From citrus to tourism to a healthy future?

Non-linear transition in greater Orlando

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Abstract

This study intends to interpret change characteristics in the greater Orlando area. A secondary objective is finding the role of the peri-urban area in the region, as this has been proposed as a zone of potential. The study has utilised a chronological and an institutional analysis, as well as three micro cases, to investigate developments in Metro Orlando. The greater Orlando region has passed through the four stages of a transition during its transformation from rural citrus producing region to theme park capital of the world. Wartime investments and progressive local leadership destabilised the region. Post-war growth was eventually overwhelmed by Walt Disney World's impacts on the region. WDW fuelled a change toward a tourism economy. In the early 2000s, new developments have arisen, which might be the predevelopment for another transition. Orlando leaders are expecting biomedical science to lead a new transition toward a more diverse economy, as well as more efforts to preserve liveability and natural resources. Results of this study indicate that the biomedical sciences have the potential to create smarter growth. However, the institutional framework that is in place does not support this. In the greater Orlando area, no holistic strategy is used, but efforts are localised, fragmented, and disconnected. The peri-urban area around Orlando is non-existent as a dynamic zone of potential. An important factor for this has been the restrictions on organic growth set by the institutional framework.

Contents

1 Introduction

In October 2012, the Nemours Children's Hospital opened a paediatric healthcare campus at Lake Nona. This was the fourth of six anchor institutes for Lake Nona Medical City directly southeast of Orlando. The biomedical cluster is expected to have the same effect on Metro Orlando as the opening of Walt Disney World in 1971. That proved to be a decision of enormous impact, as it effectively launched the region into a future of hotels, attractions and strip malls. Orlando was transformed from a rural backwater amid orange groves into the theme park capital of the world. With concerns excessive growth and its effects on urban form and environmental quality growing, a new transformation was envisioned, led by Lake Nona Medical City.

Like many other Sunbelt cities, Metro Orlando grew excessively in the second half of the 20th Century. With land and money available, sprawl was the dominant form of growth. Congested roads, an economy based on low wages and an overdependence on one sector were other worrying problems resulting from unrestricted growth driven by tourism.

This research attempts to characterise the transformation that Metro Orlando has gone through, which started roughly in the Second World War as a result of military investments in Florida. When speaking of Orlando's transition, the period 1940-2000 is meant. In this period, citrus agriculture has been replaced by tourism as the core sector of the economy. That has been accompanied by major changes in the regional setup.

Insights into this transformation and its background, as well as the relationships that have been formed as a result, can be useful for understanding the current developments in the region. Understanding of dynamics in the region is important for future policy. Since 2000, a potential new transition has started, with an important role for biomedical sciences. The research goal is to interpret change dynamics in Metro Orlando. That leads to the following central research question:

What are the characteristics of spatial change in Metro Orlando?

Two sub-questions are posed to get a better understanding of the region and its transitional characteristics:

How has the transition in Orlando taken place?

which is a question about the 1940-2000 transition, and:

In what transition phase is Orlando currently?

which is about the hypothetical new or current transition.

Previous research (Gallent et al. 2006; Qviström 2007; Rauws & De Roo 2009; 2011) has indicated a zone between the urban and the rural as a zone of interest for research on regional spatial change. Hence, this study has an important secondary goal. This goal, to understand the role of the peri-urban area in Metro Orlando, yields the final sub-question:

What role did the peri-urban area play in Orlando's transition?

This question is also intended to find out what the role of the peri-urban area might be in a new transition.

The research motive for this study is twofold. Firstly, the peri-urban area has been researched in a European context, but not so much across the Atlantic Ocean. Research about the role of the peri-urban area in different contexts can make theory applicable to more different cases. It can also add to theory. The second motive for this study stems from the local use of the results. Insights into the dynamics of Orlando's transition, as well as the current situation, are interesting for policy makers, indicating potential areas of improvement.

Structure

The methodology for this study is proposed in chapter two. Peri-urban areas, cities, and regions are considered to be (parts of) complex adaptive systems, for which the theoretical basis, including complexity, systems, transition and regime theory, will be laid out in chapter three. The chapter will conclude with a multilayered framework for analysis of the transition in Orlando.

The research part of this study is divided into four parts. Part A involves the peri-urban area and the institutional framework. The theoretical potential of the peri-urban area as a zone of innovation is based on the theories in chapter three. To answer the sub-question about the role of the peri-urban area in Metro Orlando, this area and its place in between the rural and the urban will be introduced in chapter four. An attempt will be made to understand the rural-urban continuum from a transatlantic point of view. To do so, two interesting notions of American planning will be added: growth management policy and the concept of megaregions. The emergence of both has been a result of the way in which many American cities have grown. Growth management was a reaction to sprawl, while megaregions have been argued to be the globally competitive units of the future. Chapter six is an analysis of the institutional framework in place. The institutional dimension is vital for both the primary object of study, which is the transition in Orlando, and for the secondary object of study, which is the role of the peri-urban area. The Growth Management Act - Florida's implementation of growth management policy – plays a big part, as well as its influence on local policy. The (lack of a) role of the peri-urban area in Metro Orlando is summarised in chapter seven, answering the related subquestion.

Part B deals with Orlando's transition (1940-2000). This includes a chronological analysis of the transition in Metro Orlando (chapter eight). The transformation has taken place roughly from the 1940s, but as supported by systems and complexity theory, it is important to understand existing systems in light of their history, due to path dependency. Chapter nine is an overview of the transition, using the multilayered framework for analysis to give an answer to the first subquestion about how the transition has taken place.

In part C, three micro cases are added to give valuable insights into Metro Orlando. These examinations of developments in Horizon West, Lake Nona, and public transportation, should help to create a more complete understanding of the Orlando situation.

Part D is a continuation of part one, but for the period 2000-2050 and the new potential transition. This includes the changes in the institutional framework, too. As shall be described in this thesis, there is potential for a new transition, of which the start might be retraced to the 2000s. Summarizing this, chapter twelve positions Orlando within the new transition and provides a look toward the future, serving as an answer to the second subquestion posed above.

Finally, chapter thirteen includes the general conclusion and policy recommendations.

2 Methodology

The goal of this study is to interpret change dynamics in Metro Orlando. To interpret is to gain an understanding of the mechanics in place. That understanding has been gained using the multilayered framework (see chapter three), built on complexity and transition theory, to investigate the region. Through a chronological analysis, insights have been gained in the history of Orlando, the relevant characteristics and actors, and changing functions. The chronological analysis has yielded results mainly in the functional and organisational dimension. An analysis of the institutional framework has focussed more on the institutional dimension, although there are of course strong linkages between dimensions. Most notable is the relation between the institutional framework and the actor network, which is part of the organisational dimension. The third part of the research have been three micro cases, these have been used to gain an understanding of the way in which the region functions in practice. The use of micro cases is important to find differences between theoretical reasoning and developments in practice, and useful as it allows for more nuances to be made.

Qualitative or quantitative methods

The methods used are strictly qualitative. Three reasons have led to the dismissal of quantitative research methods. Firstly, most of the concepts used in this document are 'fuzzy'. As shall be substantiated in chapter four, the designation of rural, urban and peri-urban is a qualitative process. The core definition of a transition, as a change from one level of relative stability to another, is another example of fuzziness. Secondly, this study is a singular case study of the greater Orlando region. It is not a comparative analysis, hence quantities cannot be relativized. Thirdly, the greater Orlando region is not a predefined region. As a result of these three arguments, it is not in the study's primary interest to use quantitative methods.

Qualitative methods allow for a comprehensive understanding of the region and its characteristics of change. Both primary and secondary sources have been used. For the chronological analysis, a number of valuable works on Orlando's history were available. The literature review includes a number of works on the development of Florida, Central Florida and Orlando from the earliest settlement in the region until recent times. Considering the change of Orlando from a rural backwater into the tourism capital of the world, the study changes its central focus according to the relevant scale at the time. The institutional analysis is a combination of literature, policy documents and results from interviews. For the micro cases, interviews, policy documents and evaluations of policy have formed the basis. Throughout, news articles and publications by local organisations have also been used.

Interviews

Two sessions of interviews have constituted the core of the primary source gathering. The interviewees have been both private and public planners. The first session was held with Marcos Bastian, urban planner for the Orange County planning division; Michael Holbrook, director of planning at Bowyer Singleton; and William Kercher, chief executive officer at Glatting Jackson. The second session was held at the Orange County Planning Division with Marcos Bastian; Sara Forelle, chief planner; Alberto Vargas, manager; and Jim Ward, urban designer. These interviews have been very valuable for the relation between policy and practice and have provided a lot of useful insights for the micro cases. Conversations

have also been held with prof. dr. Chris Silver and Kristin Larsen, Ph.D. at the University of Florida School of Landscape Architecture and Planning.

