the difficulty in researching changeable rural-urban relationships lies in the fact the Viennese peri-urban area is divided in the area situated within the city-borders as well as outside, which assumingly results in a rather disintegrated development path.

Figure 3.1: Vienna & Lower Austria; the city, located in the eastern part of Austria, is completely enclosed by the federal state of Lower Austria (source: www.wirtschaft-in-noe.at)

Nevertheless, changing lifestyles, for instance a higher demand of living space and environmental quality, an increasing mobility and higher commuting distances as a result of an increasing economic welfare, put pressure on green spaces in Vienna as well as in its metropolitan area (Tötzer & Gigler 2008). The Viennese peri-urban area with its rural-urban relationships has been subject to global trends as well as more regional and local influences. Looking at the metropolitan and urban developments on different scales, these dynamic processes and its spatial consequences lead to interesting dynamics related to the rural-urban relationship through time.

1.4 Objectives & Scientific Relevance

As urbanization, as a result of an increasing welfare continues, land and its resources are getting scarcer. These developments have severe consequences for land-use, the quality of life and the environment, in particular in the peri-urban areas themselves, where pressure of urban developments and rural preservation meet in an often incoherent way (Yadav 1987). Since the

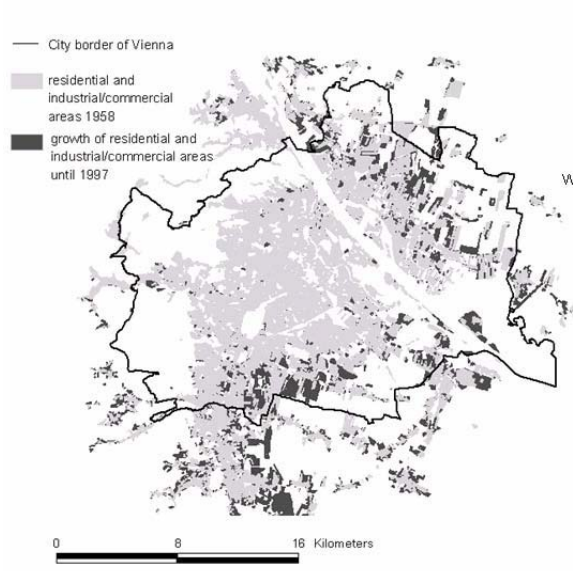

Figure 3.2: The built environment of metropolitan area of Vienna reaches beyond the city's administrative boundary, covering the surrounding municipalities (Tötzer & Gigler 2008 & Kaufmann 2007)

industries with large-scale production have left the core city and moved to the urban fringe for more space, better accessibility and less environmental constraints, Kaufmann (2007) argues that the centre of gravity in spatial developments now lies within the suburban periphery. Even though, Lucas and Van Oort (1993) mention that due to the absence of a common terminology and theoretical framework a diverging approach in dealing with issues in the peri-urban area occurs, despite the fact these issues are commonly felt (further elaborated in chapter 2). Dickinson (1952) calls attention to the rural-urban fringe regarding the ongoing trend of the replacement of country-side by suburb or town and mentions 'the extreme urgency of legislative action' (Dickinson 1952, p.123). The phenomenon of 'the peri-urban area' is drawing more and more the attention in literature contemplating on the main question asked: how autonomous are the arising developments and how can we canalize these developments through planning? Lucas and Van Oort (1993) state that the solution for the negative effects of a fast, uncontrolled urbanization lies in spatial planning. 'These dynamic and frequently uncontrolled changes are accompanied by the atmosphere of uncertainty which is the cause of temporary solutions, the lack of care for spatial order and tidiness' (Lucas & Van Oort 1993, p.37). However, in a context of dynamism and uncertainty, also opportunities arise for a durable integration of opposing interests within the peri-urban area. For instance, Hudalah (2007) and Gallent (2006) plead for the concept of multi-functionality, which could provide a foundation for the incitements posed by the dynamics and the degree of uncertainty. Concluding, it seems sensible for spatial planning to canalize the developments within the peri-urban area in order to prevent the negative effects of urbanization and to make use of opportunities arising (Dickinson 1952, Lucas & Van Oort 1993, Gallent 2006, Hudalah 2007).

The objective of this research is to examine the spatial dimension of the relationships between rural and urban interests within the metropolitan area of Vienna, assuming that they changed through time and still are subject to change. In the quest for a 'new planning approach' regarding the peri-urban area, we will concentrate on the urban fringe of Vienna by looking at it from a perspective based on complexity theory. Cities and regions are getting more complex as they evolve through time, too complex to capture them just in static numbers and figures. Complexity theory can actually give planners amongst others a starting point for a refocus of attention towards a deeper understanding of cities and surrounding regions in relation to their

dynamics (Garnsey & McGlade 2006, Maruyama 1992). To narrow this rather extensive theory down, we will look at specific non-linear occurrences related to the dynamics of the rural-urban relationship in the urban fringe of Vienna using the concept of transition in particular. Since planning often responds and subsequently tries to adapt to occurring transitions, Hudalah and De Roo (2007) state that focusing on transitions can provide a better understanding of how cities and regions behave 'at the edge of order and chaos' and for that matter give an insight for planners to renew their ability to respond to certain changes. This in order to make the peri-urban area more manageable for planners and policymakers, thus to improve the channeling of various developments (Hudalah & De Roo 2007).

Since our posed theory of exploring complexity thinking with transitions in particular (see: chapter 2) isn't a common theory yet, empirical research is necessary to test its robustness and usefulness for future planning issues. Relevant questions in our research involve the helpfulness of a transition perspective while researching planning issues in general and in our case, for the metropolitan area of Vienna. Moreover, is there a possible future role for the concept of transition in planning by embracing complexity theory and acknowledging unpredictability in planning? While researching the metropolitan area of Vienna, we have to answer to certain inquiring questions. Therefore, led by our objectives and after researching the metropolitan area of Vienna, we will be able to answer the following research question:

'Which transitions in the rural-urban relationship took place in the past and can be identified for the peri-urban area of Vienna? Moreover, what general conclusions can be deduced from using the concept of transition as an analysis tool in order to make spatial planning policy better connected to the ever changing field of reality and what will be the role of the spatial planner in this context?'

Our main research question is based on a possibly renewed theoretical framework for spatial planning by embracing complexity theory and a transition perspective. By answering to the question if *'different phases of dynamics in the rural-urban relationships can be distinguished and subsequently be considered as transitional phases',* we will hopefully be able to clarify the helpfulness of our posed theory in spatial planning.

1.5 Methodology

Though transitional behaviour in the peri-urban area of Vienna and in general is rather difficult to fence off, we tried to arrange our research as conveniently as possible to improve its understandability. In the first phase of our research a theoretical framework is shaped, based on preliminary literature research, which sets the theoretical preconditions for contemplating our case-study (**chapter 2**). Our theoretical framework is grounded on assumptions made in complexity theory. Complexity theory or complex systems theory is a scientific field which studies the behaviour of complex systems in nature, society and science. These systems, consisting of multiple parts or elements, are assumingly moving from order to chaos which shape the path towards progress that emerges at the edge of order and chaos. Another basic assumption of complexity theory is for instance the premise that single elements can spontaneously organize into complex structures due to self-organizing behaviour triggered by (contextual) developments.

A particular concept of complexity theory is the phenomenon of transition which could be described as the dynamic phase between two levels of stability which leads to structural change. Transitions can be considered as the outcome of the constant dynamism of complex systems due to self-organizing behaviour, driven by co-evolutionary interactions (Waldrop 1992). Within this structural change, different phases of dynamism can be recognized. The soundness of relating this theory to the peri-urban area, a dynamic area with a mixture of urban and rural activities and land uses, lies mainly in the fact that in this type of landscape the highest dynamics can be found (Tötzer 2008). The rise of the peri-urban area, a third type of landscape besides rural and urban, underlies the fact that differences between rural and urban entities are disappearing (Sieverts 1997). Due to changeable degrees of dynamism in its rural-urban relationships, the peri-urban area seems a rather interesting case to research more in-dept through our theoretical framework based on complexity theory.

Following a multi-layered perspective, the next three chapters consider macro, meso and micro developments specified to the rural-urban relationships of Vienna. Assuming that macro developments provide the context for complex systems in transition, we will try to render justice to these developments by giving an overview of macro developments relevant for Vienna's metropolitan area and its rural-urban relationship in **chapter 3**. In **chapter 4**, the more direct influences of the peri-urban area of Vienna as a whole are reviewed. Here, the rural-urban relationship of Vienna and its specific features are considered as meso developments, constituting the transition through time. In **chapter 5** we will look more closely to diverging local factors by considering three micro cases with the peri-urban area of Vienna. In the final chapter, we will answer our research question regarding the helpfulness of a transition perspective within spatial planning.

2 Defying Complexity in Planning

2.1 Introduction

During our research, the Viennese urban fringe will be considered in the light of systemic complexity with an emphasis on transitional behaviour. By using the concept of transition, a central conception within complexity science, certain changes will become more understandable through a richer, more comprehensive consideration of occurrences in peri-urban land uses and its dynamic rural-urban relationship. Hudalah & De Roo (2007) argue that 'the critical stages of development within cities and regions' can be related to transitional behaviour displayed by complex systems (Hudalah & De Roo 2007, p.1). By defying complexity in planning, we consider planning as an 'integrated part of gradual [and co-evolutionary] transformation of an existing system, instead of the planned creation of a new system' while completely ignoring the system's complex context (Hudalah & De Roo 2007, p.22). In this context, planning isn't about putting up with complexity in spatial planning by taking it for granted, but rather about joining in 'with ongoing dynamics rather than forcing changes' (Hudalah & De Roo 2007, p.22) by recognizing and classifying distinct occurrences in order to enable ourselves to anticipate timely to appearing transitions. However, demarcating complex systems (like peri-urban areas) from its (in) significant dynamics and on top of that rendering justice to its fullness and richness is a rather strenuous assignment which can hopefully be enlightened by our perspective based in complexity theory. In the next subsection we will clarify the basic principles of complexity and transitions in particular. Subsection 2.3 will elucidate the link between spatial planning and complexity theory with transitions in particular. The different phases of transitional behaviour of the peri-urban area will be examined in subsection 2.4 followed by an overview of how to narrow these transitions down by considering the system's multiple interrelating layers in 2.5. The last subsection contains concluding remarks about the interpretation of changes considered from a complexity theory perspective.

2.2 Basic Assumptions of Complexity Theory

A basic principle of complexity theory is the assumption of the occurrence of actions and interactions among complex systems, opposing the idea these entities consist of independent acting parts or elements. Moreover, systems don't represent an ample conception for totality. On the contrary, a system itself is interconnected in a greater context (Maruyama 1992). Thus, it's not possible to decompose a complex system to stable functional elements due to its permanent interaction with the surrounding environment and its ability to self-organize (Garnsey & McGlade 2006). Therefore, the theoretical vision of complexity theory is based on the assumption that literally 'everything ligatures with everything', yet these connections or relationships differ among each other in intention and frequency. Including those resulting in a presumably chaotic

environment (De Roo & Voogd 2004, p. 39). Due to the interaction and the involvement of many parts, aspects, details and notions, Liljenström and Svedin (2005) argue that earnest study and examination are necessary to understand or to cope with complex systems. Before examining the peri-urban area with its rural-urban relationship, we have to introduce some additional basic principles to render justice to a perspective based on complexity theory. First, the development of an open system evolves through an increasing complexity in a movement from order to chaos. In other words: a process of progress and development follows the path of order, stability and balance towards chaos, imbalance and uncertainty (De Roo & Voogd 2004). Therefore, a growing degree of complexity is expected during the development of an open system. Second, following Waldrop (1992), complex systems constantly shift from a rather stable state to a more chaotic state which represents their dynamism: they emerge at the edge of order and chaos. Due to this non-linear character with feedback loops and time delays, complex systems have a tendency to show chaotic behavior which means that its functions cannot be accurately localized (Garnsey & McGlade 2006). Regarding these constant movements, these systems can be seen as 'a balance point, often called the edge of chaos where you would encounter complex computation and quite possibly life itself' (Waldrop 1992, p.12 & p.235). This balancing situation leaves a margin for creativity and innovative ideas to arise while giving systems the opportunity to evolve. At last, due to the adaptive, co-evolutionary capacity of complex systems they can 'undergo spontaneous self-organization' by a local interaction of endogenous parts or elements which can produce stable, but also evolving global patterns (Waldrop 1992, p.12, Rihani 2002). Moreover, single elements within a complex system can spontaneously organize into complex structures due to self-organizing behaviour triggered by (contextual) developments (Waldrop 1992). Complexity thinking assumes that new, stable and orderly systems at a higher level come into existence after a 'chaotic period' within a complex system (Waldrop 1992). In addition, systems owning the aforementioned characteristics can be designated as non-linear, adaptive systems or class IV systems according to the specific classification of Wolfram[2]. Class IV systems are characterized by their rather dynamic nature of constant movement between orderly linear behaviour (Class I & II systems) and chaotic behaviour (Class III systems) (De Roo & Hudalah 2007).

Considering the above mentioned characteristics of complex systems, it can be rather difficult to distinguish apparent causal relationships. Therefore, it's rather unlikely to forecast certain outcomes by standard measures based on a plain causal relationship (Garnsey & McGlade 2006). A high degree of uncertainty or 'remote causality' derived from a complexity perspective restrains us in forecasting an indisputable end situation. However, remote causality or a presumable variety in outcomes due to high uncertainty doesn't have to be disadvantuous (De Roo & Voogd 2004). On the contrary, according to De Roo and Zuidema (2004) there are especially surprising and innovative results ahead of us by embracing complexity theory and

[2] Class I systems or *closed systems* have two possible situations for parts or elements: living or dead. In Class II systems or *circular feedback systems*, the elements develop into static groupings including an oscillation between fixed states. Class I and II systems can be seen as linear systems with an orderly situation and a static equilibrium. Class III systems or *open network systems* are chaotic systems, the show no predictable pattern or stability (Hudalah & De Roo 2007).

acknowledging unpredictability in planning. Therefore, complexity theory and transitions in particular can bring a new perspective on planning thinking and make way for new ideas and approaches in our research, but also for spatial planning in general.

2.3 Complexity Theory & Spatial Planning

After a rather abstract introduction of the theory, we will connect complexity thinking to planning and clarify the statement that complexity thinking in planning can provide us with innovative solutions to planning issues. Complexity theory is an emerging issue in contemporary planning thought. According to Voogd (2006), planning involves dealing systematically with chaos instead of systematically structuring chaos, since systematically structuring chaos inherently means that we would deny a complex reality. Emphasizing a complex reality, De Roo and Zuidema (2004) state that uncertainty as a result of a presumable chaos should be accepted as a reality. So what does complexity thinking actually mean for spatial planning? Urban areas are becoming more and more complex as they evolve through time (De Roo & Zuidema 2004), too complex to use a planning approach 'just' based on scientific, reductionist principles or to use a classical systems approach. In addition, our previous understanding of urban areas and its dynamics is more or less outdated: a simplistic reproduction left out a lot of relevant aspects for our understanding of peri-urban development (Garnsey & McGlade 2006). So, within a dynamic and increasingly complex reality, how can we abstract its meaning and substance relevant for planning?

The main issue for planners is their inability to cope with a dynamic society: our society is changing quickly while planning practice and processes lingers on ideas and procedures from a different age (Allmendinger 2002). In order to cope with a complex reality, De Roo (2004) states that the extremes of simplicity or technical rationality and complexity or communicative rationality are connected instead of being each others unbiased opposites. This assumes a synthesis of the technical extreme, focused on goal maximization by a general approach in which uncertainty isn't acknowledged, with the communicative extreme focused on optimizing the 'one of a kind' process while embracing uncertainty and complexity[3]. By adding the dimension of time, in particular the relaxation time[4], a different light is shed on planning: issues in planning evolve between order (technical rational) and chaos (communicative rational) through time.