Assessment

A number of very useful historical overviews of Orlando and Central Florida were available for the chronological basis of the research. On the other hand, it was difficult to find nuances in the institutional and organisational dimensions. The interviews and micro cases have therefore been slightly more focused on that part of the research. Necessarily, these dimensions have not been investigated as comprehensively as hoped in earlier years. The relevant structures have been identified however. Due to the huge change in the region since the Second World War, a far more extensive overview of the earlier period would not have had much use.

Overall, the study has yielded valuable results, but as a logical result of the methods used, these are not backed up by numbers. It is therefore intended as a study before policy, rather than a study of policy. Quantitative research could help to evaluate policy or to back up outward publications, such as those of myregion.org (see chapter eleven). Theoretical qualitative studies and practical quantitative studies can complement each other. Recognising its weakness in that regard, this study does not intend to solve any problems with concrete actions, but attempts to interpret change dynamics in Orlando to give a theoretical basis for further practical research.

3 Theoretical framework

Planning theory has moved from blueprint planning and other methods in the technical rational approach toward participative methods to deal with very complex issues with a communicative rational approach. Using complexity and systems theory can help to situate planning issues, as the degree of complexity of issues can be used to determine the approach required. (Chermack 2004; Rauws & De Roo 2009; De Roo & Silva 2010; De Roo et al. 2012).

Class I systems are closed and experience high causality. Because of low contextual influence and high predictability, the technical approach and generic decision making are useful. Class II systems are circular feedback systems, with more uncertainty. To deal with these systems, the scenario approach is an option.

Class III systems are systems with high interrelatedness and are chaotic. These open network systems experience remote causality and require governance, rather than government. To reach multiple composite and dependent goals a communicative approach is viable for such issues. Problems in these systems are often 'wicked', and as such cannot be understood completely. They have complex interdependencies and can be explained in many different ways (Rittel 1972, De Roo 2012).

Class IV systems

The fourth systems class is made up of non-linear complex adaptive systems. The systems are not static or fixed, but robust and flexible at the same time, and always in a state of 'becoming', which is in contrast to systems classes I-III, which are in a state of 'being'. They have the possibility to change from stability to instability and back. Through continuous emergence and adaptation, these systems can have the benefits of stability, while being able to change in both structure and function (De Roo 2010).

Complex systems are made up of a large number of components. Although these components are autonomous, they interact with each other and with the environment. As a result, complex systems are unpredictable (Heylighen 1999, Rotmans 2005). Class IV systems emerge at the edge of order and chaos and are able to adapt to contextual change through self-organizing and re-organizing processes. They contain feedback loops which can work damping as well as amplifying (Rotmans & Loorbach 2009). Because of being out of equilibrium, and therefore in a constant process of evolution and reorganisation, these systems are called complex adaptive systems. The organising processes of complex adaptive systems cannot be controlled by one actor alone, but emerge through interaction in a broader network, as actors adapt both to each other and to the contextual environment.

These systems representing a problem are not just wicked as defined by Rittel (1972). They are both complex and adaptive. This makes them persistent problems, because the systems in which they occur are always becoming, rather than static. This implies that small variations can lead to substantial divergence as time passes (De Roo 2012). Persistent problems are complex, uncertain, difficult to steer, and difficult to grasp. Because they are rooted in societal structures and intertwined into the system that itself is changing, it is impossible to deal with persistent problems separately (Rotmans 2005).

Co-evolution

Complex adaptive systems differ from other systems by their connectedness to the contextual environment (Boonstra & Boelens 2011). The re-organization of the system, or co-evolution, is a result of the continuous adaptation of actors to each other and to the changing contextual environment. Due to the reciprocal identity of this environment, this results in mutual causality. Systems and

subsystems oppose or confirm each other. Internal and external influences can both influence the reproduction of the system (Boonstra & Boelens 2011). Due to the constant iteration and reproduction of the system, a high level of uncertainty exists in complex adaptive systems. Because of mutual causality, it is impossible to study the drivers of change independently. Therefore, studying both the parts of the system and the contextual environment is necessary (Rotmans 2005).

The emergence of new structures and patterns is an important property of complex adaptive systems. These new structures create chaos or disruption at the micro level, but can result in autonomous change and order at a higher level. The emergence of new patterns is a result of activity on the subsystem level, and is thus an endogenous property (Rotmans 2005; Rotmans & Loorbach 2009).

Selforganisation

The capacity of a complex adaptive system to create structure from its internal constitution is called selforganisation. These structures are a part of the urban system, and actors within the system are both the initiators and the users. The city is the result of reciprocal actions by its inhabitants, and influenced both by individual motives and by collective actions. Selforganisation occurs without higher level coordination, and is as such the internal driver of the continuous evolution of a complex adaptive system (De Roo 2012; Rotmans 2005). Emergence and selforganisation are related concepts, but can exist without one another. In complex adaptive systems, they occur simultaneously (Rotmans & Loorbach 2009).

Path dependence

The range of possible outcomes is implied by path dependence, as existing structures will influence self-organization and co-evolution. The existence of path dependence is inherent in complex adaptive systems, as these are in a constant state of change and have a history. The causality that results from (previous) actions is a remote causality. Path dependency does not imply inevitability, but it sets the potential variations on the trajectory of a system, while the present actions define what trajectory is taken (Martin & Sunley 2006).

The potential trajectory of a system is influenced by resilience, transformability and adaptability (Walker et al. 2004). Resilience is the potential of a region to return to its previous state after a disruption and to reorganize while undergoing change. There are four important aspects of resilience. The level of *resistance* of the system influences the speed of change. The *latitude* or maximum amount of change a system can recover from determines its tipping point. A system's *precariousness* is its proximity to a threshold or limit. Finally, *panarchy* implies a multilayered transition where both the context and the situation of the parts are important. Adaptability is the capacity of actors to influence resilience. Transformability of a system is relevant when an existing system must be changed due to external conditions. It means the ability to create an entirely new system with different functions, scale and variables (Walker et al. 2004).

These processes of self-organization, co-evolution and path dependency imply non-linear behaviour in complex adaptive systems. Cities and regions can be seen as complex adaptive systems since they are both robust and flexible (Rauws & De Roo 2009). Robustness is required as a framework for innovation and change. Robustness creates the cohesion on which self-organising initiatives can thrive (Heylighen 1999, De Roo & Zandbelt 2012). The potential for these initiatives is derived from flexibility and versatility in the system. For this, openness is required: systems cultivate information from external contexts, which creates randomness (Arshinov & Fuchs 2003, Vasileiadou & Safarzynska 2010). Openness is openness to the constructive properties of order and chaos.

A multilevel framework is required to view changes in a system, since the relationships with higher and lower levels are important to understand the system level. Three levels of dynamics correspond to three levels of scale. Context dynamics, or macro trends, influence the system externally. In the case of spatial transitions, this system is the region. System dynamics are concerned with the system itself, which is the meso level. As a result of changes at a higher level, micro level changes take place. These agent dynamics are self-organising innovations which can be the catalysts for change at the meso level. Because higher level dynamics induce and force change at lower levels, while lower level innovations can be drivers of regional change, it is essential to view regional development in a multilevel context. Through co-evolution, the recursive relationship between these levels are what determines outcomes in non-linear change.

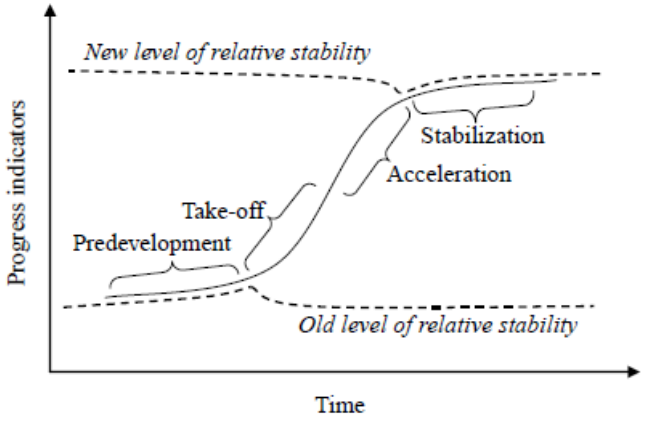


Figure 1; Non-linear transition. Source: Rauws & De Roo 2011

Non-linear transition

Structural change in complex adaptive systems can be understood using the concept of transition. Four phases are distinguished in a transition from one level of relative stability to another (Figure 1). With the system in dynamic equilibrium, the *predevelopment* phase harbours autonomous processes which can become drivers for change. Emergence of new innovations at the micro level creates the potential for disruption of the level of relative stability (Rotmans 2005).