The main relevance for spatial planning is the fact that planning issues in general, and in our case planning issues within the peri-urban area, should be considered by its degree of complexity. Moreover, from this point of view, uncertainty is inevitable and should be taken into account in planning thinking by contemplating and to a certain extent understanding different systems, their context, their variability and dynamism.

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[3] A specific division based on different degrees of complexity within occurring problems in spatial planning is elaborated by De Roo. He states that every question or problem should be considered in its individual context before putting essential output into practise (De Roo 2004).

[4] One assumption of systems theory is that certain relations between elements within a complex system don't have to be present from the beginning on, but can become active through time. 'This period of time is called the relaxation time of a relation' (De Roo & Voogd 2004, p.41).

2.4 Transitional Behavior of the Urban Fringe

Transitions can be seen as the outcome of the constant dynamism of complex systems due to self-organizing behaviour driven by co-evolutionary interactions. This dynamism creates the capacity of complex systems to adapt by rearranging their internal structure in order to cope with changes which subsequently also influences their surrounding environment. The persistence of the transition depends on the interrelated processes within a complex system and its context, which gains critical mass to eventually trigger a fundamental change. This crucial condition in the transition process is (among other catchy definitions) called: 'the tipping point', the point where the degree of dynamics is at its highest. From this point on, the system continues to evolve into a new level of stability by reaching a new equilibrium (figure 2.1) (Hudalah & De Roo 2007). Hudalah and De Roo (2007) state that a transition changes the collective attitude and behaviour of the system instead of changing its fundamental elements. Thus, a transition could be seen as a shift from one phase of order and stability to a second, new stable phase, with a period of different degrees of chaos, dense dynamics and little stability in between, resulting in a structural change (Garnsey & McGlade 2006). A new phase is reached when the transition or co-evolution has been completed and stability will return in the system.

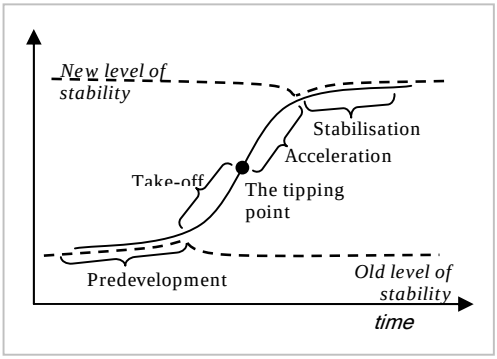

Figure 2.1:
A basic representation of the transition process (Hudalah & De Roo 2007)

These evolutionary characteristics are especially displayed in socio-economic systems, which underline the importance of considering planning thinking through the lens of complexity theory. However, a significant methodological question is: how to narrow down non-determinism, holism, non-linearity with feedback loops and time delays and spontaneous self-organization into a model? The extensiveness of complex systems makes it almost impossible to easily formulate general laws or principles. Nevertheless, a simplification or model is needed to make this multifaceted concept of complexity manageable. To offer a starting point, we distinguish four main phases within transition: (1) predevelopment, (2) take off, (3) acceleration, and (4) stabilization phase (figure 2.1). The 'predevelopment phase' represents a rather stable system where change and activity start to emerge under the surface. In the 'take off phase' the system gains critical mass and shifts from the previous level of stability towards the actual transition, resulting in a structural change becoming visible at the surface. After reaching the tipping point, the 'acceleration phase' takes off and the structural change will be spread all over the system. Finally, in the 'stabilization phase', dynamics decreases and a new foundation is strengthened and embedded within a new hefty situation (Rotmans et al. 2001, Hudalah & De Roo 2007).

As mentioned before, the development of a complex system evolves through an increasing complexity in a movement from order to chaos and back again. After reaching the balance point or the 'edge of chaos' after the predevelopment phase, developments are mainly

conducted by push-factors and we can distinguish a balance between dynamics and stability. Once the system reaches the tipping point, the transition is considered irreversible: the greater part of elements shaping the complex system is highly dynamic and 'unstoppable'. After this rather chaotic phase, due to the creation of pull factors in the last stages (acceleration and stabilization phase), the transition towards a stable phase can be influenced to a certain extent (Hudalah & De Roo 2007). Thus, the transition takes place under the influence of a changing interplay of stability and dynamics. Dependent on the phase in transition, the level of stability differs in proportion to the level of dynamics (figure 2.2).

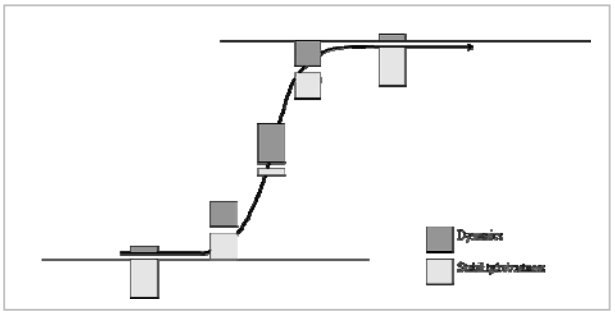

Figure 2.2: Stability and dynamics in the transition process (De Roo 2008)

Considering the transition under the influence of push and pull factors, we assume that the two first phases in the transition are characterized by certain push factors. The last two phases after the tipping point are dominated by the 'pull factors from the emerging contextual environment' (Hudalah & De Roo 2007, p. 10). It is assumed that with a dominance of push factors, a negative structure exists with a low degree of sustainability in a supply-driven economy. Subsequently, by the creation or emergence of pull factors a more positive structure comes into existence, characterized by a demand driven economy and a more sustainable situation (figure 2.3). From this perspective, is seems relevant to realize oneself that it's rather difficult to forecast when a new equilibrium is reached and what it eventually comes down to. Therefore, a focus on the phases of transition within stable periods seems rather helpful. During these phases, push and pull factors will determine the path, the size and content of the transition for a vast part.

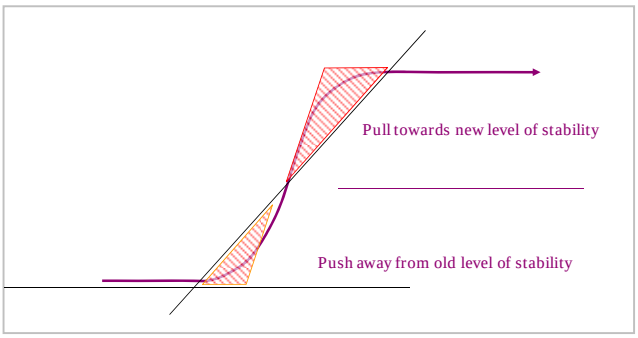

Figure 2.3: Differentiating push & pull factors (De Roo 2008)

Mentioned before, the high dynamics within the peri-urban area are closely related to a changing rural-urban relationship. Thus, these relationships aren't static, on the contrary, they proved to be rather dynamic through time. Hudalah and De Roo (2007) suggest to consider the peri-urban area as a complex system and therefore, changes or transitions in the rural-urban relationship as a progress indicator. In order to do so, they distinguish three different stages or levels in the development or evolution of the rural-urban relationship through time (figure 2.4). At the first level, the rural-urban relationship is based on a clear demarcation in which the rural and urban area form independent entities. This rural-urban divide can be observed in the classic mono-centric city-region with the medieval city as a rather obvious example: the city is clearly

separated from its surroundings by a city wall. 'In this situation, spatial development in the rural-urban fringe had not become a common phenomenon' and can be considered a 'neglected spatial aspect both within society and policy discussions' (Hudalah & De Roo 2007, p.14). In the meantime, 'as more mixed activities take place and more people live in the rural-urban fringe, the interaction between city and countryside is intensified' (Hudalah & De Roo 2007, p.14). This interconnection, which evolves through time, represents the second level in the evolution of the rural-urban relationship. At this level for instance, the rural area functions as a supplier for the urban area and urban functions develop at the interface of the rural-urban area. Due to a basic linkage between the rural and urban area, the demarcation is slightly dissolving. Moreover, as a result of a growing awareness of the spatial dynamics within the urban fringe and the increasing strength of the rural-urban linkages at that place, the rural-urban fringe becomes 'more significant within societal and policy debates' (Hudalah & De Roo 2007, p.15). At the third level, a rural-urban integration took place on all kinds of levels, dissolving the rural-urban divide. It is at this stage that the preservation of the qualities of the rural hinterland is considered equally as important as the expansion of urban functions. Instead of an imbalanced relationship due to competitive behavior and the perception of being independent, the two entities become complementary.

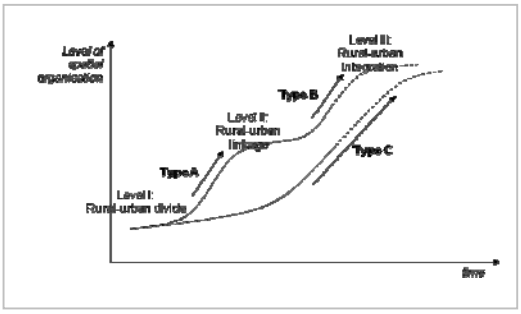

Figure 2.4: Different stages in the rural-urban relationship (Hudalah & De Roo 2007)

The difficulty lies in separating the chaff from the weed: what is the relevance of the multiple transitions within the extensive context or environment of the complex system? On top of that, the pluri-potential[5] nature of complex systems doesn't make the foreseeing of changes easier. However, a focus on the degree of dynamics by tracing the push and pull factors, the path, the size and the content of the transition, can give us a starting point.

2.5 A Multi-layered Perspective

A combination of policy adaptation and anticipation is desirable, which stresses the importance of continuous analysis of former and future transitions. In this way we might be able to understand transition in complex systems and recognize certain path depending factors which stimulate these changes. The information generated by this analysis is of vital importance especially for planners and policymakers. This in order to attain a more common planning approach in general and in our case, for the metropolitan area of Vienna. According to Hudalah and De Roo (2007), dynamics within a transition process can be perceived by exploring path dependence and path creation. 'Path dependence represents an ordered (stable) situation in which history and persistent rules constrain change and innovation' (Hudalah & De Roo 2007, p.11). Path creation on the opposite

[5] This concept refers to the multiple potential outcomes regarding the development or transition of a complex system among other subjects.

portrays a dynamic, chaotic situation which can give rise to opportunities for change and innovation to evolve. Therefore, the degrees of path dependence and creation, which represent the degree of dynamics during a transition process, are variable throughout the duration of the transition. Holding on to the elucidation of Hudalah and De Roo (2007) on this subject, transition consists of four characteristics: the path, the size, and the period and the content of transition[6]. This narrowing down of transitions to four characteristics makes the selection and recognition of occurrences in the urban fringe sounder. Moreover, to structure our interpretation, we will use a multi-layered perspective. With this, we try to capture and structure the interconnected processes that trigger transitions. By distinguishing the macro, meso and micro level, we pay attention to global phenomena as well as the local occurrences relevant to our research.

Relevant occurrences or transitions on macro level are the ones originating from the national or international level that influence the metropolitan area of Vienna as a whole significantly. These external changes provide certain preconditions or contextual aspects for the transitional behavior of complex systems. By the meso level, we look at more specific at the direct influences on the Viennese peri-urban area with its rural-urban relationship through time. To render justice to specific occurrences within the Viennese peri-urban area and rural-urban relationships, we research three unique micro-cases made possible in the context of macro and meso developments. Following Hudalah and De Roo (2007), we categorize the interrelated changes observed at the macro, meso and micro level in material, organizational and institutional changes. Material changes range from physical changes, urban and regional dynamics to catastrophic events and have a distinct causal explanation in common. Organizational changes develop through changeable attitudes and behaviors of influential actors, for instance economic actors, political actors, governments and non-governmental actors. Institutional changes, at last, include altering frameworks of meaning and shifting values which underlie the foundation for a new stable phase. These changes comprise shifting cultural values, formal rules and ideological forces (Hudalah & De Roo 2007).

2.6 Conclusion

In this chapter we clarified that the concept of transition could be helpful in a further understanding of the dynamic nature of rural-urban relationship. However, despite a basic representation of transition processes and its 'tipping points' for classifying the dynamic change within the urban fringe, we have to be careful with the interpretation of the exact changes. Figure 2.1 shows an upward trend, which in fact means that the change is qualitative and is or will be clearly manifest in the form of the city in a rather positive sense. Qualitative change can be defined by the emergence of new classifications of an object, which are significant for our contemporary world (Garnsey & McGlade 2006). This implies that change as we see it, cannot be

[6] First, the path shows the different steps of transition and the choices being made. Second, the lacuna of high dynamics between the old and new level of stability can be seen as the size of the transition. Further, the period in which the transition will take place comes down to the velocity of the transition process and at last the different levels of stability involved in a transition process define the content of the transition process (Hudalah & De Roo 2007).

value-free from our contemporary world-view. Therefore positive, qualitative change is a rather subjective conception. While disentangling our case-study, we have to be critical and not shaping facts in a way to verify the theory concerning this research. Moreover, by distinguishing different push and pull factors, we have somewhat of a starting point to value developments in the rural-urban relationship in the metropolitan area of Vienna.

3 Macro Developments of Vienna's Peri-urban Area

3.1 Introduction

From a multi-layered perspective with a 'degree of aggregation, changes play at different levels of influence, which is theoretically spanning between micro, meso an macro level' (Hudalah & De Roo, 2007, p. 18). Hudalah and De Roo (2007) describe macro transitions as 'catastrophic events, changing behaviour of international investors and organizations, and globalizing rules and ideologies' (Hudalah & De Roo 2007, p.18). Moreover, a macro transition can also occur gradually due to its interplay with transitions appearing on the meso and micro level. While assuming that macro developments can determine as well as provide the context for complex systems in transition, we will try to render justice to these developments by giving an overview of macro developments relevant for Vienna's metropolitan area and its rural-urban relationships through time. Presuming that by analyzing a longer period of time, changes in socio-economic organization, land use and land cover become apparent, we start of with the Viennese urban history and morphology. In subsection 2.2 we concentrate on significant economic trends followed by demographic trends. Subsection 2.4 contains an elaboration on Austria's contemporary planning system with the constraints encountered within the metropolitan area of Vienna.

3.2 Urban History & Morphology

Vienna's urban history and urban morphology create a distinct context for rural-urban developments in past and contemporary developments. After a short overview of the city's urban history and morphology, we will point out the specific characteristics which proved to be of relevance for development of rural-urban area through time.

Due to a central geographic location in Europe, Vienna was founded in 15 BC by the Romans as a military post opposing the Germans, named Vindobona. In the 13th century, Vienna obtained city rights and in 1438 the city became the capital of the Habsburg Empire (Lichtenberger 2002). To illustrate the origin of the contemporary urban settlement with its special features, its status as former capital of an extensive Empire as well as geomorphologic specifics seem rather relevant. The specific case of Vienna shows a transitional position of the metropolitan area at the fringes of the Alpine foothills with Pannonian[7] climate influences which gives rise to several rural developments. The diverse scenery caused by the variance in height (e.g. the Vienna forest on the foothills, the Danube landscape and the Viennese basin), results in a multiplicity of agricultural areas and functions (Urban Planning Bureau Vienna 2000). The geomorphologic specifications with a low degree of availability of raw materials and supplies

[7] The Pannonian lowlands are an extensive marshland in the southern part of Central Europe, which is traversed by the middle course of the Danube and the lower course of the *Theiss.* The lowland ligatures geological with the *Wiener Becken*, giving rise to the distinct climatic features in the Viennese region (Lichtenberger 2002).

characterized the industrial development in the Vienna region. Coarse sand, fine aggregates and forests formed the basis for the construction materials, wood and paper industry. Especially manufacturing and the processing of agricultural products formed the remaining part of the industrial activities. Water, as a source of power, as auxiliary matter, as outlet and transport channel was a significant condition for industrial companies to settle in or around Vienna. Moreover, the accessibility of the Viennese Basin and the Viennese metropolitan area as location of distribution made several manufacturing companies prosper since the 18th century (Fesl 1968).