In the second or *take-off* phase, the structural change process gets underway as autonomous processes start to enforce each other. The critical mass that has to be achieved to initiate the take-off phase is defined by the components of resilience outlined above. A system has to destabilise, or open up, in order to change.

Through co-evolution the entire system starts to change, both in function and in structure. At the *tipping point*, dynamics are at their highest as all parts of the system are changing at once (Gladwell 2000). After the tipping point, the *acceleration* phase commences, which includes multidimensional changes as the system's identity and structure change. Defragmentation and clustering occurs as selected new structures become more dominant (Rotmans & Loorbach 2009). The system is pulled toward a new level of relative stability.

The fourth period is a phase of *stabilisation* where dynamics decrease as a new level of relative stability is reached. (Rotmans & Kemp 2003) "The new equilibrium is a dynamic equilibrium, i.e. there is no status quo, because a lot is changing under the surface. In principle, it is possible to have different paths to the same equilibrium level. It is also possible for the same transition pattern to be realized in different ways." (Rotmans & Kemp 2003, p. 9).

Regime theory

Regime theory is useful to understand selforganisation, by adding two more levels to the three interacting levels of scale. The landscape is the macro level, which represents exogenous changes that can affect the meso level, or regime. This regime is the dominant functioning, which can be disturbed by *niches*, the alternative regimes at a lower level. A transition is the emergence of innovations, which create alternative regimes (niches), challenging the existing regime. Through co-evolution, path dependency, selforganisation and other properties of complex adaptive

systems, one of the alternative regimes becomes the new dominant regime (Rotmans & Loorbach 2009; Schilperoord et al. 2008).

A transition process occurs when the balance between the dominant regime and the alternative regimes at the niche levels is altered. Two additional levels are added by Schilperoord *et al*. (2008) to understand transitions, or in their words, transformations. The emergence of new niches at the micro level is supported by actions of individual agents, who provide an *undercurrent.* Niches can challenge an existing regime if they have grown strong enough. These *empowered niches* form a level between the micro and meso level and are essential in transformations, because without the empowerment of alternatives, there will be no selforganisation.

The addition of the undercurrent and empowered niches levels adds a layer of understanding to the transition model. The undercurrent plays an important role in the predevelopment phase, as this is the origin of emergence of new structures. The creation of potential alternatives is important to initiate disruption of a system from its level of stability. The empowerment of niches is what drives the take-off phase, by fuelling fragmentation and dynamism. The acceleration and stabilisation phase are results of an alternative regime achieving dominance.

Push and pull factors

Transition theory states that drivers for change are always present (Rotmans & Kemp 2003). The resilience characteristics (Walker et al. 2004) are important for the timing, location and shape of the transition, although the array of possible outcomes will grow during the take-off phase, implying uncertainty. The factors that influence convergence toward a level of relative stability can be seen as pull factors, while those that encourage change are push factors (Rauws & De Roo 2011). Push factors are prevalent in the take-off phase in a transition, as fragmentation occurs and processes of self-organisation create dynamism. Past the tipping point, pull factors cause clustering and a stabilization towards a new level of relative stability.

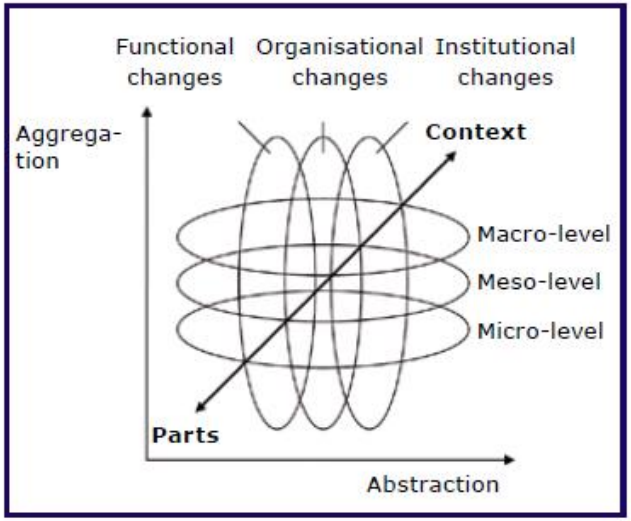


Figure 2; Conceptual model. Source: Rauws & De Roo 2009

As stated before, a lot of uncertainty is involved with transitions in complex adaptive systems. Niche empowerment and resilience of the current regime are competing forces. Empowerment, as well as the precariousness and latitude components of resilience, implies that thresholds are important for a potential take-off. Path dependency ensures reproduction of a system's internal dynamics (Van der Brugge & Rotmans 2007). Existing structures and previous decisions are therefore factors defining the threshold that has to be reached to destabilize a system.

Conceptual model

The theoretical framework above can be (partially) summarised in the multilayered framework (Figure 2) suggested by Rauws and De Roo (2009). This framework is a useful tool for an integral overview of the context and the parts in the rural-urban continuum. It consists of three levels, the macro, meso and micro. The system central to the analysis is the meso level, which exists within a macro context. Macro level changes are trends and long-term changes which have an effect and might require a reaction at the meso level.

These changes occur in three dimensions, functional, organizational and institutional.

Functional changes include changes in population, land use and economy and other physical and non-physical urban and regional features as well as catastrophic events such as war and disasters. Organisational changes result from the changing economic, political, governmental and non-governmental organisations. Institutional changes are shifts in values, norms, rules and other frameworks of meaning. Transitions on the rural-urban continuum should be accompanied by structural changes on all three levels and in all three dimensions. The different layers will usually experience low direct causality and the rate and trajectory of change can be very different (Rauws & De Roo 2009, p. 37-38).

The different dimensions and levels are interrelated, as argued in this chapter. Therefore, the answer to the subquestion 'How did the transition take place?' can only be give after all three dimensions have been investigated. Chapters five and six close in on the institutional dimension, while chapter eight has a more functional and organisational focus. Chapters also have a scalar focus: chapter five has a macro level topic, while chapter ten deals with micro cases. Without losing notion of interrelatedness, this results in a reasonably complete overview of changes in all dimensions and on all levels, allowing integration of topics in the final conclusion (chapter thirteen).

Part A: The institutional framework and the peri-urban area

4 Rural, urban and peri-urban areas

The primary research goal of this study is to interpret change dynamics in Metro Orlando. The theoretical basis is formed by chapter three and the core chronological information for the analysis is in chapter eight. This chapter will provide the basis for progress toward the secondary research goal: to understand the role of the peri-urban area.

Complex adaptive systems function within a contextual environment and are constantly changing. Therefore, it is irrelevant and often impossible to draw clear boundaries which will remain useful for a longer period of time. In the case of a city-region, some concepts are important to look at a little closer. Firstly, there is a transatlantic struggle over definitions and terminology. In this chapter, it will be argued that suburbs are not the exemplification of the peri-urban. Secondly, the concept of the rural-urban continuum will be introduced as a means of visualising the entire rural-urban gradient over both space and time. Finally, megaregions will be put forward as one way of translating the rural-urban continuum into practice.

Definitions: suburb, fringe or peri-urban area

The usage of the terms urban fringe, rural-urban fringe, suburban fringe and its variations was common in mid-twentieth century North American case studies. These case studies however used an array of different delineations and it was somewhat later that theoretical definitions were suggested (Kurtz & Eicher 1958; Pryor 1968). Kurtz and Eicher use five commonly used distinguishing features to state that suburbs are in fact not on the (rural-)urban fringe. Their location (1) is contiguous with urban settlements. That means that government structure (2) and utilities are often urban in nature either by spill-over effects or because of incorporation within city borders. Densities (3) are often higher than those of fringe areas, while the land characteristics (4) are predominantly residential. Suburbs have a high focus on the city as the inhabitants have predominantly urban occupations (5). In summary: suburb land use is urban, while fringe land use is not.

The definition of fringe follows as being that zone in between the urban (and suburban)

Box 1: Patio Man

The zone of competition is a dynamic zone, but it harbours an intrinsic tension. That tension has been described by Brooks in his essay on the Patio Man (Brooks 2002). This exemplary American looks to combine the closeness and productivity of city life with the independence and possibilities of the rural. His perfect life is neither in the city nor in the country but right on the edge. But as Patio Man settles in his lawn chair, he gets surrounded by people that think likewise and before he knows, the spot on the edge he had found, moves. Since it is impossible for people to all live on the city edge, there will be competition and as Brooks puts it: “He [Patio Man] just bolts. He heads for the exurbs and the desert. He goes to fresh ground where his dreams might more plausibly come true.” (p. 125). This is just one example of competition and dynamism on the edge, fringe, periphery or however one might name it.

and the pure farmland where any urban occupations and land-use is absent (Pryor 1968).