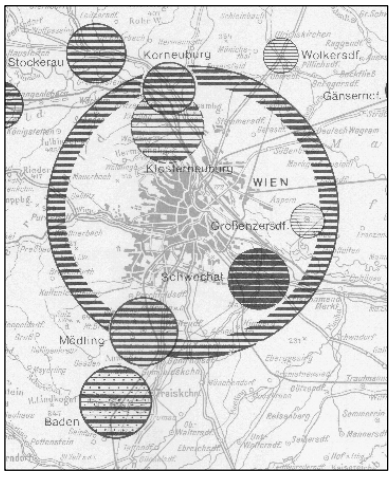

Figure 3.1: Vienna's sphere of influence (Fesl 1968, Abb. 19)

During the Habsburg hegemony, Vienna is considered the cultural, economical and political centre of gravity in the Empire and its urban system becomes increasingly important in Europe. Three concentric roads[8] were placed at the inner and outer defence zones, connected by radial roads towards the city centre (Reble 1999, Lichtenberger 2002). In this period, regarding its improved urban structure and infrastructure, Vienna joined in with the metropoles Paris and London. The consequences of this flourishing period became, amongst other things, visible in the urban morphology in the second half of the 19th century. With an increasing distance between living and working places, a first densification of local traffic occurred. With the gradual improvement of infrastructural connections alongside the southern, northern and western train axes, the urbanized area grew as well as the city's sphere of influence. The second stadium in the spatial and functional expansion of Vienna was the construction of the steam train railway, which placed independent peripheral districts in Vienna's sphere of influence like Mödling and Schwechat (figure 3.1). However, with the increase of motorized traffic and the perception of the railways being rather unprofitable[9], the road-system became more important in improving the accessibility of the suburban districts (Fesl 1968).

The relevance lies in the fact that urban expansion was transgressing the city boundaries towards the adjacent municipalities since 1908. Since then, the city's peri-urban area is partly situated in the neighbouring municipalities which are part of the federal state of Lower Austria. This distinct feature proved to be decisive in the meso developments of the rural-urban relationship through time (further elaborated in chapter 4). Another relevant aspect in researching the Viennese peri-urban area isn't particular a macro development, but should be taking into consideration before the contemplation of the meso developments. In the last decades of the Habsburg hegemony, urban policy focussed on urban renewal as well as the construction of new

[8] Alongside the polygonal *Ringstrasse*, which was situated at the location of the former town wall, governmental monumental buildings were constructed. The 76 metres wide *Gürtelstrasse* was placed at the location of the former *Gürtel der Linienwall* and between the *Gürtel-* and *Ringstrasse*, a polygonal road was formed to take up freight traffic. Parallel to the rectangular constructions in between the three concentric roads, radial connections were set up from the *Ringstrasse* to the suburban districts (Reble 1999, Lichtenberger 2002).

[9] See: Capuzzo (1998) about the transport system an urban pattern of Vienna in the period from 1865 to 1914.

extensive residential zones structuring the radial, organic growth: slums and decayed zones were replaced by bourgeois accommodations which could be seen as a form of 'gentrification'[10]. Since then, urban expansion throughout a vast part of the 20th century is characterized by the construction of large housing schemes at the expense of open spaces. According to Capuzzo (1998), 'reasons for this social city-planning supremacy of the city-centre can be found in an urban policy controlled by the Court, in an age-long custom of urban sociability and in the success of a municipal administration that fulfilled its project of increasing the city-wealth' (Capuzzo 1998, p.24). For instance, the large residential schemes outside the *Gründerzeitlichen* inner-city founded under the regime of the local socialist government during the inter-war and the post-war years shaped the suburban area of the city and structured the urban expansion (see chapter 4).

The changing urban morphology of Vienna in the post-war years is mainly characterized by an interplay of political, demographic and economic developments occurring on the macro level and will be further elaborated in the following subsections.

3.3 Political & Economic Trends

In the Habsburg context, Vienna was the financial, organizational and trade centre of the heterogeneous Empire: its influence was noticeable throughout every relevant corner of the Habsburg Empire (Becker & Novy 1999, Lichtenberger 2002). With the adoption of 'new industries' such as mechanical engineering, which was booming due to construction of the railways, and a prominent position of manufacturing, Vienna went in front of the Empire and was economically flourishing (Becker & Novy 1999, Reble 1999). The economy in the peri-urban area within the city boundaries is characterized by first sector activities in the rural surroundings of the city. Third sector activities mainly arose within the city alongside the main infrastructural axes. In between these axes at the urban fringe, newly founded industries as well as manufacturing played a prominent role. Mentioned before, with urban expansion transgressing the city borders, surrounding municipalities and their activities are considered peri-urban. First sector and second sector activities can be recognized in these adjacent municipalities. Tools, machinery, textile, chemicals, wood and nutritional products that shape the vast part of their industrial activities. For the surrounding municipalities, the city of Vienna remained a focal point of interest, functioning as an area of distribution and a central labour market.

After the collapse of the Habsburg Empire, the First Austrian Republic had to cope with the consequences of war: famine, inflation, coal shortage, unemployment and the deterioration of the banking sector (Lichtenberger 2002). The deficit of demand due to instable incomes and an infant social security system strengthened the degree of crisis, which also occurred in the city of Vienna (Becker & Novy 1999). Vienna lost its central economical position with the collapse of the Empire, the banking sector was deteriorating, the nobility impoverished and civil servants lost

[10] Urban expansion followed the principle of a central-peripheral direction of the upgrading of residences. The upper class resided within the *Ringstrassenzone* and in between *Ringstrassenzone* and the *Gürtelstrasse*, the former domain of manufacturers and labourers, middle class residences were built. In the suburban area outside the *Gürtel*, settlements for labourers were constructed (Lichtenberger 2002).

their revenues (Lichtenberger 2002). The state of crisis enabled the Social Democratic Workers Party (SPÖ) to take over the city's government entailing a shift of local power. Unemployment and housing shortage were the most important issues on the political agenda of the newly elected government (Lichtenberger 2002). Therefore, to enlighten the state of crisis, the Viennese local government concentrated on improving the living conditions: the city's extensive investments in housing supported the local economy in the 1920s. Despite its efforts, the Social Democratic government wasn't able to avert the consequences of the crises: in the early 1930s half of the Viennese workers were unemployed (Lichtenberger 2002).

The rather short rebuilding phase of Austria after World War II was mainly due to a rapid resumption of its industrial capacity which originated from the German fascism period (Faßmann 2002). During the German occupation (1938 – 1945) Austria was integrated into the German state politically and the Austrian economy was directly being integrated into German war industry. Consequently, the national industrial structure significantly altered due to the establishment of new heavy industries in the country, especially in Upper Austria. This heritage of the German fascism period played a significant role in the geographical diversification of industrial centres in Austria in the post-war years. As German war planners were orientated towards the west, the industrial centre of gravity shifted from the east towards the west (Becker & Novy 1999, Lichtenberger 2002). During the period of occupation by the USSR, the previous transfer of the industrial centre of gravity from Vienna and the Viennese Basin towards the western part of the Republic remained to strengthen the industries in the western occupation zone (Lichtenberger 2002). Lichtenberger describes Austria as a *gedrehter Staat* aiming at the aforementioned shift of secondary labour, due to the durable westward shift of the industry, parallel to the shift of capital the other way around (Lichtenberger 1989 & 2002). This relocation and outsourcing to Lower Austria caused a negative trend in the number of employment in the secondary sector from the early 1960s on strengthening the tertiarisation of the economy, which continued uninterruptedly (Kampschulte 2006).

With the rise of the tertiary sector, the function of the surrounding municipalities within the peri-urban area changed significantly. Due to the fact that a common policy for metropolitan area didn't exist, Vienna and its surrounding municipalities were entangled in a mutual competition concerning economic growth by attracting investments and resident population (EC 2000). With the increase of tertiary activities in the surrounding municipalities, for instance the municipality of Vösendorf situated in the district of Mödling developed the shopping mall *Shopping City Süd* (further elaborated in subsection 5.2), Vienna's central economic position declined to the advantage of the adjacent central places.

With the singing of the state treaty in 1955, the USSR occupation period came to an end and the Second Republic of Austria was founded functioning as a neutral nation state within a divided Europe (Faßmann 2002). In the 1960s, Vienna was able to capitalize on the Austrian neutral status by attracting the international atom agency in 1963 and the OPEC in 1965, which

laid the foundations for the development of international quaternary[11] activity in the city. A distinct example is the under the leadership of *Bundeskanzler* Kreisky construction of the extensive project UNO-City which was finished 1979 and could be seen as a symbolic Western landmark in a divided Europe (Further elaborated in subsection 5.3 *DONAU-City*).

In an international context, the globalization of expanding financial markets was supported by liberalisation of capital flows and deregulation of the financial market in the early 1980s. Therefore, Austria and subsequently Vienna had to open up to the international market due to a growing budget deficit (Novy & Becker 1999, Kampschulte 2006). In an international context Vienna was actually lagging behind: it wasn't till 1983, when the SPÖ (Socialist Workers Party) lost its majority, when the government tried to adapt in a rather hesitant manner to a globalizing economy[12] (Novy & Becker 1999, Faßmann 2002). *Die Wende* in 1989 could be seen as a radical transition or tipping point for Austria and Vienna on the macro level: new chances and threats emerged regarding Austria's and especially Vienna's new position within Europe. In this context Lichtenberger defines Austria as *der zweimal gedrehte Staat:* the eastern Austrian region and especially Vienna, once more at the centre of Europe, were growing again (Lichtenberger 2002, Kampschulte 2006). After the opening of the borders, the internationalisation of the property market took off and a rising demand resulted in a high increase in construction at the city's fringe, especially in the office sector. Large schemes were realised or are still being realised in the form of Public-Private Partnerships between the municipal executive and international financial bodies that consider Vienna as a 'gateway to the east' (Hamedinger 2004, Kampschulte 2006).

Since globalization in general changes the functions and significance of cities and regions, the metropolitan area of Vienna, amongst other European metropoles, shows no exception: national urban hierarchy and inter-regional competition is respectively being substituted by international and European competition. A very practical example within the metropolitan area of Vienna was the rise of multiple initiatives for inter-municipal cooperation to unite the diverging policies and differing values. Since the entry of Austria in the European Union (1995), Vienna experiences an increasing competition of other European metropoles entailing a shift in urban planning policy from city-planning towards 'citymarketing'. This became clearly visible in the development of the office sector which changed the city-landscape by the establishment of renowned architectural high-rise office buildings in the urban fringe. Considering economic trends for the future, the recent enlargement of the European Union with the Eastern European nation states (2004) seems relevant. Due to the nearness of Budapest and Prague, Vienna will increasingly encounter more competition (Kampschulte 2006). 'The future role of

[11] The quaternary sector of the economy is an additional sector in the three-sector hypothesis of industrial evolution. It mainly comprises intellectual services, for instance consultation, education, research, information generation and sharing. These activities are sometimes considered as tertiary sector activities, however many argue that intellectual services are distinct enough to vouch for a separate sector (Beniger 1986).

[12] In 1950s, economical strategies were to a large extent regulated at the central level compared to the inter-war years and before, this period of post-fascist Fordism was considered to be a flourishing one. When this period came to an end, due to saturation of the market and the oil shock in 1973, the policy of 'Austrokeynesia' (usage of governmental funding to retain low unemployment rates) was top-down implemented on the national level resulting in a rather stable unemployment rate till the 1980s (Becker & Novy 2002, Faßmann 2002, Kampschulte 2006).

Vienna within the dynamic European urban system will depend on the distribution of functional duties between metropolises. Specialization and clear urban profile in today's global world are important prerequisites for a favourable ranking in the urban network and existing strengths and weaknesses are determining factors for strategic placement.' (Kampschulte 2006, p. 238)

3.4 Demographics

Nowadays, with approximately 1.68 million inhabitants within the city and 2 million within the Metropolitan Area, Vienna is Austria's densest populated city. In European context, Vienna is the tenth largest city in Europe with a growing population rate. However, this hasn't always been the case regarding its history illustrated in figure 3.2. The period between the end of the 19th century till the end of World War I, when the strongest urban growth was recorded, could be seen as a flourishing period (Capuzzo 1998). With annual growth rates of 3%, the metropolitan area grew from 440 000 inhabitants in 1840 to over 2 million in 1910, unified under one municipal administration (Lichtenberger 2002). This growth was mainly caused by immigrants from areas from the Habsburg Empire who acted upon Vienna's flourishing economy (Steinocher et al. 1999). Looking at the population rate of the inner-city, which was decreasing after 1880 (table 3.1), we assume that the suburban area was growing. With the *Ausgleich* in 1867 (the Hungarian half of the Empire got a certain degree of autonomy) the disintegration of the Habsburg Empire was set in. It wasn't until the signing of the peace treaty of Saint-German in 1919 when Habsburg Empire completely fell apart in different nation states.

Table 3.1:
Inner-city population rate
(source: Fesl 1968, p.51)

1830	54.231
1853	54.249
1869	63.901
1880	69.694
1900	58.503

With the constitution of 1920, the first Republic of Austria was founded which could be seen as an political and economical transition as well as a demographic one: the high rate of immigrants, once attracted by the city's flourishing economy declined resulting in a strongly decreasing population rate (Lichtenberger 2002). Moreover, urban flight occurred due to the worsening living conditions in the inner-city: a first flow of urban sprawl started in the interwar-years and continued after World War II (Fesl 1968, Cramer 1999, Becker & Novy 1999).

Due to infection diseases and post-war suffering, the first post-war years (after World War II) were characterized by high mortality rates throughout Austria. Despite these high mortality rates, the Austrian as well as the Viennese population was just slightly deceasing which was mainly the result of the baby boom setting in and the taking up of refugees from Germany and the eastern part of Europe (Faßmann 2002). The population stagnation in the following decades was mainly the result of the erection of the Iron Curtain: the population shift towards the west caused negative domestic migration figures and a changing population balance.

Moreover, the onset of suburbanization in the 1960s was a relevant factor in the stagnation of the Viennese population rate. Although the stable increasing number of guest labourers compensated the reducing domestic migration figures until the mid-70s, the increasing

suburbanization in the following years intensified population decline. From 1971 on the population rate of Vienna dropped significantly and reached its lowest point in 1986 with 1.504.395 inhabitants. Moreover, the percentage of the Austrian population living in Vienna dropped from 23,1 % in 1961 to 20,3 % in 1981. During this period, the metropolitan area underwent a similar trend, thus the migration flow was affecting a greater area than the city of Vienna alone (Kampschulte 2006). The phases of dis- and suburbanization caused by change in population, economic activity and employment, which could also be observed in other European metropolitan regions, were of significant relevance for the city-centre of Vienna (Kampschulte 2006, Kaufmann 2007). The first district (city-centre) lost approximately 52% of its population in the period between 1951 and 1991 as the districts in the south and east registered a population growth from 1951 on. After the fall of the Iron Curtain, the negative population balance was put to an end by the inflow of foreigners: between 1987 and 1992 the number of foreigners had more than doubled. By 1987 the positive migration balance compensated the negative birth rate, however, tangible population growth was registered after 1989. Whereas the number of foreigners was officially limited in 1996, only a moderate population increase is expected for the future. The surrounding area of Vienna however, which has been growing since the 1950s, is expected to experience high population rates until 2021 as a result of an ongoing suburbanization process (Kampschulte 2006). Due to this suburbanization trend, which particularly took off in the 1970, the Viennese population rate stagnated and resulted, contrary to expectations, in an increase in residential area between 1971 and 2001. A changing life-style, resulting in the construction of single family houses, smaller household sizes and an associated increase in space required, led to a greater consumption of land per capita (Tötzer & Gigler 2008). Future issues such as the dropping fertility rates and an ageing society with an increasing life expectancy should be taken into consideration regarding Vienna's population growth. Besides, urban sprawl can continue freely in the metropolitan due to a lacking legislative base. However, the ongoing population shift towards the suburban area and above all the pressure on the rural area deserves our undivided attention in researching the peri-urban land-use relationships.