American planners at least seem to have consensus over the fringe as "a rural-urban battleground for water and land, loss of farmland, wildlife, and countryside, and a refuge of the geographically mobile, who by fleeing the city trade commuting for a mythical piece of Arcadia only to leave behind thinning central cities and inner suburbs." (Audirac 1999, p. 7) In short, it is where Patio Man (Box 1) would like to live next. These areas have been termed exurbia (Nelson 1999) and postsuburbia (Phelps & Wu 2011), which allows the point to be made that these areas are the remaining arenas for competition between the rural and the urban. Returning to Kurtz and Eicher, the suburbs are the areas where the city has managed to displace the rural.

Contemporary European research has rightly found that definitions of the fringe have neglected the peri-urban area as a unique zone with potential (Gallent et al. 2006; Qviström 2007; Rauws & De Roo 2011). The availability of cheap, yet accessible space and the confluence of different functions and activities are aspects that are not just between the urban and the rural, but make these zones unique and call for a different approach in planning.

In this study, the zone in between the urban and the rural will be called the peri-urban area. Although the term rural-urban fringe rightly suggests a zone of competition, it also suggests that this area is inferior to the rural and the urban. This study follows other authors in the claim that peri-urban areas are zones that require planners' attention as a result of both necessity and opportunity. The use of the term peri-urban suggests urban influences without implying urbanity. As the wilderness is seen as extreme rurality, the peri-urban area is a change away from the physical sandbox. It is a change influenced mostly by the urban. Therefore, calling this area peri-urban implies that it is a (partly) built environment, which is no longer rural.

Borders

North American planners and theorists made an attempt to find a definition by numbers. They have been looking to distinguish between areas by using the number of urban jobs, population density, distance to the city and other quantitative variables. While these are important characteristics of urban, rural and transitional zones, and essential for planning practice, it is undeniable that a gradient exists. Since there is competition, any borders that exist will move, as the Patio Man moves from suburbia into exurbia only to find himself in a new suburbia. The rural-urban fringe or peri-urban interface (PUI) is not a problem zone, with clear borders or defined characteristic, but a gradient zone, which makes it differ from both the urban and the rural.

More often than not it is impossible to draw clear boundaries between these zones. Segments within the fringe itself will vary in density, content and structure (Gallent et al. 2006). As cities have grown, they have leapfrogged boundaries as they are no longer useful (e.g. city walls) or insurmountable (e.g. bodies of water or mountain ranges) or if other areas for expansion are no longer preferable (e.g. around rivers and valleys). One can often clearly define some neighbourhoods as urban, but it is difficult if not impossible to tell where the urban area ends and the peri-urban starts. The same goes for the other side of the spectrum.

The rural-urban continuum

Quantitative definitions are not required as long as the concept of the peri-urban area as a zone of transition from rural to urban is kept in mind. Due to the processes of urban growth as well as a blurring of physical distance as travel time becomes the defining notion of distance, any boundaries that exist are only relative. Hence, this study adopts an agnostic view of these boundaries as irrelevant.

Since we have defined the peri-urban as the area which is neither urban nor rural, but in between, the three zones aggregate to the full continuum over space. Simon (2008, p. 171) argues for the use "of an urban-rural continuum or gradient outward from the city across the PUI. The slope of the gradient is variable around the city, across the PUI and over time, although urban or rural islands may occur within the PUI for various reasons." In short, the PUI or rural-urban fringe is a (the) zone of hybridity.

Acknowledging this gradient rules out any quantitative, purely practice-oriented delineation of the transitional zone. The mix of urban and rural characteristics and functions constitute it as a fuzzy, almost theoretical zone with its own dynamics, which calls for its own planning practice in addition to existing regional, urban and rural planning (Allen 2003; Rauws & De Roo 2011). The intrinsical high dependence of peri-urban areas upon the rural and the urban calls for an integral approach. The idea of an integral rural-urban gradient as proposed by Simon has been argued for by Chomitz *et al*. (2005) for demographical purposes and by Colunga-Garcia *et al*. (2010) for ecological purposes. They have used quantitative methods as those support these professions better. In planning, statistics can help to visualize the gradient, but as argued above, the main use of a gradient or continuum is that it implies fuzzy boundaries, while clarifying three different zones. Meanwhile, the rural-urban continuum answers to Qviström's (2007) call for a view of the peri-urban as a place in its own right, rather than a temporary phase (i.e. with a start and an end situation). He shows that even if a zone is designated for future urban development, non-linear processes can influence the outcome. Planning often has not adapted to the hybrid character of the peri-urban area, since areas are labelled in a dichotomous way, as nature *or* culture, city *or* countryside (Qviström 2007, p. 280).

From Rauws and De Roo (2009, p. 36): "An urban-rural transition implies a structural change towards a new level of spatial interaction. It also represents a critical stage of development in urban-rural relationships." This implies that, in a transition, the configuration of the rural-urban gradient changes as a function of both space and time. This calls for the introduction of the rural-urban continuum as an analytical tool as proposed by Simon (2008).

Non-linearity is likely to be an important concept within this continuum. Research on non-linear transitions in rural-urban relationships by Rauws and De Roo (2009; 2011) implies that the rural-urban continuum changes over time. The continuum also changes across space, responding to Simon's argument for a non-linear rural-urban gradient across the peri-urban interface.

Megaregions

The history of Orlando does not resemble that of European cities. Therefore, other concepts and constructs than the peri-urban area might be relevant in light of spatial relationships. One interesting concept that has been introduced in American planning documents is the megaregion. Megaregions could be a way of translating the theoretical rural-urban continuum into practice.

The concept of the megaregion is a reflection of the current spatial distribution of capital and population in Northern America. As metropolitan regions grow and become more interconnected, eleven regions have been identified that serve as a functional unit of economic activity (Contant & Leone de Nie 2009). More than a reflection of contemporary America, the concept of the megaregion also serves as an identification of what are expected to be the nuclei of economic and population growth in the coming decades. One of these megaregions is South Florida.

Global competitiveness

Megaregions exist of core areas and their hinterlands, which are connected by functional relationships (Ross & Woo 2009). According to America 2050, they are defined

by “layers of relationships that together define a common interest” (america2050.org 2013). Five categories of relationships are given: environmental systems and topography; infrastructure systems; economic linkages; settlement patterns and land use; and shared culture and history.

The megaregion has been promoted as the answer to essential questions of globalization, equity, and environment, which surpass jurisdictional and even regional boundaries (Ross 2003; Regional Planning Association 2006). Failure to deal with these issues efficiently has often been a result of two organizational deficiencies (Contant & Leone de Nie 2009). Firstly, a disparity has emerged between collective priorities and local government priorities. As a result of local governments’ dependency upon tax income and thus on the wealth of its inhabitants, neighbouring jurisdictions are more likely to compete than to cooperate. This results in regional inefficiencies and local distortion of priorities. Secondly, the scale at which issues facing cities and regions are dealt with is incongruent with the location and scale of the potential solutions. Even in the traditional metropolitan framework of cities, suburbs and rural areas, problems are cross-jurisdictional and should be handled that way. Due to the competition between local governments and between local and state governments, interjurisdictional cooperation is difficult to achieve (Downs 1994; Contant & Leone de Nie 2009).

The three sets of issues mentioned above are globalization, growing inequality and threats to the environment and liveability. According to the proponents of the concept (Ross 2009; Todorevich & Hagler 2011), the functional megaregion will be essential to ensure continuing global competitiveness. As congestion limits the effects of space-time convergence, some clustering of economic activity is warranted, and megaregions could be the new optimal unit of economic functionality (Ross 2009). As they include both the core regions and its areas of influence, megaregions have the appropriate size for efforts to reduce environmental impacts and counter climate change. Redistribution of wealth can ensure less fragmented conservation efforts. By operating on the entire rural-urban continuum, it is possible to combine reduction of environmental impacts and preservation of large natural areas. The challenge of ensuring economic growth and global competitiveness, while maintaining quality of life and achieving results regarding the environment has been acknowledged in the literature (Ross, Barringer & Amekudzi 2009; Campbell 2009; Ross & Woo 2009).

Connecting and cooperating

The Florida Peninsula is regarded as one of eleven megaregions by America 2050 (Todorevich & Hagler 2011). Although the region is dominated by Miami, Orlando and Tampa are expected to reach a population of over 3 million before 2050, too. Orlando’s tourism and convention facilities can play a similar role to the central business district in other regions.

America 2050 argues that the success of the megaregion is dependent upon connecting these with the region’s downtowns and creating a supportive rail system. (Todorevich & Hagler 2011)

The importance of a megaregional transportation system and high connectivity is a major focal point for America 2050, adopting an argumentation based on efficiency. For short distances, the most efficient mode of transportation is by automobile, while for long distances, this is air transportation. At intermediate distances, high-speed rail (HSR) can fill an efficiency gap (Hagler 2008). The creation of a transportation system combining these three modes is essential to ensure connectivity without creating more congestion. Adapting for megaregions as the hubs of future growth in HSR planning will ensure higher levels of ridership and quality of life (Ross & Woo 2009).

A major issue in transportation planning is the fragmentation of government and as a result, of government funding (Ross 2009, Ankner & Meyer 2009). Orfield and Luce (2009) suggest that (mega)regional governance structures can play an important and essential role in solving this issue and other cross-jurisdictional problems. To do so, the regional government does not need total control, as interconnectedness within megaregions should lead to more local incentives for cooperation. However, to turn the theoretical concept of megaregions into practice, government structures will have to adapt, or as Banerjee (2009, p. 104) poses: “Planning at the megaregional scale is essentially a problem of regional governance, which calls for innovations in institutional arrangements.”

This chapter has introduced a number of concepts that are useful for getting an understanding of the role of the peri-urban area around Orlando. In the following chapters, this will remain a goal, secondary to the multilevel and multidimensional analysis of the transition.

5 Growth management

A major difference between American Sunbelt cities and European cities is the pattern of growth. European cities often have a history of organic growth, with a functional centre offering markets and safety. On the other hand, cities such as Orlando have grown in an excessive fashion in an age with a highly evolved transportation system based on automobiles, as well as a wide availability of land. This has led to negative consequences, mostly connected to urban sprawl (Nelson & Duncan 1995). Growth management is an important (macro level) factor in American spatial policy and is therefore discussed in this chapter, preceding the analysis of the institutional framework in Metro Orlando.

Motives and goals

Growth management has been adopted by a multitude of state governments as a reaction to sprawl and as a tool to enforce land-use regulations. Since sprawl and undesirable land-use are partially rational results of existing state policies, growth management is often aimed at mitigating and offsetting the sprawl-inducing effects of public policy, such as tax benefits in neighbouring counties (Dawkins & Nelson 2003).

Economic reasoning was the original main driver for growth management, as sprawl causes a considerable array of undesirable economic side-effects. Economic growth and land preservation are competing for space around growing urban centres and growth management has been implemented as a tool to channel this competition. Nelson and Duncan (1995) define motives for growth management. Firstly, taxpayer protection from overbuilding as exaggerated demand for housing, public facilities and other spaces can unnecessarily drive up taxes. In addition, undesirable and conflicting nearby developments can affect property prices. Secondly, greater density reduces the cost of public facilities by minimizing distances for infrastructure systems as well as maximizing usage of facilities. Thirdly, countering subdivision of farmland results in retaining larger scale agriculture and higher productivity of that farmland. Growth management will also help to mitigate erosion caused by the built environment. Finally, sprawl can cause or intensify racial and social class segregation which has unwanted social and economic side-effects.

Growth management can be an integrative tool not only for government and taxpayer economic and social benefits, but can have an important role in environmental protection and land and resource preservation, liveability and infrastructure optimization as well (Ingram et al. 2009). According to Anthony Downs (1994) integrative urban growth strategies at a regional level can counter effects of fragmented land-use powers as well as open up an area of potential synergy. Sprawl and discrepancies in actual and political borders are aspects of American cities that ask for higher-lever programs.

As has been noted in the previous chapter, displacement of rural by urban functions is a vital topic in regional planning. The effects of sprawl on agricultural land use are greater than they seem at first sight, as erosion and farmland subdivision reinforce displacement effects. As awareness of the effects of sprawl on the countryside has grown, agricultural land preservation and urban growth management policies have become more common (Nelson et al. 1995, Beesley 1999).

Formation

Regional government structures experience a high level of resistance from local governments unwilling to lose their authority. As a result, metropolitan governments are

rare and often have low political support. Downs (1994) suggests seven alternatives that could enable a useful growth management strategy to be formed. Herein all layers of government can have an influence as growth management can be approached on different scales. The federal government can enforce regulations for urban areas that require them to set up regional agencies. It can also set up financial incentives for regional institutions, for instance by creating a regional fund for a specific policy area, such as transportation. State governments can exercise authority as well by requiring local governments to operate within a broader framework, thereby utilizing the low scale of these governments to accomplish higher scale results. States also have the possibility of setting up growth management programs, which has emerged as a major tool to encourage local governments to set up urban growth programs (Gale, 1992). These state programs will be treated in more detail below.

At the sub-state level, regional cooperation encounters less resistance if the institutions are functionally specialized and in the local interest, rather than competitors for authority. Another, albeit less effective, possibility is voluntary cooperation between local governments. The last alternative suggested by Downs is public-private coordination which has the potential to aggregate multiple institutions and influence regional growth-related policies. Downs' typology is consistent with Nelson and Duncan's distinction between state and regional approaches to growth management, although it adds the federal layer as well as public-private coordination.

State growth management programs

State growth management approaches have the advantage of operating within a professional environment. Flows of money and information are more easily accessible to a state department than to local governments. State agencies offer advantages over local growth management programs from the authority it can wield. By having jurisdiction over the entire metropolitan area, coordinated land use policies for the entire land market can channel new growth. This counters unwanted growth in unregulated areas of the land market (Downs 1994; Dawkins & Nelson 2003). Dawkins and Nelson propose two more arguments for state-level growth management programs. These are urban land supplies and consistency. By requirements for adequate levels of urban land supplies in urban growth areas, such as infrastructure, schools and other facilities, transportation and crowding issues can be anticipated. Consistency requirements support consistent application of development policy, which allows for an integrative framework of common goals. Consistency requirements can consist of one or more of the following types. Vertical consistency requires adaptation of state policy goals into local planning efforts as a ways to counter reluctance by local governments to work towards these goals. Horizontal consistency across local boundaries helps to take away local interests at the expense of neighbouring jurisdictions. Finally, internal consistency requirements connect local land use politics to the local comprehensive plan to ensure goal orientation and actual usage of the plan.

The role of state governments in bottom-up planning is in mandating or at least encouraging local governments to make land-use plans. Some state governments have the authority to approve or reject those plans. These have found a complementary role in joining together regional and local growth management plans and state environmental regulation and ensuring intergovernmental plan consistency. These state-sponsored growth management programs have been implemented by Washington State, Georgia, Vermont, New Jersey, Oregon, Florida, Maine and Rhode Island. The latter four states have dominance over local government whereas the other four use a combined model. In these states, the designing of local plans is either enforced or encouraged by offering some technical and financial assistance for planning

and implementation. Sanctioning is another tool for state governments; in extreme cases Florida and Rhode Island state governments can impose plans upon local governments (Gale, 1992).

Working towards an efficient urban form in US cities appears to be a rather tedious and competitive assignment. In most states no well-structured division of tasks exists which leads to a struggle between local and state government over conflicting interests. If local governments will not resign part of their authority, the state will not be able to enforce state-wide programs and pragmatic, short-term and local interest developments will prevail. With the demand for improved land-use increasing and the potential for synergy clearly foreseeable, integrative regional or state-wide planning and consistency is a must to counter the American tragedy of the commons in land-use.

A further investigation into the local effects of growth management in greater Orlando is part of the next chapter on the institutional framework.

6 Analysis of the institutional framework

This chapter gives an overview of the institutional framework that was in place in Florida and the counties around Orlando. The first paragraph is an investigation into the Florida Growth Management Act, which has shaped local planning in the late 20th Century. The second paragraph zooms in on local planning and policy, especially on Orange County, as that is the core county in the region. The final paragraph describes the institutional change that has taken place from the 90s onwards, as negative effects of the GMA and local reactions became apparent.

Growth management in Florida

The Florida growth management program is one of the first and most extensive in the U.S., and "(…) in many ways represents a near perfect version of the planning profession's "comprehensive planning" model." (Chapin et al. 2007, p. 1). The 1985 Growth Management Act (GMA) implemented in Florida was a frontrunner of comprehensive state-level growth management programs in the United States. It was unique by its role for the state government in reviewing and commenting on local comprehensive plans, as oversight responsibility was handed to the Department of Community Affairs (DCA) (Chapin et al. 2007; Nelson and Duncan 1995).