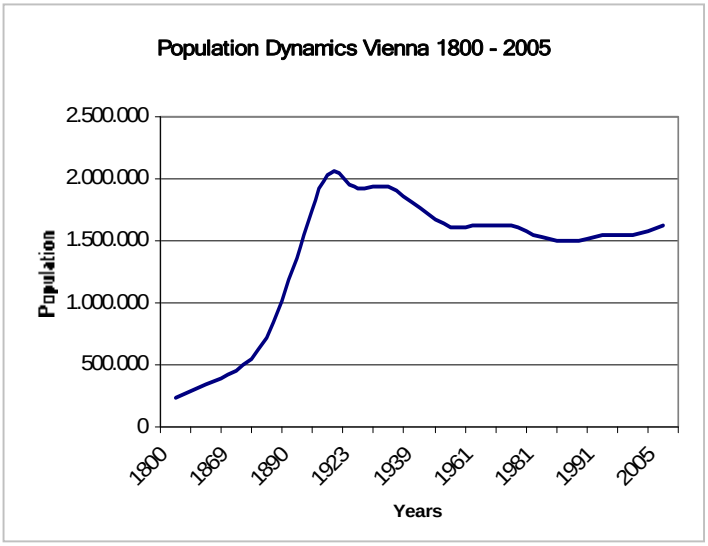

Figure 3.2: Trends in the number of Viennese urban population (www.wien.gv.at)

3.5 Austrian Spatial Planning Framework

The deterioration of the rural area as a consequence of the expansion of urban functions is a feature which can be observed throughout the European continent: the Austrian Republic and the metropolitan area of Vienna show no exception. Though a planning system gives authorities the capacity to control urban dynamics, the Federal Republic has a minimal regional development competence in Austria: the authority of this policy field lies at the provincial level. Significant in our case, the rural-urban development cannot directly be influenced by the central government. The following subsection will give a short overview of the Austrian planning system which, in spite of a high degree of decentralization, provides the context for the organization of planning in Vienna. Distinct features and issues specific for Vienna and its peri-urban area, which are considered meso developments, will be further elaborated in subsection 4.2.

The federation of Austria consists of nine states and has approximately 2300 municipalities. Political representation and policy-making takes place at three institutional levels: the Federal Government (*Bund*), the federal provinces (*Länder*) and the municipalities (*Gemeinde*). This also applies to spatial planning: it is a national task performed in coordination between the three institutional layers together. This, however, is not explicitly regulated in the constitution of 1929: the legal situation is solely based on the distribution of powers laid down by the Constitutional Court (*Verfassungsgerichtshof*) in 1954. According to the distribution of powers by the Court, comprehensive spatial planning in legislation and execution is the main responsibility of the *Länder,* this is also the level at which spatial planning laws (*Raumordnungsgesetze*) are passed. Further, the nine *Länder* implement state developments plans, sectoral state plans and regional development plans in varying numbers and natures. A significant restriction is the fact that the central government can intervene and express powers regarding relevant sectoral measures and planning activities with territorial reference (e.g. railways, the supra-regional road network, forestry and laws related to water). The coordination of these measures within the federal government is rather poor, regarding its weak statutory basis: a federal law on *Raumordnung* (spatial planning) doesn't exist. Local spatial planning, mentioned in the constitution since 1962, is placed under the autonomous competence of the municipalities. Municipalities draw up zoning plans (*Flächenwidmungspläne*) to control the permissible land use. In some of the *Länder*, municipalities have to draft local development schemes before a zoning plan is drawn up, containing guidelines for the future development of the municipality's territory. Finally, spatial planning of the municipality on the local level is laid down in the building regulation plan (*Bebauungsplan*), determining the use of building land. The *Länder* are the supervisors of their municipalities according to the criterion of conformity with spatial planning laws and spatial planning at the supra-local level of the state (EC 2000).

Conclusively, throughout the 20th century up till now, the Austrian planning system remained rather steady and was characterized by a minimal regional development competence of the federal government. The relevance lies mainly in the fact that, despite a stable federal planning context, the high degree of decentralization became rather problematic for the metropolitan area as a whole. Local spatial planning is a responsibility of the municipalities, which

more than once means that municipalities are restrained in for instance physical growth by a different planning policy of the adjacent municipalities. In this context, a rather fragmented landscape within the metropolitan area could evolve, since every municipality is following its own path regarding spatial development (further elaborated in subsection 4.2).

3.6 Conclusion

By considering macro developments, regarding urban history and morphology, the national planning framework and political, economic and demographic trends, we tried to shape the context for rural-urban relationships to develop and evolve on the meso and micro level. The fall of the Iron Curtain itself can be regarded a tipping point after which Austria as well as its capital encountered several changes setting certain conditions for the contemporary rural-urban relationship. After the fall of the Iron Curtain the Viennese population rate was increasing once more and in a global context, urban planning focused on citymarketing: the city-landscape changed by the establishment of renowned architectural high-rise office buildings in the urban fringe. The earlier occurring trend of changing lifestyles, led to a greater consumption of land per capita and subsequently suburban growth since the 1970s. Relevant is to acknowledge the fact that such macro influences have a tangible impact on different levels and therefore often lead to the occurrence of developments on the meso and micro level. Moreover, the awareness of these occurring macro trends gives us a starting point in our further research of the changing rural-urban relationship of Vienna's peri-urban area. In other words: reasoning from a multilayered perspective to capture the urban fringe and the rural-urban relationship in its complexity, we acknowledge the fact that these layers (macro, meso and micro level) are interconnected. In the next chapter we will clarify how these contextual aspects have been of an influence on the rural-urban relationship within the peri-urban area of Vienna as a whole (meso level).

4 Meso Developments of Vienna's Peri-urban Area

4.1 Introduction

Shedding light on the multi-layered environment of the urban fringe, the following chapter will mainly concentrate on the meso developments influencing the urban fringe of Vienna, structured by the institutional, organizational and material layer. Through the consideration of meso developments we try to identify certain occurrences which have a more direct impact on the urban fringe. These occurrences could entail transitions in peri-urban land-use relationships, triggered by macro developments or by matters specific for this region. After an overview of the urban planning system, we will give an overview of the occurred transitions in the past by analyzing the diversifying push- and pull-factors with corresponding land uses within the metropolitan area of Vienna in subsection 3.2. Following our posed theory, where different phases shade off into one another[13], we will consider certain developments per time period. The last subsection will give a short overview of the different push and pull factors recognized during distinguished periods in time.

4.2 Urban Planning System

Mentioned before, the Austrian Republic has a limited regional development competence and cannot directly influence the rural-urban development. However, the state does provide a context or a framework for regional planning policy and is therefore considered on the macro scale. The regional political-administrative system can, due to a high degree of decentralization, influence the rural-urban relationship and therefore also urban and regional dynamics and the behaviour of developers and government (Hudalah & De Roo 2007). This subsection will give an overview of the Viennese planning system, its characteristics and certain contextual aspects which prove to be rather significant for the Viennese peri-urban area.

During the territorial reorganization[14] of 1922, Vienna became a *Land*[15] (federal state) and obtained a degree of legal and fiscal autonomy (Becker & Novy 1999). Mentioned before, since Vienna is a federal state as well as a municipality divided in 23 districts after 1922, it's endowed with a rather special position within the administrative structure (Hamedinger 2004, Kaufmann 2007). The implementation of spatial planning lies at the level of the municipalities, which operate

[13] Following figure 1.1: predevelopment phase (1), take-off phase (2), acceleration phase (3), stabilization phase (3), (Hudalah & De Roo 2007)

[14] In the inter-war years, the federal states, which embodied different socio-economic conditions stepped forward and demanded a capable regional autonomy. However, the central bureaucracies of the former Empire prevailed which resulted in a rather gentle form of federalism (Becker & Novy 1999).

[15] The provinces or *Länder* are historical entities: six Austro-Hungarian provinces (Vienna included) were more or less identical to current provinces (they account for 60% of the current Austrian territory) and found themselves in a rather paradoxal situation as an historical entity within a newly founded Republic (Novy & Becker 1999, Lichtenberger 2002).

autonomously in this policy field. The regional development plan (instrument of federal states) and sectoral planning on the central and provincial level restrict the municipal autonomy to a certain extent. Land-use and building regulation plans however, are solely in the hands of the municipalities. According to an interviewee, Andreas Hacker (2008), one of the two regional managers of *Stadt-Umland-Management* of Vienna and Lower Austria[16], this entails rather grave consequences for spatial planning (among other policy fields) in the metropolitan area of Vienna: 'Vienna is a province, but also a municipality divided in city districts (*Bezirke*) surrounded by a lot of different municipalities, which creates a difficult situation for spatial planning: for instance you always have to look for the same level of institutions'. This means that municipalities are entitled to counter-act on certain decision-making concerning their jurisdiction, which makes spatial planning for the metropolitan area a rather fragmented matter. An elected mayor, as head of the municipal spatial planning department, connects the spatial planning activities on the provincial level to building regulations per municipality.

The range of spatial planning instruments available to the *Länder* extending beyond the municipal building legislation is rather poor, resulting in an extensive autonomy at the municipal level. The main difficulty is the fact that the diverging policies of the surrounding municipalities are aimed at the mutual competition concerning economic growth by attracting investments and resident population (EC 2000). For instance Vösendorf, an adjacent municipality to the south of Vienna situated in the district of Mödling, developed the shopping mall *Shopping City Süd*, causing commercial blight for the municipality of Vienna (*Shopping City-Süd* will be further elaborated in subsection 5.2). Another example is the municipality of Perchtoldsdorf, also situated in the district of Mödling, steering its own course while pursuing restrictive land policy for its vineries and therefore causing difficulties for the metropolitan area by restricting urban expansion of Vienna. Moreover, the phenomenon of an 'elected mayor' is strengthening the unwillingness to compromise and enhancing inter-municipal cooperation, since upcoming elections are a relevant underlying interest. A lacking communication and disintegrated planning strategies restricted and still is restricting the development of the metropolitan area of Vienna and its peri-urban land-use relationships. Nevertheless, a growing awareness of the importance of a common planning approach for the metropolitan area already started off with the founding of the *Planungsgemeinschaft Ost* in the 1970s, which is a communication platform with planners from Vienna, Lower Austria and Burgenland.

From an organizational perspective, the political-administrative system is based on hierarchal principles and top-down decision-making which seemed to function properly throughout the 1960s[17] and was 'maintained by as a political strategy by the Social Democrats' (Hamedinger 2004, p.7). The Social-Democratic party has been the main actor in local Viennese government ever since the 1920s and was, with top-down decision-making in spatial planning policy (amongst

[16] The *Stadt-Umland-Management* is founded by Vienna and Lower Austria to dissolve the partition of the two federal states in order to improve regional cooperation for the city region of Vienna *(www.stadt-umland.at)*.

[17] 'Since the end of the 1970s this model has been challenged by problems especially arising in the context of an increasing financial crisis, of urban regeneration, urban sprawl and sustainable urban development' (Hamedinger 2004, p.7).

other policy fields), aiming at a 'minimisation of socio-spatial polarisation within the city' (Hamedinger 2004, p. 5). Moreover, planning problems have long been interpreted as technical problems (for instance, urban regeneration solely through improving the physical stock of residences); policy actors found that these issues could be solved by experts mainly recruited from the Technical University of Vienna. Conventional planning instruments, for instance the *Stadtentwicklungs Plan* (STEP, City Development Plan), list a broad variety of objectives without taking the procedural mechanism into account (Hamedinger 2004). Hamedinger (2004) states that one main characteristic of the city-administration as a result of 'the specific Austrian form of corporatism[18]' is its tendency towards a minor coordination and communication among the departments. Moreover, the Austrian cultural aspect of 'conflict avoidance' results in 'a consensus oriented political culture, in which conflict are avoided or suppressed' (Hamedinger 2004, p.6). In this particular context, conflicts between interests of different social groups (e.g. planning) were not dealt with productively. Moreover, the number of actors involved in policy stays rather limited; the main actors are part of the political administrative system (Hamedinger 2004).

To summarize, the high degree of decentralization and municipal autonomy tosses up certain difficulties for planning in the metropolitan area of Vienna and sets specific conditions for rural-urban development. Since Vienna is dependent on its surrounding municipalities when it comes to spatial development, improved communication, integration of planning strategies or even a governmental reshaping within the metropolitan area can offer a solution.

4.3 Dynamics in the Urban Fringe of Vienna

4.3.1 Regulated Stability (1867-1917)

To offer a starting point in the development of the rural-urban relation in the peri-urban area of Vienna, we contemplate the urban dynamics in the last phase of the Habsburg Empire. The main driver for urban growth was a strongly increasing population rate. The working class coming from all over the Habsburg Empire, attracted by the flourishing manufacturing sector, found themselves in rather questionable living conditions. Due to the cheaper and healthier living conditions in the surroundings of Vienna an ongoing flow, of workers in the first instance, from the inner-city towards the fringe set in from then (Fesl 1968, Reble 1999). A significant increase in residential building, in the period from 1854 and 1917 460.000 residences were constructed, comprised urban renewal in the inner-city as well as newly constructed residences in the open space (Lichtenberger 2002). Consequently, the urban settlements were more and more transgressing its original boundaries structuring the radial urban growth (Fesl 1968).

The compact radial urban growth was secured in the urban land use plan of 1893 that imprinted the functional layout through a focus on central-peripheral developments by levelling construction heights and the designation of certain zones for industrial development, consistent

[18] This form is based on 'a network consisting of the state and employees (union, chamber of work), as well as the employers' associations (chamber of commerce, Federation of Austrian Industry)' (Hamedinger 2004, p. 6).

with developments in other central European cities like Berlin and Budapest (Capuzzo 1998, Lichtenberger 2002). In accordance with the urban land use plan, third sector activities arose alongside the main infrastructural axes and in between these axes second sector activities were situated. That leaves the first sector economy activities, which stayed cut down to the surrounding rural area of Vienna functioning as a production area for the city.

A distinct urban feature is formed by the protected green zones and national parks that have shaped the urban development in the peripheral area within the city boundaries through time. From 1905 on, the *Wiener Grüngurtel* (Viennese Greenbelt) became a protected area: 4400 ha forest and grass-land within the city boundaries had to remain uncultivated, mainly to restrict the uninterrupted construction of residential residences (Lichtenberger 2002). Besides the fact that the protected area restricted the urban growth to a certain extent, it also originates from an age-long tradition of providing the urban population with an extensive green zone in order to improve the urban living conditions[19].

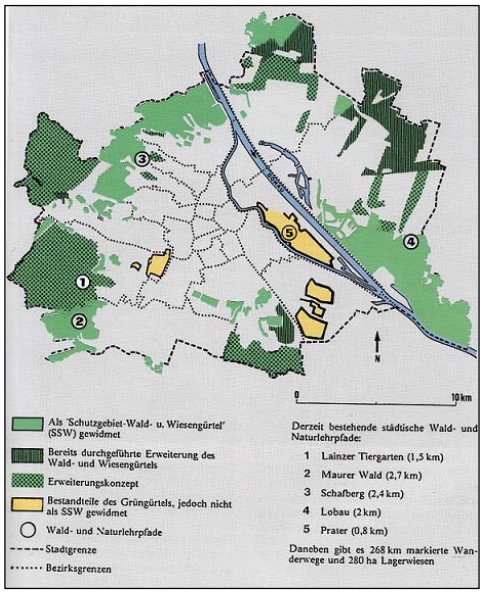

Figure 4.1: The Viennese greenbelt (Lichtenberger 2002, p. 201)

Following the above mentioned urban dynamics, we can abstract a clear starting point in researching the rural-urban developments in the peri-urban area of Vienna. First of all, we can consider this period as a stable phase, mainly based on local policy which structured the urban development at that time. The rural-urban relationship is to a certain extent based on a functional distinction between rural and urban functions considering the fact that first sector activities remained in the surrounding area and the urban area remained the cultural, economical and social centre of gravity. With the exception of the protective policy of the Viennese greenbelt, we can regard the distinction of functions as a rural-urban divide. The occurring developments in the urban fringe due to urban expansion didn't change the existing balance in the rural-urban relationship. An organic, radial urban growth, secured by the urban land-use plan looked after a balanced rural-urban relationship by limiting urban expansion at the expense of forests and green zones. The rural-urban relationship remained rather stable till the collapse of the Habsburg Empire, when the aspects holding stability slightly diminish. An overview of this period is given in table 4.1.