The 1985 GMA followed the 1975 Local Government Comprehensive Planning Act, which decreed adoption of local comprehensive plans. This Act did not require consistency with state or regional plans. It also lacked review mechanisms (Chapin et al. 2007; Orange County Planning Division 2010). The lack of guiding requirements and vertical consistency led to the adoption of the GMA in 1985.

Florida's GMA applied all three advantages of state-level planning described by Dawkins and Nelson and above. Firstly, horizontal, vertical and internal consistency was required, which centralized the intergovernmental planning system. As a result, the DCA had complete authority to approve or disapprove local plans and impose sanctions. If local government plans were insufficient, the DCA could prepare and enforce plans upon the community. In reality, this was more a threat than a course of action (Chapin et al. 2007).

Secondly, concurrency regulations were aimed to control growth and enhance economic development by requiring certain levels of public facilities or as Dawkins and Nelson term it, urban land supplies. Concurrency enabled direction of future development towards areas with adequate facilities to accommodate growth. These requirements had mixed results, which shall be discussed below.

Finally, the GMA incorporated compact development requirements in the 1990s to direct growth and economic activities to urban areas and counter sprawl, as concurrency requirements did not yield the wanted results. Coordinated development had mixed results as well, as it has led to more traffic congestion and has not been able to stop sprawl. However, it has also led to economic development and compact growth (Ben-Zadok 2007).

Concurrency problems

The Florida GMA has been in place from 1985 until 2011 when it was shut down by newly elected governor Rick Scott (Pittman 2011). During that time, it has theoretically been a frontrunner as a comprehensive planning process in the United States. However, as often happens, theory and practice haven't been running parallel resulting in criticism towards the implementation of state planning policies (Pelham 2007). This criticism has often been aimed at the concurrency requirement, which has encountered a number of problems.

Steiner (2007, p 221.) defines the concept: "public facilities and services to support new development should be planned and built

concurrent with the impact of the development". The concurrency requirement contains different types of public facilities infrastructure, but the most important is transportation concurrency. The impact of concurrency comes down to local governments having to develop a comprehensive plan including a plan for capital development which shows that a satisfying level of infrastructure will be available at the time of completion of the development. This plan has to be consistent with the future land use and the transportation or traffic circulation elements in the comprehensive plan (Steiner 2007).

The main problem behind concurrency was a lack of available funds that were needed for transportation improvements and developments. In theory, concurrency would be funded and mandated by the state.

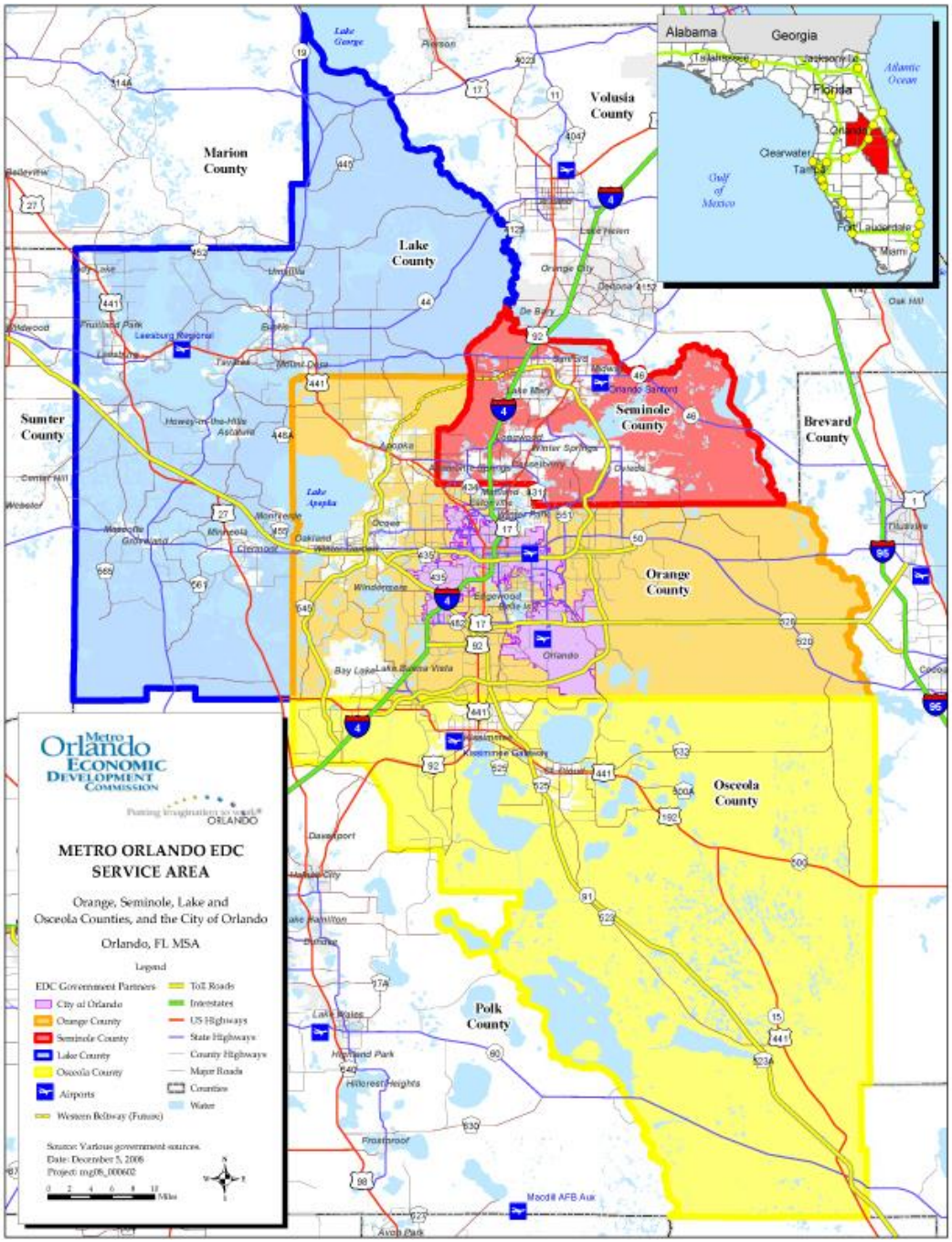
For a number of reasons the anticipated state funding fell to the local governments who in turn directed part of it to developers (Nicholas & Chapin 2007). As a result of the decline of state funding, the state mandate to implement concurrency requirements became weaker. This meant a reduction in intergovernmental consistency as state and regional overlay have lost their connection to local comprehensive plans. Consequently the benefits of these local plans toward state planning objectives have been mediocre (Pelham 2007).

Other problems concurrency has faced are the diversity in situations across Florida for which it is impossible to have one set of requirements, and conflicts between local and state governments over the local transportation system. During the time the GMA has been in place, some changes have been made to the original requirements to allow for local exceptions and exceptions for multimodal transportation, but it seems as though concurrency hasn't been the right tool for late 20th century Florida (Steiner 2007).

Concurrency was originally aimed at restricting unwanted urban growth in favour of a more compact urban form, but due to inappropriate funding concurrency has been a direct cause of sprawl, as growth has had to occur in a leapfrog fashion to places which satisfy the requirements. The GMA has taken away some differences in local regulations which led to unwanted sprawling growth, it has sprouted other regulations which have led to sprawl (Carruthers, Boarnet & McLaughlin 2007). Throughout the GMA period, Florida continued to experience high growth rates and sprawl. Growth management has had a slight impact on the rate of growth, but it has not stopped or limited it (Sanchez & Mandle 2007, Chapin et al. 2007).

Still, the GMA was the state's main safeguard against unwanted growth, which has been slashed by Governor Rick Scott in 2011. The Department of Community Affairs which was responsible for compliance of the GMA was replaced by the Department for Economic Opportunity, aimed at promoting growth. Also in 2011, the governor rejected a $2 billion fund for a Florida high-speed rail project which would connect Tampa, Orlando and Miami. Pittman's (2011) concerns about these growth-focused politics seem highly relevant in light of sprawl problems facing the region.

Evidence that jobs follow people in Florida implies that the state's character as an in-migration area is one of the most important factors for economic growth. That means that rural land preservation and preservation of natural beauty and liveability should be at the core of comprehensive plans. The competition between land preservation and economic growth hence gets an extra dimension as land preservation is a defining factor for economic growth (Carruthers et al. 2007).



Map 1: Metro Orlando. Source: www.orlandoedc.com.