[19] In the second half of the 18th century on, open green spaces were placed outside the city wall: with the opening of the *Prater* in 1756 (2nd district) and the *Augarten* in 1775 (20th district) the emperor set a standard of dismantling green spaces as a privilege for nobility. Approximately 100 years later, the same concept, by using the peripheral area as green space, was applied for the meanwhile expanded city by Lueger, the mayor of Vienna at that time (Lichtenberger 2002).

Table 4.1: Overview of the Habsburg Empire (1867 – 1918)

Rural-urban relation	Organic urban expansion.
	Stable and balanced.
Urban	Characterized by 2nd sector economy activities.
Rural	Characterized by 1st sector economy activities in order to supply the urban area.

4.3.2 Necessity Knows no Law: Arising Dynamics (± 1918 – 1938)

The former stability starts to fade under the influence of an interplay between mainly macro and meso developments. Considering the macro developments, the inter-war years in Austria as well as in Vienna are characterized by a state of crisis commonly felt by the urban population. From an organizational point of view we could say that the local government fulfilled a leading role in local planning policy. The newly elected socialist government followed a rather technical, top down planning approach by trying to enlighten the state of crisis conditions by increasing the physical stock of residences (Hamedinger 2004). Mentioned before, with unemployment and housing shortage as most important issues on the political agenda, 63.000 residences were constructed in the period from 1923 till 1934 under communal régie, structuring the radial, organic urban growth (figure 4.2) (Lichtenberger 2002).

Figure 4.2: The international renowned Karl-Marx-Hof was constructed at the expense of market gardening. The English conservative weekly journal The Spectator called the city's communal residential building a 'miracle'. The city provided accommodation for approximately 250 000 inhabitants. Similar to the Ringstrasse, Stephansdom, Burg and Riesenrad, the over 300 communal residential zones, with the Karl-Marx-Hof as the largest, put a stamp on the contemporary city view. Since the period of the First Republic, the Karl-Marx-Hof was seen as an example of righteous living, symbolizing the socialist reformation at that time (Cramer 1999).

Despite of a developing social overhead[20], the local government couldn't avert the consequences of an institutional eroded base they encountered right after World War I. This resulted, amongst other things, in a rather chaotic urbanization. Due to the crisis felt by the urban population, they fled from the rather unbearable living conditions within the inner-city and moved to the fringe of Vienna to survive. A substantial part of the urban fringe was built with temporary accommodations at the expense of arable and grass-lands. Within the urban peripheral area as well outside the city borders so-called 'chaotic settlements' arose in the inter-war period, which were the first signs of urban sprawl (Lichtenberger 2002). These settlements even reached to the protected *Wiener Grüngurtel*, which was temporarily set aside to make concessions to the housing shortage: necessity knows no law.

[20] In the inter-war years, the socialist government also took over the responsibility of the provision of services to its population like school reform and social policy (Becker & Novy 1999, Lichtenberger 2002).

In spite of the efforts of pursuing stability, the dynamics increased in the development of the rural-urban relationship as a result of to a changing context as well as autonomous processes. The consequences of the post-war crisis shape the context for certain push factors (e.g. state of crisis felt by the inhabitants and a lacking institutional basis) to strengthen developments in the Viennese rural-urban relationship. However, the role of the rural surroundings remained the same in providing the resources to the city, but finds itself increasingly under pressure due to urban expansion as well as the first occurrences of urban sprawl. An overview of this period is given in table 4.2.

Table 4.2: Overview of the interwar years (± 1918 – 1938)

Rural-urban relation	Urban expansion transgressed the city boundaries towards the adjacent municipalities.
	Top-down urban planning couldn't avert consequences of World War I.
	Slowly out of balance.
Urban	Characterized by 2nd sector economy activities.
Rural	1st Sector activities encountered pressure from the Viennese urban expansion.
Peri-urban	Appearance of first signs of urban sprawl: rise of 'chaotic settlements'.

4.3.3 Post-occupation Period: Dynamics During the 1950s

Due to developments on the macro scale, especially the fact that the immediate post-war years were mainly in token of rebuilding (central and regional policy focussed on regaining self-sufficiency and a quick resumption of industrial strategies), the imbalance could develop further. The occurrence of changes in the rural surroundings of Vienna seems a continuance of the inter-war developments. The main difference with the inter-war years is that however, is the fact that similar dynamics became more tangible: the ongoing and even increasing suburbanization and urban sprawl strengthened the development in the rural-urban relationship. The interplay of contextual changing structures on the macro level and the local policy form the basis of increasing dynamics in the peri-urban area of Vienna. With the withdrawal of the USSR occupation powers from Austria after 1955 and subsequently the erection of the Iron Curtain, the urban population was decreasing. Mentioned before, this was mainly due to an out migration towards the western part of the republic as well as the increasing degree of suburbanization: after 1951, the city centre lost approximately 52% of its population to the suburban districts as well as the municipalities outside the Viennese jurisdiction.

A relevant institutional feature on the meso level is that, in spite of the efforts of several institutions and individuals, Vienna and its surrounding municipalities didn't succeed to create a legislative basis for the metropolitan area. The absence of consensus between the municipalities on a metropolitan land-use plan gave urban sprawl the opportunity to proceed and was solely structured by the infrastructural transport system. Moreover, the distinct political and economic context at that time strengthened the continuance of a chaotic expanding urban area: large construction companies to meet the population's need of single family residences were lacking.

This in combination with the paradigm of a protective government regarding the housing policy[21] entailed the 'holding back' of market forces, enabling small-scale initiatives to come into existence. Therefore, with the exception of the extensive socialist housing construction schemes within the city borders, the population's demand of 'living in the suburbs' couldn't be canalized and lead to alternative solutions, for instance founding satellite towns to intercept the population surplus (Lichtenberger 2002).

Mentioned before, the developments in the peri-urban area as well as in the rural-urban relationship seem a continuance of the inter-war years. However, with an increasing suburbanization and urban sprawl in combination with a lacking metropolitan legislative base to pursue stability, the demarcation between urban and rural functions starts to diminish. Especially the aforementioned local policy features can be regarded as a dominant factor in the increasing dynamics to a certain extent, and therefore the first signs of a possible rural-urban transition become visible. An overview of this period is given in table 4.3.

Table 4.3: Overview of the post-war years (±1945 – 1955)

Rural-urban relation	Urban expansion structured by the infrastructural transport system.
	Lacking legislative base for the metropolitan area.
	Out of balance.
Urban	First signs of a deindustrialization (3rd sector economy activities).
Rural	1st and 2nd sector activities (see also subsection 3.3 *Political & Economic Trends*).
Peri-urban	Increasing degree of suburbanization and urban sprawl.

4.3.4 Towards the Point of No Return Since the 1960s

After a rather tumultuous time, respectively World War I, the influence of German fascism and World War II and USSR occupation, the rural-urban relationship seemed open for change. On all levels, macro, meso as well as micro, material, organizational and institutional changes can be recognized in the period after 1960. From a transition perspective, a fenced off 'tipping point' cannot be pointed out clearly, since this distinct period as a whole represents a point of no return towards the former level of stability. It is this period that the rural-urban relationship changed fundamentally, due to an interplay of changing conditions on all levels. From a theoretical point of view, this period can be characterized as a chaotic period of the transition process.

In subsection 3.3 we mentioned the diversification of industrial centres in Austria in the post-war years. During the USSR occupation period, the transfer set in by German fascism became central policy to strengthen the industries in the Western occupation zone. A relevant organizational change was the rationalization and outsourcing of industrial activities to Lower Austria, resulting in a negative trend of secondary labour parallel to an increase of employment in

[21] Residential building itself was for a long period considered as a social precautionary measure, which should be executed by the local government (Cramer 1999). This paradigm can be traced back to the Viennese age-long tradition of urban sociability. A distinct example can ne found in the inter-war years when the physical stock of residences increased significantly under the local regime of the socialists.

the tertiary sector (Lichtenberger 2002, Kampschulte 2006). Previously established enterprises in the industrial area located in the southern and western fringes of the city were shut down or consolidated. Growing industries, for instance services, research and development industries, were mainly located in the city. The manufacturing and trade sector were shrinking economies within the Viennese city boundaries. Manufacturing companies were moving from the city to its surroundings though remained linked to the city, whereas many producer services[22], connected to these industries were located there (Kaufmann 2005, Kampschulte 2006).

Retail trade followed another path of development: a de-centralization trend of retail trade became visible with the erection of shopping malls in the adjacent municipalities outside the city boundaries of Vienna (figure 4.3) (Lichtenberger 2002, Kaufmann 2005, Kampschulte 2006). Economic conditions of a relatively flourishing post-war economy (see also subsection 3.3) and later on the adoption of the Keynesian strategy of deficit spending[23] in the context of the worldwide economic recession during the 1970s, cleared the path for commercial retail initiatives to come into existence. Moreover, once again the lacking metropolitan legislative base became another decisive element in the development. Under the relatively stable economy with a growing tertiary sector and the inter-municipal competition, retail trade was phased out to the surrounding municipalities of Vienna. Lichtenberger (2002) states that by the suburbanization of retail trade, the city lost a significant part of the purchasing power entailing the washing out of approximately 8.000 traditional retail traders during the 1960s and 1970s. One of the causes of this 'commercial blight' is *Shopping City-Süd*, which was founded in 1976 in the adjacent municipality of Vösendorf (further elaborated in subsection 5.2).

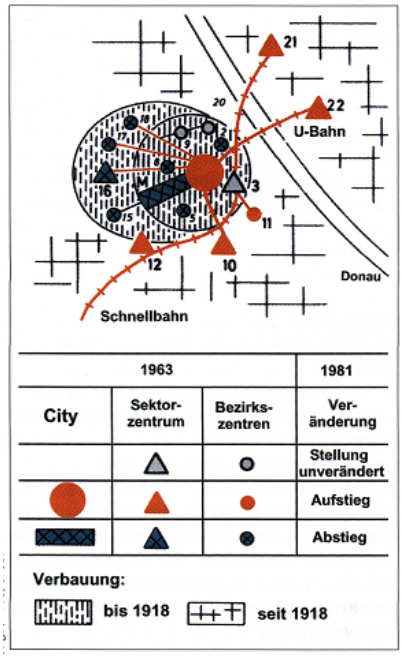

Figure 4.3: 'Commercial blight' in the metropolitan area of Vienna: the erection of shopping malls in the adjacent municipalities outside the city boundaries of Vienna (source: Lichtenberger 2002, p.300).

On the institutional level, control of the local state by the implementation of 'Austrokeynesia' amongst other things 'enabled the Social-Democrats to establish strong clientelist relationships, e.g. by allocating public housing flats' (Hamedinger 2004, p.5). Till 1980, 180.000 residences were built in the open space in the southern and eastern areas. This was the result of the process of settlement growth in the suburban region as a consequence of migration from the core city which distinctly took off in the 1970s alongside the main axes. A relevant trigger seems the common ideology of living in the suburban areas. This meant that the reason for 'moving to the suburbs', which was a necessity for

[22] Company's operative in producer services can be considered as the side-branches of industrial and manufacturing companies which are focused on innovation and other business services (Kaufmann 2005).

[23] In short, the Keynesian strategy of deficit spending also named 'austrokeynesia' came down to 'the extensive use of public funding to maintain a high level of employment and low unemployment rates' (Kampschulte 2006, p. 233).

survival in the inter-war years and the immediate post-war years due to the poor living conditions within the city boundaries, seemed more and more based on certain social-democratic ideologies. These ideologies comprised for instance living conditions based on social-democratic principles (e.g. the desire of social overhead[24] and additional aspects to private space, for instance gardens or second homes) and were dispersed parallel to urbanization beyond the city's borders in the rural area from the 1960s on. Moreover, the degree of suburbanization was strengthened by the tertiarisation of the economy, since these functions were more and more displacing the residential function in the city (Lichtenberger 2002, Kampschulte 2006).

In spite of the development of extensive residential schemes, the local government wasn't able to counteract upon the ongoing urban sprawl. This could be considered as the next phase in urban sprawl regarding its increase compared to the inter-war years and the direct post-war years. Under the influence of local policy in token of social housing construction, the city's direction of urban development shifted, which could be considered as a material change. Though spatial development alongside the western and eastern axes in the inter-war years and the first years of the post-war period were congruent to the *gründerzeitlichen* structure, urban development in the 1960s shifted towards the southern and western part of the city with the construction of extensive residential zones. Further developments towards the west weren't possible since the *Wienerwald,* which has been a protected area since the late 19th century, tossed up restrictions (figure 4.1). New infrastructural alignments (e.g. rapid transit train, subway and highway) regarding the connection of the eastern and southern suburbs were constructed to relieve the inner-city of traffic that increased parallel to tertiarisation[25] (Cramer 1999, Lichtenberger 1987 & 2002).

Conclusively, the complete urban system of Vienna and its metropolitan area was influenced by changes which already started in the inter-war years. However, the developments started to accelerate and affected all the aspects of the rural-urban relationship. On the meso level, the local government tried to pursue a stable and balanced situation similar to the inter-war years, but they weren't capable to counteract on the consequences of tertiarisation since the sphere of influence of this economic push factor reached beyond their jurisdiction. Overall, these consequences lead to a multiplicity of changed conditions. Considering the rural-urban relationship in these decades, we see significant changes: due to tertiarisation, dynamics within the peri-urban area of Vienna increased. Autonomous processes of for instance the de-centralization trend of retail trade outside the Viennese jurisdiction underlie a first acceleration of a durable transition. The aforementioned development of economic investments as well as the construction of extensive residential areas made the peri-urban area a rather dynamic region. A mixture of urban and rural functions at the city's fringe diminish the demarcation between the urban landscape and country-side to a certain extent: the rural-urban interaction is so to speak

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[24] Social overhead refers to a mode of regulation 'in which the local welfare state played a central role by: meeting a variety of needs which the market failed to provide for' (Hamedinger 2004, p. 3).

[25] Due to the expansion of the labour market into the surrounding region as result of the tertiarisation, traffic commuting to the city increased (Lichtenberger 2002, Kampschulte 2006).

intensified. Besides, as the expansion of urban functions continues, the surrounding area experiences an increasing pressure. An overview of this period is given in table 4.4.

Table 4.4: Overview of the remote post-war years (±1960s & 1970s)

Rural-urban relation	Urban growth towards the south and east.
	Increasing dynamics & uncontrolled change.
Urban	Tertiarisation as push factor: supply driven.
Rural	Mixture of urban and rural functions.
Peri-urban	Retail trade and large housing schemes arise.

4.3.5 Coping with Dynamics: a Resumption of Stability?

Under the influence of macro as well as meso developments, the degree of dynamics was decreasing. After the Austrian 'opening up' to the global economy due to a growing budget deficit (see also: subsection 3.3), a period of regaining control started to develop. The global market put pressure on the developments in the peri-urban area, making investments less attractive. Moreover, the drawback of tertiarisation in the 'post-Austrokeynesia period' led to high unemployment rates which strengthened this reservation towards new investments. The decreasing city population becomes rather tangible and therefore urban policy shifted in focus.

Concerning the metropolitan area or the Viennese peri-urban area, it was possible to identify some organizational changes. To counter-act on the urban sprawl, Vienna and its surrounding provinces, Lower Austria and Burgenland, decided in 1978 to co-operate in the *Planungsgemeinschaft Ost* (Planning Co-operation East). This in order to cope with common issues of for instance traffic planning, infrastructure and spatial planning (Hamedinger 2004). Another change could be found in the Urban Development Plan of 1984 (STEP 1984), which anticipated to the ongoing population decrease and therefore replaced expansion of the physical stock of residences with urban renewal (Kampschulte 2006). Since the 1970s Vienna's urban policy shifted in focus towards the improvement of the infrastructure within the metropolitan area and increasing land values instead of expansion, mainly due to a decreasing population rate (Cramer 1999). Moreover, during this period, the top-down model of urban planning was challenged by problems especially arising in the context of the economic crisis, urban regeneration, urban sprawl and sustainable urban development (Hamedinger 2004).

An organizational shift comprised the reaction of local socialist government to an increasing economic and legitimacy crisis by an attempt to modernize and restructure the political-administrative system in accordance with principles of governance. One consequence for spatial planning in this shift is that it gave rise to private sector investments in large construction schemes. With the liberalization of capital flows and deregulation of the financial market, private capital became more important in real estate development in Vienna during the 1980s. However, after the fall of the Iron Curtain, the private sector became increasingly active with for instance the development of the *Donau City* (a high-rise built up area covering approximately 174.000 m² situated to the left of the Danube). With regard to the organizational aspects on the meso level,

the establishment of the aforementioned *Donau City* in 1991 made an example of a renewed planning approach, since it was developed in a 'privatised and fragmented network, bypassing formal planning procedures, local parliament and civil society' (Hamedinger 2004, p.11) (further elaborated in subsection 5.3). However, in the period before 1989, the transition in the rural-urban relationship seems to deflect slightly towards stability. With especially the pull factor of an adapting local government to the previous dynamics, stability seems to lie in the near future. An overview of this period is given in table 4.5.

Table 4.5: Overview of the 'pre-Iron Curtain era' (± 1980s)

Rural-urban relation	Policy adaptation of local government to occurring dynamics with pull factors.
	Governance: trying to regain balance.
Urban	Public-Private investments.
Rural	Focus on urban renewal instead of expansion, relieving the pressure.
Peri-urban	Attempts made for inter-municipal cooperation.

4.3.6 The Next point of No Return: the Fall of the Iron Curtain (1989)

From a transition perspective, the fall of the Iron Curtain in 1989 can be seen as fenced off 'tipping point' triggering an acceleration of occurring dynamics. Significant changes on all levels can be pointed out from 1989 on. Within ten years, the situation had changed that much, that spatial policy needed to be revised. A once again increasing population rate due to 'opening up' and internal social development like the demand of increasing living space per person and the growing number of single households resulted in a unsatisfactory housing market. Externally induced economic developments accelerated economic developments on the regional level and strengthened the degree of international competition. Therefore, after the fall of the Iron Curtain, 'a new Europe have led to heightened spatial needs of businesses and offices and growing demand for new attractive locations with top infrastructure' (Kampschulte 2006, p.228). Moreover, with the establishment of the aforementioned *Donau-City* in 1991, the integration of the Danube in the city landscape was completed and took on the function of a recreational space reflecting the taking off of a 'new vision of spatial integration of the modern work and recreational society' (Kampschulte 2006, p. 230). This seems a rather distinct example of a possible future leisure economy and will therefore be further elaborated as a micro case in subsection 5.3 *Donau City*.

The Urban Development Plan of 1994 (STEP 1994) mainly focussed on new housing construction schemes and the development of new districts. Urban expansion took place to the south of the city and especially on the other side of the Danube towards the east. Parallel to the re-zoning of old industrial areas and railway grounds within the inner city, the urban renewal policy continued. From an organizational perspective, the Viennese government had to anticipate more quickly due to these dense dynamics (Cramer 1999, Kampschulte 2006). After the opening of the borders towards eastern part of Europe, the internationalisation of the property market took off. According to Kampschulte (2006), a construction and investment boom took place and 'from at least the perspective of the urban planner, the talk of a 'pioneer era' is appropriate'

(Kampschulte 2006, p.230). A central phenomenon in this period of time is the development of large scale projects mainly realized in the shape of Public-Private partnerships under the influence of an increasing importance of citymarketing[26] in a globalizing world (Kampschulte 2006, Bretschneider 2007). 'These schemes set in a changing urban and architectural emphasis 'that reveals an 'outwardly' visible, dynamic development of the economy and contributes to image formation and improvement' (Kampschulte 2006, p.230). Especially the development of the office sector proved to be significant for the changing city-landscape regarding the high-rise office buildings in the urban fringe. Though office space construction is mainly concentrated in the inner-city, large schemes had to orient themselves to the suburban area (Kampschulte 2006). The demand for office space in the core-city entailed the renovation and re-activation of the office sector in old buildings. In addition, available lots and living space in the inner-city were re-developed to office space. This re-development could have called a halt to the construction boom at the city fringe by 'expanding the city within the city instead of its periphery' (Bretschneider 2007, p.495). Nevertheless, inner-city initiatives remained overshadowed by developments in the urban fringe due to the location near exit roads and a lower land price.

Rather similar to the office sector, retail trade develops within the city boundaries of Vienna, since surface bound for retail increase by leaps. To defy 'commercial blight' with *Shopping City-Süd* as a most prominent driver, the city of Vienna develops its own shopping malls within the city boundaries, for instance *Millennium City* and *Gasometer-City* (figure 4.4). With *Donau-City* as paradigmatic case, original land-use plans lost their significance and the new planning processes of new developing areas were flexibly placed as 'moving targets' (Bretschneider 2007, p.496). Bretschneider (2007) calls this into question and seems rather reluctant towards these new developments: 'who controls the process of shaping the city since we're talking about Viennese 'city-projects' (*Donau, Millennium and Gasometer City*)? Do new urban areas actually arise (…) with standard living qualities created by a city-centre in combination with open spaces? Or do Public-Private Partnerships alias investment/ development projects disguise former failures of US urban planning policy (e.g. urban sprawl, dysfunctional city centres, high segregation, a loss of living quality and the city centre's loss of population to its peripheral area) by developing city-fringe-settlements' (Bretschneider 2007, p.496). However, with the city's adoption of the Urban Development Plan of 2005, the local government tries to prepare the city for possible negative outcomes regarding the developments after 1989 (further elaborated in subsection 4.3.7).

Regarding the unchanged lacking legislative base, an increasing amount of cooperation initiatives came into existence. This occurred especially after 1995, when Austria became member of the European Union and policy focus shifted towards regionalism. Parallel to the initiative of *Planungsgemeinschaft Ost* (PGO), further steps towards a common strategy of Vienna, Lower Austria and Burgenland to stop suburbanization and urban sprawl in the Viennese

[26] '*Citymarketing* can be considered as a process to let the urban area join in as well as possible with the wishes of involved and selected target groups in order to create permanent incentives for the social and economic functions and activities of the designated area' (Voogd 2006, p. 71).

peri-urban area were made in 1994. This resulted in the 'Settlement-Policy Plan' to promote the peripheral concentration within the region of Vienna (Hamedinger 2004). In 1998, another initiative for regional co-operation was founded: the Regional Management Vienna-Hinterland, with the central aim of a direct co-operation between Viennese districts and the municipalities in its peri-urban area. In addition, in 2001 Vienna founded its own regional management for the north eastern region (Regional Management Vienna North East) (Hamedinger 2004). The multiplicity of initiatives for inter-municipal cooperation reflects a rather positive attitude towards a durable collaboration between Vienna and its surrounding municipalities. According to an interviewee, Tanja Tötzer (2008), 'only in the last 10 years there was a real change in the strategies of the city of Vienna, because they acknowledged the fact that they were losing people and industry to the suburban region. This was caused by the attitude of 'we are the city' and 'we are strong and powerful', though it makes sense to cooperate with the suburban region too because they have the people, they have the industry especially in the last ten years'.

Figure 4.4: Gasometer-City Wien: The gas plant Gasometer in Vienna-Simmering is located at the south-western fringe of the city and was built in the late 19th century. Gasometer, consisting of four gas reservoirs, was revitalized in the period from 1999 till 2001 by a functional transformation into an entertainment centre, multiple residences, a student home and a conference centre. This was an initiative of the municipal government and was realized in the form of a public private partnership.

With the opening up of the eastern part of Europe, Vienna found itself once again at the centre of Europe. As a result, dynamics in the rural-urban relationship start to increase again due to for instance a once more increasing population rate and the rise of the quaternary sector (see also chapter 3). Local policy seems to be lagging behind on the reality: during the 'construction boom' private actors follow their own path by bypassing formal planning procedures. Considering the peri-urban area, Vienna and its metropolitan area pursue a common policy approach, however the legally binding factor is missing. This dynamic phase stays more or less cut down to the Viennese jurisdiction: with more and more mixed functions at the urban fringe, interaction and integration becomes visible to a certain extent with the aforementioned prominent example of the integration of the Danube in the city landscape. An overview of this period is given in table 4.6.

Table 4.6: Overview of the 'post Iron Curtain era' (± 1990s)

Rural-urban relation	Urban policy is lagging behind on reality.
	Inter-municipal cooperation activities come into existence, reacting to construction boom.
	Out of balance due to increasing dynamics.
Urban	Rise of 4th sector activities, outwardly oriented.
Rural	First step towards leisure economy with *Donau City* as example.
Peri-urban	Influenced by 'citymarketing' in a global context: high rise buildings mark the city landscape (supply driven).

4.3.7 City Development Plan 2005: Regaining Stability?

Regarding meso developments, the fact that the metropolitan area isn't a fenced off geographical entity with an appropriate institutional base seemed a rather relevant factor in the development of the rural-urban relationship through time. As time passes and pressure on the rural surroundings of the city increases, a common approach is wanted. Since the municipalities experience a decreasing room of financial manoeuvre, a tension rises between land use in order to increase the local capital stock and the utilization of land to serve supra-local interest, for instance sustainable development or counteracting on urban sprawl.

The aforementioned conflict between local spatial planning and financial gain for the municipalities is, according to Hamedinger (2004), 'a key issue in the everyday development of the city/ municipalities and explains, why the guidelines of supra-local plans (for instance the STEP) and provincial development guidelines are one thing and real application of planning is another (Hamedinger 2004, p.7). However, with the adoption of the STEP 2005, a different planning approach becomes visible. The previous city development plan (STEP 1994) was characterized by the necessity of a renewed orientation towards the new position of Vienna in an 'open Europe' and a once again growing city. The definition of issues in planning in the STEP 2005 approximately ten years later were to a certain extent more focused on future developments in order enable spatial planners, amongst others, to anticipate better to occurring changes. While drafting the plan, macro developments which influence the city's population rate, its economic growth and the infrastructural demand were taken into account. For instance developments that could occur by the recent EU expansion with Eastern European countries (2004) were considered. With the designation of conurbation types (*Stadtgebietsypen*), the Urban Development Plan clarified in which urban zones certain qualities should be preserved and in which development is possible and wanted. Moreover, since Vienna is transgressing its city boundaries already since 1908, the supra-local interest of the metropolitan area forms a primary element. A durable inter-municipal cooperation is a main goal (City Council, STEP 2005). An example of an alliance between Vienna and its surrounding municipalities, which will be elaborated in Chapter 5, is the initiative of *KREKs: Kleinräumigen Entwicklungskonzepten* (Small

Spatial Development Concepts) applied to Marchfeld West. This is an agricultural and recreational area to the north-east of Vienna which experiences an increasing degree of pressure due to the expansion of urban functions (Hamedinger 2004, PGO 2008).

Another new aspect in the City Development Plan is the fact that its content was an outcome of an extensive discussion process, amongst them the population of Vienna and the region, the City Council, the city's politicians, investors, interest groups and property developers. The transparency strived for in the drafting the plan was also an important aspect in its content. Especially transparency in large construction schemes realized in the form of Public-Private Partnerships (City Council, STEP 2005). As for the booming constructions and investments taking place in the city after 1989, the renewed Urban Development Plan seems more restrictive when it comes to the development of high-rise construction schemes. According to Bretschneider (2007) standard economic locational factors and factors for sustainable development, like quality of life, recreational space, social, cultural and educational aspects seem to overlap one another. Sustainable development as well as a transparency and open decision-making seem with the adoption of the new City Development Plan a precondition in public development strategies and the selection of private investments.

Especially local organization and institutional features seem decisive in the development of the rural-urban relationship. The awareness of occurring problems in the urban fringe has reached policy makers throughout the whole metropolitan area. With the adoption of the STEP 2005, the path towards of what can be considered a durable stable situation could have been set in. Regarding our theory, 'the speed of change decreases and foundation for a new level of stability is consolidated' (Hudalah & De Roo 2007, p.11). With the drafting of the Urban Development Plan, the crucial task of planners' seems to be fulfilled to a certain extent, since they are aiming at gaining control of 'actions in order to co-adapt to the new emerging level of stability' (Hudalah & De Roo 2007, p.11). Considering the contemporary rural-urban relationship, we can assume that the path towards a durable rural-urban integration lies in the near future. An overview of this period is given in table 4.7.

Table 4.7: Overview of *'Regaining Stability'* (± the 2000s and further)

Rural-urban relation	Anticipation in policy to future developments on macro, meso as well as micro level.
	The rural-urban relation deflects towards stability.
Urban	Towards a demand driven 3rd, 4th and leisure economy?
Rural	A common approach is wanted in order to relieve pressure on the rural area. Towards a demand driven leisure economy?
Peri-urban	Inter-municipal policy is serving the supra-local interest in order to counteract on urban sprawl and carry out sustainable development: awareness of qualities of the peri-urban area is growing amongst policy makers.

4.4 Conclusion

After contemplating the rural-urban relationship for the metropolitan area of Vienna from a theoretical perspective based on transitions and multi-layered developments, we will give a short overview of our findings. From a planning perspective, researching the multi-layered changes which underlie transitional behaviour could be useful for gaining more insight and understanding in processes of change. We distinguished seven periods significant in the development of the rural-urban relationship which structure the transition through time. Throughout these periods, the peri-urban area changed in functional and structural ways triggered by autonomous as well as induced processes. By contemplating push and pull factors which underlie the process of change, the phases in the transition of the rural-urban relationship can be distinguished. Mentioned before, it is assumed that with a dominance of push factors, a negative structure exists with a low degree of sustainability in a supply-driven economy. Subsequently, by the creation or emergence of pull factors, a more positive structure comes into existence, characterized by a demand driven economy and a more sustainable situation (figure 2.2).

Considering the developments in the rural-urban relationship of the metropolitan area of Vienna we can conclude that during the phases of high dynamics, especially during the increase of the tertiary sector and after the fall of the Iron Curtain, the rural-urban relationship developed under the influence of push factors. Pull factors can be recognized in the period just before the fall of the Iron Curtain and in the contemporary city, especially in adaptation in urban policy, where a demand driven economy generates a development towards, what could be, a new stability in the rural-urban relationship.

To obtain a better insight in the developments we made an overview of the developments we consider to be of relevance after researching the changing rural-urban relationship of the metropolitan area of Vienna on the meso level (table 4.8).