Comprehensive planning in Metro Orlando

Metro Orlando consists of the major cities of Orlando, Sanford and Kissimmee as well as a lot of suburbs and other municipalities. The Metropolitan Statistical Area contains Lake, Orange, Osceola and Seminole Counties (Map 1), with a total population of over 2.1 million. The region is part of the East Central Florida Regional Planning Council. A major partner for regional issues is Polk County, to the southwest. The current population of the seven county region is over 3.8 million and projected to grow to 7.2 million in 2050 (U.S. Census Bureau 2013).

Florida's population is significantly older than the national average, with a median age of 40.7 compared to 37.2. The seven county Orlando regional median age is 39.5, but big differences exist between counties. The median age in Lake, Volusia and Brevard is between 45 and 46, while in other counties the number is under 40. Orange (33.7) and Osceola (35.6) are the low extremes. This difference resembles the image of Volusia, Lake and Brevard as retiree communities, while Orlando and its directly neighbouring counties house the working segment (U.S. Census Bureau 2013).

Orange County

In 1980, Orange County adopted its Growth Management Policy (GMP) to meet the Local Government Comprehensive Planning Act requirements. The core consideration in the GMP was provision of services. The Urban Service Area (USA) boundary was installed to envisage growth areas: within the USA, urban services would be provided in the 20-year planning period. The GMP was updated in 1985 to better accommodate rapid growth by identifying a number of growth areas, such as Disney/International Drive, Orlando International Airport and downtown Orlando (Orange County Planning Division 2010).

In line with the 1985 GMA, Orange County adopted a Comprehensive Policy Plan (CPP) in 1991. Along with the concurrency requirement and other facets of the plan dictated by the GMA, rural settlements were designated to deal with communities that fell outside the USA. Within the Rural Service Area (RSA), agricultural land had to be preserved, while the designated rural settlements were intended to meet the demand for a rural lifestyle (Orange County Planning Division 2012). Annexation by urban municipalities threatened to urbanize these rural areas (Orange County Planning Division 2000).

The CPP and the GMA were intended to counter sprawl and promote infill within urban zones, while preserving agricultural and natural resource areas. By instalment of the USA boundary, the areas in which growth was to concentrate were designated. Through the designation of rural settlements, both agricultural areas and the rural character of these settlements would be protected. The twofold importance of accommodating growth within the USA was emphasized in the 1998 Evaluation and Appraisal Report. Growth had to occur in areas with existing infrastructure both for concurrency and funding considerations, and to preserve environmentally sensitive areas (Orange County Planning Division 2010). Throughout the 1990s, rural settlement preservation prevailed in most cases over development pressure from urban uses. Even close to the urban fringe, although developments with a more urban character are economically viable options, territory in the RSA must retain large lot sizes. Commercial uses were limited to the neighbourhood level (Orange County Planning Division 2000).

State growth management is an example of smart growth policy, aimed at infill, more compact developments and an integration of environment, society and infrastructure into comprehensive plans. Florida's GMA has failed to produce the desired results, as the GMA has failed to solve growth-related problems. It has been an attempt to create a more comprehensive framework for state and regional planning, but has mostly failed to do so (Ingram et al. 2007).

The results of growth management in urban Orange County were 'mixed at best' (Knaap & Song 2005, p. 18). Neighbourhoods have become more regionally isolated, although internal connectivity has grown slightly. Walkability and the degree of mixed-use in neighbourhoods have declined since the installation of the GMA and the Orange County CPP. Neighbourhoods have not been opened up for transit either. Smart growth policies in Florida have therefore not had the desired results, because not all the dimensions have been addressed. Local and regional planning continues to lack a holistic approach (Knaap & Song 2005; Song 2005).

From urban growth boundary to smart growth concepts

As it became apparent that the urban growth boundary did not prevent sprawling growth from occurring, other tools had to be added to the planning toolbox. The Horizon West concept (Micro case 1) was the first example of the usage of public-private partnership to utilize development pressure and create neighbourhoods using concepts from smart growth, New Urbanism and neighbourhood planning.

The USA boundary had to be altered to prevent *leapsprawl* development. Eventually, to counter the negative effects of this leapfrog sprawl, Orange County had to develop the area for tax revenue. A masterplan was created to try and prevent this development from turning into the same sprawl that had characterised growth around Orlando (AA, Barber-Torres & Testerman 2008, Roy 1996).

The USA boundary would be retained as a planning tool, designating boundaries of urban growth, especially on the eastern edge of the greater Orlando region. Orange and Seminole Counties have committed to a strict eastern urban growth boundary. Orange County will not develop east of the Econlockhatchee River. The boundary continues in Seminole County, which has passed a rural area plan prohibiting urban development in the eastern third of the county. In the south, urban growth is limited by Osceola's northeast plan (BB, DD).

Although the boundary did not create the intended neighbourhood forms and density, it had other uses. It limited the intrusion of urban development into the rural and protected natural resources. The designation of rural settlements was intended to retain their rural character and to allow for rural lifestyles in the region. The relevance of these rural settlements as preserved subsystems has changed in two ways since the adoption of the designation. Firstly, the designated areas have proven to be sufficiently large to accommodate rural lifestyles. Secondly, in an urbanised area, the preservation of rural settlements is somewhat counterintuitive and planners should not strive to plan in direct opposition to market forces (Orange County Planning Division 2012).

The awareness of the limited availability of water in the region has prompted an increase of natural resource protection efforts. The zone between the Orlando-Sanford-Kissimmee metropolitan statistical area and the coast is of vital importance in this matter. Already, conflict over supply and use of water is forthcoming between counties. Landowners east of the urban service area are selling to resource management organizations, knowing they will not be able to sell to urban developers (BB, DD).

The Orlando metropolitan area and the counties around it are all but dependent upon motor vehicles for local transportation. As a result, the road network is failing (ECFRPC 2007, Barnett & Dobshinsky 2010). The region's characteristic suburban-type development and projected population growth to 7 million call for a long-term solution. This excerpt from East Central Florida's Comprehensive Economic Development Strategy (CEDS) displays the need for a diversification in transportation methods:

The region's development patterns have exacerbated the problem. This is the typical sequence of events: new homes are built in low cost farmland that was once citrus. Soon there are enough rooftops and the commercial developers follow. Local authorities zone strip-commercial parallel to the major arteries serving the subdivisions. Every commercial entity is given one or two driveways. The vehicle turning movements from these driveways choke the flow of traffic. Soon the two-lane roads with excessive commercial curb cuts must be widened to four lanes, then six, and then in many cases the corridor cannot be widened further (EFCRPC 2007, p.29).

With the concurrency requirements of Florida's GMA, Disney's de facto vetoing of transit initiatives and the sprawling growth of Orlando in mind, this is no surprise. Orlando's major arteries are congested as time-space convergence is in reverse. Due to the many lakes in the area, there is little space for new highways (DD), or, as mentioned in the citation above, no space for widening of road corridors. The cost of supporting the next 40 years of development with road infrastructure is calculated to be about $260 billion (Russel 2011).

Another problem in Orlando, but associated with sprawl in many American cities, is interconnectivity, for which the city became ill-famed through an online article (Schmitt 2013). The article describes two houses with adjacent backyards, but not on the same

street. For one of the residents to get to the other house by car, a seven-mile trip had to be made, exemplifying a lack of connections between different neighbourhoods and suburbs.

The 2006 *Evaluation and Appraisal Report* and the 2009 *Orange County 2030 Comprehensive Plan* reflect the shift towards direct implementation of smart growth concepts in local planning (Orange County Planning Division 2010). County planning has become focused on increasing quality of life, transit viability, and affordable housing, and accommodating future population through infill and redevelopment rather than sprawl. Development should therefore include mixed land-use, transit-supporting high densities, increased connectivity and walkability. Because of the recession, Orange County aims for private investments and public-private partnerships to accomplish smart growth.

This change in approach is congruent with state level reprioritising. State legislation has recognized the need for a connection between land use and transportation planning (Orange County Planning Division 2010). It has also supported environmental sustainability and multimodal transportation.

Growth management and smart growth have been institutional goals in Metro Orlando. As a result, there is more higher-level coordination, rather than emergence of initiatives. The GMA, the urban growth boundary and other tools used by the authorities have not yielded the intended results. That seems to be due to the type of tools used and not the type of results that are hoped for. The next chapter will provide an answer to the subquestion about the peri-urban area in Metro Orlando, based on this and the two preceding chapters.