Table 4.8: The Metropolitan Area of Vienna (following De Roo 2008)

Period	Till 1918	1918 - 1938	1945 - 1955	1960s & 1970s	1980s	1990s	2000s
Peri-urban	Rural	Encountering pressure of urban expansion	Taking up suburbanization & urban sprawl	Overflow of commercial retail trade	Drawback of retail trade	'Citymarketing', high rise construction	*Indeed a proper anticipation in inter-municipal policy to future 'multi-layered' developments?*
Functional Space	Agriculture & national reserve	First signs of urban sprawl deteriorating national reserve	Housing construction is dominant	Retail trade & large housing schemes rise	Focus on improving urban qualities instead of urban expansion	Housing, high rise buildings as well as recreational areas (*Donau City*)	*Service and care, housing, leisure economy?*
Economic state	1st sector economy	1st sector economy	1st and 2nd sector economy	Supply driven 3rd sector economy	More demand driven 3rd sector economy	4th sector activities as well as a first step towards leisure economy (supply driven)	*Towards a demand driven leisure economy?*
Functional state	Production area	Supply driven housing construction	Fragmented settlement pattern	Mixture of urban and rural functions, rural area still under pressure	Urban renewal instead of expansion, relieving pressure of peri-urban area	Mixed land uses: residences, recreation & enterprises	*'Quality of life' and sustainable (spatial) development?*
Structural state	Organic urban expansion	Rise of chaotic settlements: urban sprawl	Urban expansion structured by infrastructure network	Controlled urban growth towards the south and east regarding housing	Controlled: focus on inter-municipal cooperation	Uncontrolled: led by Public-Private investments	*Stability by tuning previous competing spatial demands (environment, economy, urban sociability)?*
System	Stable & balanced	Slowly out of balance	Out of balance	Imbalance	Regaining stability	Imbalance	*Deflecting towards stability?*

While trying to model the above mentioned developments, we perceive different phases of dynamics throughout the researched periods in time (Figure 4.5). Compared to the model of standard transition process (Hudalah & De Roo 2007), few adjustments had to be made since reality, as it seems, cannot be captured in an 'ideal' process from order to chaos and to a new level of stability. Due to contextual factors and especially place specific conditions, each phase develops differently. Though, the distinction of the different phases in transition with different levels of stability, seem rather helpful in understanding the occurring processes. The level of spatial-economic innovation can be considered as an interplay between functional and structural space and economic aspects. As the level of spatial-economic rises, a more positive structure becomes apparent in land use and urban organization. This positive structure comprises interconnectedness between spatial functions within a supply side economy led by a vision of

sustainability. By taking the interconnected trends on the macro, meso and micro level (regarding institutional, organizational and material changes) into account, we can model these changes as a transition process. In figure 4.5, positive structures are represented by a plus symbol, less positive structures by a minus symbol. Assuming that anticipation on autonomous processes is of relevance within stable and unstable periods of development, we tried to attach value to the different (positive and negative) structures arising in this context.

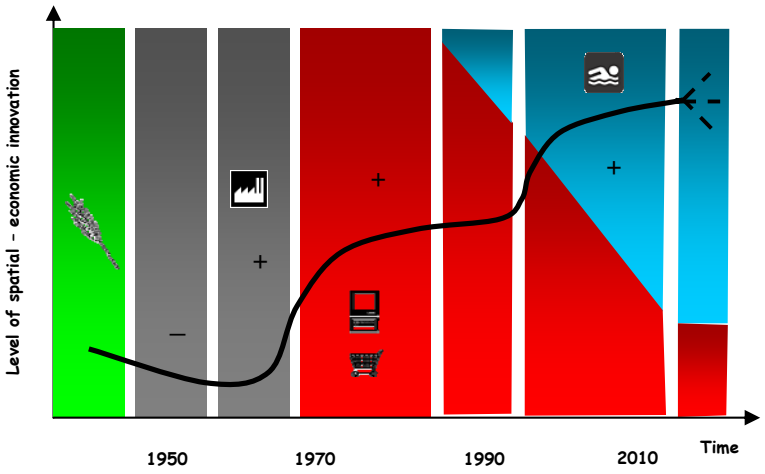

Figure 4.5: Transitions in the rural-urban relationship of Vienna (following De Roo 2008)

In the next chapter three different micro cases are researched where all different scales of developments (macro, meso, micro) come together. After the consideration of distinct developments on the micro scale in the context of macro and meso developments, which will render justice to the uniqueness and specific characteristics of the chosen location, we will model the overall transition of the rural-urban relationship.

5 Micro Cases

5.1 Introduction

Changing situations on the micro level can be considered as parts of the complex system and can therefore underlie a transition of a complex system (Hudalah & De Roo 2007), in our case Vienna's peri-urban area. Contextual developments from the macro level and the specific rural-urban developments originating from the meso level are interconnected with location specific factors on the micro-level and can cause unique local developments under a generic context. 'These include the physical and organizational changes playing at the local level' (Hudalah & De Roo 2007, p.18).

While looking at specific parts of the peri-urban area of Vienna, it becomes possible to distinguish these unique local developments on the micro level. In this chapter we will elaborate on three micro cases situated in Vienna's peri-urban area: *Shopping City-Süd* at Vösendorf, *Donau City* within the Viennese city boundaries and *Marchfeld West* to the northeast of Vienna. All three areas have been subject to change from the 1960s on. These changes seem to be of relevance when considering a transition of the rural-urban relation of the metropolitan area since these changes represent a shift from a supply driven tertiarisation of the economy to a more demand driven service economy with eventually an emerging leisure economy. Moreover, parallel to this shift, the rural-urban relationship seems to become more integrated, for instance with the rise of initiatives for a common planning approach for the metropolitan area as a whole. The case studies included in this chapter are held up as example of a transition of the rural-urban relationship within the metropolitan area of Vienna.

5.2 Shopping City-Süd – Vösendorf

Our first micro-case is *Shopping City-Süd*, a retail centre located in the metropolitan area outside the Vienna's city-borders situated in the municipality of Vösendorf in the district of Mödling (figure 5.1). The main reason for including this case is the fact that this shopping-centre was founded in a rather dynamic period within the peri-urban area and can be considered as a part of a transition of the rural-urban relation to a certain extent.

Figure 5.1: Location Shopping City-Süd (source: Universität für Geography und Regionalplanung).

Our first micro-case is *Shopping City-Süd*, a retail centre located in the metropolitan area outside the Vienna's city-borders situated in the municipality of Vösendorf in the district of Mödling (figure 5.1). The main reason for including this case is the fact that this shopping-centre was founded in a rather dynamic period within the peri-urban area and can be considered as a part of a transition of the rural-urban relation to a certain extent.

Shopping City-Süd was established in 1976 by Hans Dujsik, an Austrian entrepreneur, in cooperation with the municipal government of Vösendorf. The

shopping centre comprises a surface of 250.000 m² and has a current length of one kilometre (figure 5.2). In May 2008, the shopping mall was bought by Unibail-Rodamco, mainly because of its rather favourable location. According to a pamphlet of the Dutch real estate and investment company, '*Shopping City-Süd* is directly located at the most important traffic junction of the southern part of Vienna'. These junctions can be considered as 'major traffic hubs in Central Europe: every day 150.000 cars are passing by the scheme' which proves to be a relevant micro level factor (Unibail-Rodamco 2008).

Figure 5.2: Shopping City Süd (source: www.scs.at)

Since the beginning of the 20th century, the area in which *Shopping Centre-Süd* is located, found itself already within the sphere of influence of Vienna. Before, the municipality of Vösendorf was considered a spatial entity separated from Vienna. The municipal economy comprised principally first and second sector activities and was functioning as a production area for the city of Vienna with for instance its vineries. Fesl (1968) states that in 1908 Vienna was already transgressing its 'real city-borders' towards the surrounding municipalities. With a train connection between Vienna and the municipality of Vösendorf in the late 19th century, the municipal population rate increased by taking up migrants from the city of Vienna. For instance, in 1968 already 52,2% of working class of Mödling, the district in which Vösendorf is situated, was commuting to Vienna (Fesl 1968). Nowadays, having a retail function which serves the metropolitan area while situated in a predominantly rural area, Vösendorf can be considered as a part of Vienna's rural-urban relationship. Moreover, due to its location at the city's fringe consisting of dynamic and mixed activities with rural as well as urban characteristics, Vösendorf is regarded peri-urban. Mentioned before (chapter 4), the 1970s, when *Shopping City-Süd* was established, was a rather dynamic period. A multiplicity of changes occurring at especially the macro and meso level, providing a fitting context for this commercial retail initiative to develop.

Changes on the macro level during the 1970s were of influence on the development of *Shopping City-Süd*. A significant contextual aspect was the implementation of Keynesian strategy of deficit spending providing a stable economic situation in which commercial retail could prosper. Due to the outsourcing of industrial activities to Upper Austria, previously established enterprises in the industrial area located in the southern and western fringes of the city were shut down or consolidated causing a negative trend of secondary labour. Parallel to this development, third sector activities, such as services and research, were growing.

On the meso level, the lacking metropolitan legislative base became another significant aspect of the development of *Shopping City-Süd*. In this context, especially the private sector acted upon opportunities offered by a lacking common planning approach for the metropolitan area. Retail trade was phased out towards the surrounding municipalities replacing first and

second sector activities. *Shopping City-Süd* was realized in cooperation with the municipality (Public-Private partnership) which was aiming at economic growth by attracting investments.

After the fall of the Iron Curtain, a rather chaotic situation started to develop. Mentioned before, within the city boundaries of Vienna, this period was characterized by the development of large scale projects mainly realized in the shape of a Public-Private Partnerships. In this context Bretschneider (2007) states that the suburbanization of retail, with *Shopping City-Süd* as the most obvious example, can be considered as one of the triggers for Vienna to develop their own retail centres in the urban fringe in order to compete with other municipalities. Despite initiatives in order to align the diverging policies within the metropolitan area (e.g. the founding of the *Planungsgemeinschaft Ost* and the drafting of the 'Settlement Policy Plan'), the intra-municipal competition remained. According to Tanja Tötzer (2008), an interviewee, this entanglement of intra-municipal competition in retail trade led to the occurrence of certain problems within the metropolitan area. The large shopping centres outside the Viennese jurisdiction caused phasing out of capital: a significant part of the Viennese consumers 'go shopping over there and leave their money there'. The development of public transport from Vienna to Mödling and Vösendorf remains rather weak, 'because they are not really interested in creating possibilities for the Viennese to travel there easily. This causes, of course, congestion, especially on the Saturdays'. The rather obstinate attitude of the municipality of Vienna, but also of the surrounding municipalities, with the refusal of the implementation of appropriate infrastructure as distinct example, detracts up till the present from spatial quality of Vienna's peri-urban area.

According to Hudalah and De Roo (2007), changing situations can be found which 'typically cause effects to parts of the transition process' (Hudalah & De Roo 2007, p. 18). From a theoretical point of view, our micro case can be divided in two phases: the spatial development and the spatial consequences after its actual opening. In first instance, the context provided by macro and meso developments seems to be decisive in the development of *Shopping City-Süd*. Second, this case can be considered as a driver or push factor, amongst other drivers, originating from the micro level entailing the aforementioned rise of retail centres in the urban fringe of Vienna in the rather chaotic period after 1989.

The actual construction of *Shopping City-Süd,* in the context of an ongoing tertiarisation within the peri-urban area, can be considered as a development that has been strengthening the transition of the rural-urban relationship. However, due to a growing awareness that the current fragmented and disintegrated planning policy of the metropolitan area withholds a sustainable spatial development, the municipalities feel more and more called upon a common planning approach.

5.3 DONAU-City

Our second case is a rather extensive one, namely the integration of the Danube in the city-landscape. Since the urban area didn't expand over the banks of the Danube in the *Gründerzeit,* it was located at the eastern fringe of the city-landscape. However, nowadays Danube River is considered as an integral part of Viennese city-landscape and both the river as its urban surroundings are regarded as being inseparable. With a mixture of functions (leisure, living, retail and office) the river and its adjacent area can be considered as a part of the rural-urban relation. The relevance of this integration of functions lies in the fact that it represents the transitional behaviour of the rural-urban relationship in the Viennese urban fringe to a certain extent. Moreover, the developments which were decisive for the rural-urban relation on the meso level can be found in the development of this specific case.

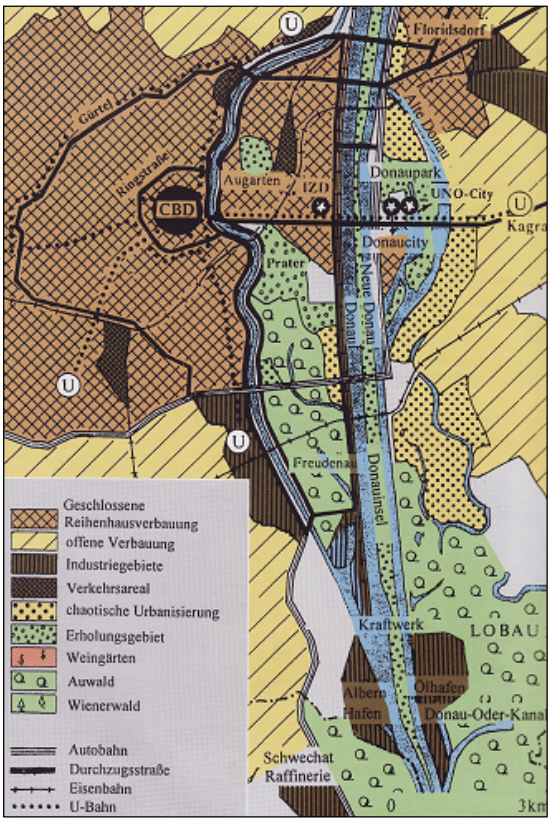

Figure 5.3: Integration of the Danube in the city landscape (source: Lichtenberger 2002, p. 254)

Different from for instance Budapest, urban settlements arose to the *Gründerzeitlichen* west and the east of the Danube. The urbanized area grew on both sides, however, due to frequent floodings, the adjacent river area stayed free of urbanization till the 1970s. We distinguish three phases in the transition of this micro case, starting off with the realization of *UNO-City* in 1979. *UNO-City* comprised a large scheme of high-rise office buildings, also known as 'Vienna International Centre' and was realized in the form of a Public-Private Partnership. A significant aspect of the macro context at that time was the rise of the Iron Curtain and its influence on the city of Vienna (see also: subsection 3.3). With the construction of this project, local authorities aimed at establishing a symbolic function for the city: *UNO-City* functioned as a neutral, cultural landmark in a divided Europe by residing the United Nations amongst other international organizations (figure 5.4). This symbolic function became rather apparent due to the fact these international organizations could have just as easily be located in the inner-city regarding their low demand for office space.

Local factors, such as coping with the dynamics of the river, triggered the second phase of the integration of the Danube in the city-landscape, which comprised the realization of the second river-bed (*Neue Donau*), to occur (figure 5.3). In between the Danube river-bed which

originated from the 19th century[27] and the *Neue Donau*, between 1972 and 1987 an island of 21 kilometres was created, supplied with infrastructural facilities, which made the surrounding Danube area attractive for further urbanization.

The last phase of the integration of the Danube in the city landscape took place in rather dynamic period: after the opening up of the Iron Curtain and the take off of the international property market. The development of *Donau-City* set an example for a new planning approach by embracing the contractual form of Public-Private Partnerships. The construction of this extensive scheme entailed also distinct spatial consequences. With the construction of a 'trans-Danubian sister city' the urban planning policy, which already started off with the establishment of *UNO-city*, aiming at *'Wien an die Donau'* was completed (Kampschulte 2006, p.230). Lichtenberger (2002) and Kampschulte (2006) regard this development as the setting of a higher standard of quality of life since the urban population is provided with a large recreational area within the city-boundaries after the actual integration of the Danube in the city landscape. 'With the Danube taking on the function of a central recreational axis, the present development reflects a new vision of spatial integration of the modern work and recreational society' (Kampschulte 2006, p.230).

Figure 5.4: UNO-City.
'UNO-City located at the Danube is the symbol for modern Vienna. Moreover, it also forms a conventional sign for a large city which after a tumultuous century found a new identity, a new self-awareness and a new attitude as place of peace, freedom and international gathering. Vienna owes its contemporary role as neutral conference metropole not in the last place to the fact that three posts of the United Nations as well as forty international organizations were located in Vienna. Vienna is, after Paris, the second most important city for international conferences on a global scale' (Zollmann 1999, p.42).

Another consequence of the integration of the Danube in the city-landscape was the fact that it strengthened the urban expansion towards the east with the establishment of built up areas towards the river-bed and trans-danubian developments. From the 1970s on, time and context seems to be decisive in the development of the integration of the Danube in the city-landscape. By considering the development through time, the diverging interests of this extensive project become more visible, first in the context of national interests parallel to local interest and later on in a global context with a high percentage of foreign investments. The interplay of macro developments (rise and fall of Iron Curtain and a globalizing economy), meso developments (an adapting municipal government) and micro factors (dynamics of the river) eventually led to a spatial integration to concede to the different spatial demands alongside the Danube. By contemplating the three phases of the integration of the Danube in the city-landscape, a more integrated rural-urban relationship becomes visible within Vienna's peri-uban area.

[27] In order to cope with floodings, the subdivisions of the Danube were merged in one river-bed during the *Donauregulierung* in the period from 1870 and 1875.

5.4 Marchfeld West

In our final micro case, we will elaborate on Marchfeld West. The landscape of Marchfeld covers 900 km² and reaches from the north-eastern part of Vienna alongside the Danube to the Czech and Slovak Republic. However, our study-area stays cut down to the federal state of Vienna and Lower Austria (figure 5.5). Marchfeld covers approximately 1000 m² of the jurisdiction of Vienna and Lower Austria together. Since urban expansion also took place to the east of the Danube, Marchfeld West can be considered a part of the rural-urban relation of Vienna and is characterized by multiple dynamic developments. The main reason for including this micro case is that it represents a significant organizational change on the meso level which can be considered as a pull factor towards a durable stable situation within the transition of the rural-urban relationship. Moreover, initiatives concerning Marchfeld West are aiming at the tuning of the different functions taking place, which will possible result of a mix of functions within this area.

Figure 5.5: Marchfeld West located in Vienna and Lower Austria (source: www.wirtschaft-in-noe.at)

Considering its fertile soil conditions, the area is characterized by its agricultural activities and is called the *Korn- und Gemüsekammer Österreichs* (the corn and vegetable chamber of Austria). The last decades, day-tourism and leisure from Vienna in particular increased in this area at the expense of agricultural functions. Marchfeld West offers the urban population, according to a study of the *Planungsgemeinschaft Ost* (PGO), a temporary escape from the urban hectics (PGO 2002). According to the PGO, the agricultural area is underrated and is rather vulnerable when it comes to stronger functional interests.

The influence of macro and meso developments, especially the opening up to Eastern Europe and the planned expansion of infrastructure, give rise to opportunities for an integrated spatial planning approach to arise. For instance, the pressure of capital intensive land uses like retail centres or industrial areas on the current agricultural functions increases. Besides, the landscape is also more than appropriate for the founding of alternative energy concepts (PGO 2002).

To cope with the loss of agricultural space and the several initiatives regarding the spatial development of Marchfeld West, a concept for inter-municipal cooperation was drafted. Lower Austria founded and subsidized the *KREKs: Kleinräumigen Entwicklungskonzepten* (Small Spatial Development Concepts). With this initiative, the federal state aimed at 'closer links between municipalities which feel a kind of 'belonging together' because of economic, social, historical, ecological or cultural reasons' (Hamedinger, p.10). The organizational change comprised a shift from hierarchal principles and top-down decision-making towards bottom-up participation processes involving all important actors in the concerned municipalities.

A new planning approach becomes clearly visible in this micro-case, especially regarding the willingness of the municipalities to cooperate. Local actors aren't left out of the discussion anymore, which will hopefully lead to a sustainable, integrated development of Marchfeld West with a balanced, stable rural-urban relationship. Also, a more anticipative role of spatial planning becomes clearly visible while applying KREKs.

In this micro-case, the interconnectedness between different factors can be seen. The interplay between the macro and meso level context as well as the specific local situation in the area of Marchfeld West has created a specific path of development. Besides, the interplay of especially material and organisational developments seems decisive in understanding aspects of transition towards a more integrated rural-urban relation. Nowadays, as a part of the rural-urban relationship of Vienna, Marchfeld West can bring multi-functional land-use functions towards the peri-urban surroundings making the area more pluriform.

5.5 Conclusion: the Interplay of Macro, Meso & Micro Developments

With the elaboration of these three micro cases, we tried to render justice to the complex interplay between developments on different scales. It became clear that macro and meso developments form an important influence in the development of the peri-urban area with its rural-urban relationship as a whole and that micro level factors can trigger the development for a specific area. Thus, the combination of developments on these different scales triggers the development for the peri-urban area and its rural-urban relationship. Considering these micro cases, we can conclude that developments differ per area. It can be concluded that a combination of general trends, place specific factors and their interconnectedness determine the transition through time.

6 Synthesis

6.1 Introduction

In this chapter, we will elaborate on our research question in order to clarify the relation between our posed theory based on complexity theory and the observed development of the peri-urban area of Vienna. After our exploration of theoretical aspects and developments perceived in reality, an abstract is made to gain understanding of complexity and transitions as practical tools in spatial planning. First, we will try to answer to the question if different phases of dynamics in the rural-urban relationships can be distinguished and subsequently be considered as transitional phases. Then we will elaborate on our main research question by contemplating if the study of transitional behaviour can function as an analysis tool in order to make spatial planning policy better connected to the ever changing field of reality. Moreover, what will be the role of the spatial planner in this context? At last, we will consider the implications for implementing the concept of transition as planning tool in planning policy for the metropolitan area of Vienna.

6.2 Rural-urban Transitions in the Metropolitan Area of Vienna

6.2.1 The Peri-urban Area as Complex System

Peri-urban areas can be considered as complex systems assuming that the area itself is interconnected in a greater changeable context and consists of elements or 'micro cases' which are all interrelated. While assuming that peri-urban areas show the behaviour of complex systems we consider the developing rural-urban relationship as progress indicator. Related to our case, within the metropolitan area of Vienna we recognize distinct features similar to features occurring within complex systems. For instance, the spontaneous organization of single elements into complicated structures, non-linear behaviour and adaptation to changing contexts (Hudalah & De Roo 2007). As an example, during the inter-war years Vienna found itself in a state of crisis, the Vienna's urban population adapted and therefore fled to the rural surroundings entailing a first set up of urban sprawl settlements. Through time, the context in which the metropolitan area of Vienna functions as a complex system, changes. Autonomous and induced processes can underlie a changing context. These contextual changes form the preconditions under which developments within a complex system, in our case the peri-urban area, can take place. Adapting through organizational or institutional changes can influence these conditions to a certain extent, though consequences remained for a vast part autonomous and rather different than planned and expected. Occurrences like the World Wars, the fall of the Iron Curtain and an increasing globalization can be considered as contextual aspects. But also the city's location and therefore its central geographical location at the centre of Europe. For that matter, the context with its autonomous processes and own dynamics will remain decisive in developments through time.

From a complexity perspective we assume that new, stable and orderly systems at a higher level come into existence after a 'chaotic period' within a complex system: the process of progress and development follow the path from order to chaos and back again (Waldrop 1992). Transitions can be seen as the outcome of the constant dynamism of complex systems due to their self-organizing behaviour. Therefore, a transition could be seen as a shift from one phase of order and stability to a new stable phase, with a period of different degrees of chaos, dense dynamics and little stability in between, resulting in a structural change (Garnsey & McGlade 2006). In order to answer the question if the rural-urban relationship of Vienna underwent this transition, we distinguished seven periods in time which all represent a different degree of dynamics. With fundamentally different stages in the development of the rural-urban relationship, we could say that transitional behaviour could be recognized. Nevertheless, it remains rather difficult to separate the chaff from the weed in rendering justice to the interplay of complex, multiple factors within the transitions.

6.2.2 Transitional Behaviour

To put complexity into practice and create a perspective on reality, we have to take unexpected and contextual conditions coupled with constraints as well as opportunities into account. Therefore, transitions as shaped in the basic model of Hudalah and De Roo (2007) will often not occur in such a gradual, smooth way, with of course the exceptions which prove the rule. Nevertheless, multiple spontaneous or gradual changes, whether positive or negative, can shape a process of structural change. Main features of transitional behaviour can be abstracted and found in all occurring transition, though the uniqueness of each system embedded in their own specific context creates diverging paths of development. Therefore, after contemplating the development path of the rural-urban relationship within the metropolitan area of Vienna, the basic model of transition model may be adjusted.

The development of the rural-urban relationship within the metropolitan area of Vienna deviates slightly from the ideal type of transition offered by Hudalah & De Roo (2007). Considering the aspect of time, we could say that a relatively long period was covered by the 'predevelopment phase'. Till World War II the rural-urban relationship remained rather stable though dynamics start to develop 'under the surface' (Hudalah & De Roo 2007, p.10). During the first post-war years, a rather short 'take off phase' sets in when the rural-urban relationship visibly shifts away from its former level of stability. Considering the developments from about the 1960s till the 1970s, we can say that during this period 'the point of no return' or the 'tipping point' is reached. Since the lasting process of tertiarisation underlies this shift towards the 'acceleration phase', a clear cut transition point cannot be given. However, during and after this period in time, dynamics within the peri-urban area and in the rural-urban relationship increased. First, during the 1980s, the system deflects towards stability due to policy adaptation. Nevertheless, a second transition sets in as a consequence of the fall of the Iron Curtain, which can be considered as a 'tipping point'. The contextual development of the fall of the Iron Curtain causes a shift towards a

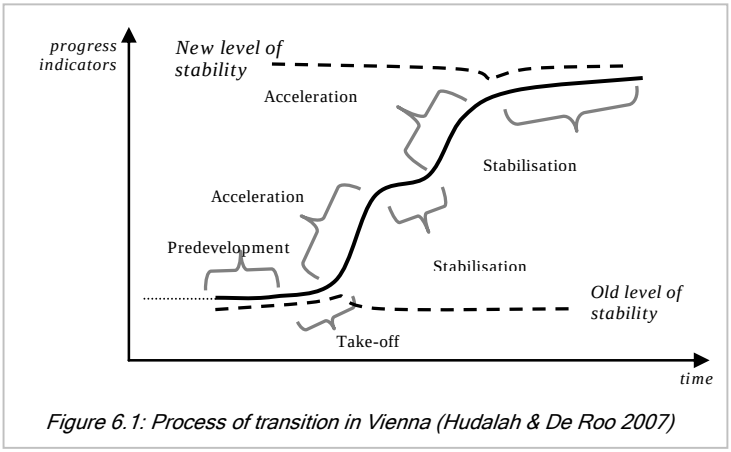

Figure 6.1: Process of transition in Vienna (Hudalah & De Roo 2007)

second 'acceleration phase' entailing once again high dynamics in the rural-urban relationship. During the phase after the first 'transition phase' and the second, more fenced off 'tipping point', chaos was clearly visible providing multiple conditions for developments to occur in a relatively short period of time. This becomes clearly visible in the changing slope of the curve in figure 6.1. During the periods of these dense dynamics, the rural-urban relationship changed significantly when considering material, institutional and organizational aspects. Phases towards stability are induced by the local government as a decisive actor in regaining stability. The first and second phase towards stability are mainly influenced by local policy, though over time contextual autonomous processes proved to be decisive in the development of the rural-urban relationship. After the latest 'acceleration phase', a period of rethinking and policy adaptation took place, which set in the path towards stability.

6.2.3 Tracing the Degree of Dynamics

Every phase within the transition represents a certain level of stability related to the degree of dynamics found during this phase. This diverging degree of dynamics can be regarded as the underlying cause for transitions to occur. As for the rural-urban relation within the metropolitan area of Vienna, these dynamics occur rather gradual, but within a short period of time they reach the highest level during the 'acceleration phase'. Subsequently, they seem to decrease and deflect towards stability after which they all of a sudden increase once again. The interplay of dynamics and stability diverge from the basic, ideal model offered by Hudalah & De Roo (2007) in chapter 2 (figure 6.2). From a transition perspective, we can identify stable as well as dynamic phases within the rural-urban relationship of Vienna. The period before the inter-war years, the Habsburg period, can be considered as a mainly stable phase. In the inter-war years, dynamics increased, though the vast part of the system remained rather stable. A first high increase occurs after World War II, when urban expansion, urban sprawl and the consequences of tertiarisation come together. During the 1980s, local policy adaptations tried to embed these dynamics, which consequently decreased. Nevertheless, the fall of the Iron Curtain entailed grave consequences regarding the degree of dynamics which seemed higher than ever. Vienna found itself, once again, at the centre of Europe and was greatly influenced by globalization. This became apparent with for instance the construction of high-rise buildings in Vienna's urban fringe as result of an international investment boom. Due to changes in planning policy after the turn off the 20th

century, dynamics started to decrease gradually. With new cooperative planning initiatives for the metropolitan area, authorities seem more in control regarding dynamic situations. Nevertheless, dynamics retain a prominent role within the peri-urban area, regarding pluri-potence of the spatial development of Marchfeld West in combination with diverging interests (subsection 5.4).

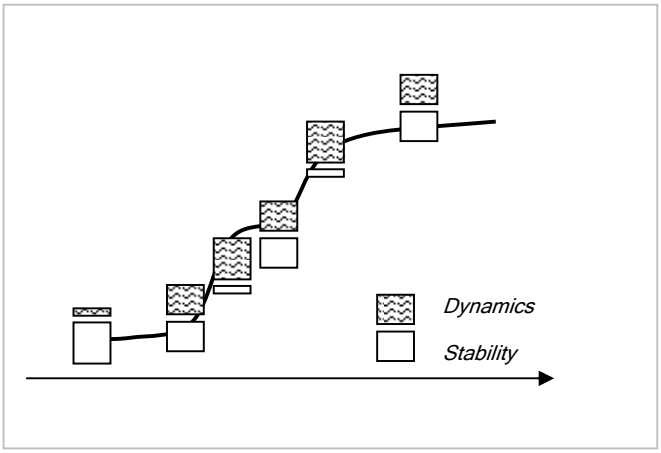

Figure 6.2: Tracing the degree of dynamics for Vienna

6.3 Studying Transitions as Analysis Tool for Spatial Planning

To distinguish relevant transitions in a context where 'everything ligatures with everything' has proved to be rather difficult (De Roo & Voogd 2004 p. 39). The difficulty lies mainly in the fact that it seems to be rather difficult to define, isolate or recognize a transition in reality. Therefore, it makes sense to focus on transitional behaviour instead of the transition as a whole. With less focus upon the old level of stability and the new level of stability, relevant aspects of phases of transition in between these levels become apparent. Studying transitions as analysis tool becomes helpful when a transition process starts to develop or is already developing. By recognizing push and pull factors, autonomous or induced processes, opportunities and conditions, it seems possible to obtain a better understanding of processes happening in the rural-urban area. Further, reflecting on different case study's can lead to recognition of general system conditions and similar trends taking place within the peri-urban area of different urban regions. However, mentioned before, we shouldn't lose sight of the specific features which characterize the difference between urban areas: 'it's undesirable to return to a technical approach, resulting in a false objectivity and control, where different cities are seen as systems in the same context' (subsection 1.1). Therefore, the outcome of processes, such as transitions, can be recognized to a certain extent, provided that unique place-specific characteristics combined with larger given system conditions are taken into consideration. In this context, contemplating different scales of development (macro, meso, micro) seems useful.

Conclusively, we can state that a transition perspective gives us a new and useful perspective on planning practise. By identifying positive and negative trends in combination with the development path in practise and the desirable development path, aspects of transition obtain

a different, though more understandable significance. The role of the spatial planner in this perspective shifts from a reactive role towards a more anticipative role. By taking trends in the context of autonomous and induced processes into account, spatial planners are enabled to anticipate to occurring changes earlier and function in this view as trend-watchers. Therefore, autonomous, uncontrolled processes don't seem random anymore but become more understandable and foreseeable for spatial planners amongst others.

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