7 A peri-urban area?

The greater Orlando region transformed from an agricultural economy dominated by citrus into a tourism economy dominated by theme parks and services. This has of course changed the rural-urban continuum considerably. The city of Orlando was a regional centre for citrus distribution. It is now a city dominated by sprawling suburbia, with accompanying problems, such as congestion, threats to the environment and a lack of affordable housing. The rural parts of the region, especially west of Orlando, were the main economic driver in the region until the Second World War. After the 1980s freezes, citrus growing was no longer a good investment in the area, which created development pressure for urban uses of these areas.

One of the research goals for this study has been to find out whether the concept of the peri-urban area could be useful for spatial planning in the greater Orlando area. The expectation, that a peri-urban area with high economic potential existed where high dynamism occurs, followed from European research on peri-urban areas. To test this hypothesis and to explore the rural-urban dynamics around Orlando, the concept of the rural-urban continuum was introduced. This concept is useful to envision the entire rural to urban interface over time and over space. Some interesting conclusions about the characteristics of this rural-urban continuum can be drawn from the research on growth and transition in and around Orlando.

A real peri-urban area does not exist. Through strict boundaries, imposed by local and state level policy, the rural and the urban are strictly separated. Concurrency requirements, Urban Service Area designations and preservation of the rural character make it impossible for rural settlements to grow into urban settlements organically. Therefore, a real peri-urban area, where rural and urban functions meet in a context of high dynamism, lacks. As a result, any transition from rural to urban is imposed. This is best visible in the case of Horizon West. The area was opened up for development in 1995. This development was masterplanned, including concepts of smart growth to create the sought after urban uses (see chapter ten).

The concept of megaregions could be valuable for planning policy in Orlando. The connection with Tampa Bay has already been stressed in the *Connecting for global competitiveness* report (Barnett & Dobshinsky 2010). The megaregion or super region, as this report calls it, is a useful scale for planning, including core and peripheral areas. Within the South Florida megaregion, there exist multiple core areas: Orlando, Tampa Bay, Miami and the Space Coast. These core areas can complement each other.

Part B: Orlando's transition 1940-2000

8 Chronological analysis

Based on Archer 1997; Colburn & DeHaven-Smith 2010; Dickinson 2003; Foglesong 2001; Mormino 1996 & 2007; Patrick & Morris 1967; Rubino & Starnes 2008 and Tebeau 1971.

This chapter gives an overview of the relevant historical context and processes that have shaped the Orlando region. Until the 1940s, Orlando was a part of inland Florida, which, for climatological and locational reasons, was the periphery. Even though many state developments before the 1940s did not particularly affect Orlando, they are relevant to note. The main reason for this is the macro-to-meso relation, which has been discussed before. Orlando is a part of the state of Florida and the South Florida megaregion. Therefore, developments at that scale are relevant for the regional case. Especially considering remote causality, it is important to understand the changing context with respect to service area population, global connections and global as well as national competitiveness. Low-dynamism areas are relevant for complementarity considerations. Orlando's current function as a core area within the South Florida megaregion gives the impression that a move away from the periphery toward the centre has taken place.

Pre-1940: Citrus agriculture

The 1860 population of Florida of about 140.000 consisted of 44% slaves who worked on cotton and sugar plantations in north central Florida. During the Civil War, Florida joined the Confederation. On July 25, 1968 the state was readmitted to the United States. The state was still very much a frontier in the late 19th Century as population was concentrated in the north near the Georgia border.

In the 1880s railroads were built that connected Jacksonville with Pensacola and the Panhandle, Tampa and St. Petersburg and to Daytona. Orlando, incorporated in 1875, was reached by the South Florida Railroad in 1880. The region produced citrus which offered a future for many European immigrants. Citrus production was moved southward to Lake, Orange, Polk and De Soto counties after freezes in the 1895-1896 winter destroyed the groves in northern Florida. To accommodate for the orange plantations, large areas of upland scrub were cleared.

Citrus shaped the greater Orlando region's economy for the next forty years, although the area was also advertised as a holiday destination, offering good health and good weather. Railroad developers built hotels that ignited the first boom of tourism in Florida. The railroads opened up the coasts for migrants. With the advent of knowledge on malaria and its relation to mosquitos as well as progression in air-conditioning, inland Florida became inhabitable as well.

Farmers, elderly, merchants and labourers fuelled the Florida population growth to nearly a million in 1920. The 1920s brought a huge land speculation boom as the car and land reclamation provided even more paradisiacal land on the coast. New towns were planned and populated in no time. During the land boom the Orlando population reached 27.000, while Orange County approached 50.000 by 1930.

In the late twenties, the land bubble burst. Hurricanes and the national depression added to the slump. Florida was able to return to economic prosperity before the rest of the nation due to the large numbers of tourists that kept coming to enjoy the natural beauty and climate of the state. Orlando and its surroundings remained attractive to tourists and migrants. In 1927 the city was connected to the Atlantic Coast Line, aiding the recovery.

As industrial and agricultural production returned to and progressed beyond pre-depression levels, the single most important transformation in Florida was the transformation from a rural state to an urban one. From 27% in 1920, the urban population (living in towns and cities of over 2500 inhabitants) increased to 55% in 1940. Urbanization, transportation, agricultural and industrial technology, education and employment advancement led to what Florida was in 1940: a state with a stable economy and a population of over 1.8 million, visited by about 2.6 million tourists each year. Within Florida, Orlando remained a rural backwater, which had been found by tourists, but not by the masses, yet.

1940-1970: Wartime investments and post-war growth

In 1940-45 a large number of military installations were built in Florida, as the terrain and climate made it a suitable location for training. Other government wartime investments rejuvenated shipbuilding and manufacturing industries, providing employment and economic growth to the state. Investments were accompanied by a technological progress and jobs. Hotels were filled by the military and used as barracks or hospitals.

State population grew to over 2.25 million in 1945, but would expand by another 150% in the next twenty years, making it the tenth most populous state in 1965. Florida welcomed huge numbers of immigrants from the northern states, with a net migration of over a quarter million yearly in the mid to late 1950s.

The state of Florida became known as the Sunshine State and would be a new home for returning soldier's families and elderly people. In large numbers veterans came to Florida, seeking education and bringing with them allowances and loans under the G.I. Bill of Rights. Formally named the Servicemen's Readjustment Act, this bill allowed veterans to go to college and provided them with allowances. Those that did not wish to attend college could take out federal loans to set up farms or other businesses (Roosevelt 1944). These federal funds all seeped through into the Florida economy.

Progressive local leadership

Local businessmen and government officials recognized the regional growth potential. In Orlando, an inland town with an economy based mostly on citrus and warehousing, the local elite was called the 'movers and shakers'. Through their contacts and companies they were powerful lobbyists for and within the city. The local leaders pursued a growth strategy that was based on attracting high-wage manufacturing by securing highway connections. This group of local influentials was led by Billy Dial - attorney to a number of the city's major organizations - and Orlando Sentinel publisher Martin Andersen. Their contacts and the power Andersen could exercise through the Sentinel were vital to Orlando's post-war growth (Foglesong 2001). The 'movers and shakers' secured several vital roads connecting Orlando to both coasts, most notably the S.R. 50 which ran east-west through Orlando as the first bicoastal road in the state and the S.R. 520 which connected Orlando to Cape Canaveral. After successful lobbying for Florida's Turnpike highway and Interstate 4 to run through Orlando, the city gained highway connections to the north and south as well.

The local leaders negotiated other investments to the area as well, aiming for high-technology businesses. In 1956 the Glenn L. Martin Company, a predecessor of Lockheed

Martin, located in Orlando after being attracted to Central Florida by the opening of the missile test centre on Cape Canaveral. Compared to the cape, Orlando had a reduced risk of hurricanes, due to its inland location. The demand for advanced education for Martin Co. engineers fuelled interest in an Orlando university. In 1967, building started on Florida Technological University, which would become the University of Central Florida.

Martin Andersen's connections with president Lyndon Johnson secured Naval Training Center Orlando in 1969 at obsolete Orlando Air Force base (Foglesong 2001). Another Second World War base, McCoy Air Force Base, was opened for commercial flights in 1969 and transferred to the City of Orlando in 1974.

1960s Orlando was booming as the major city near the space coast. Its highways and the airport made it a hub for state transportation and connected the city to other states.

As the U.S. Interstate System progressed, Florida's Turnpike would connect Orlando to the Southwest by I-10 and the Mid-West by I-75. I-4 connected Orlando to Tampa and to I-95 at Daytona Beach, providing access to the entire east coast.

This had been made possible by the efforts of a close-knit group of local leaders whose interests coincided with city interests. As the city grew and diversified, this closed decision-making regime became more difficult to uphold and would eventually pit private corporate interests and public interests against each other.

1970-2000: Walt Disney and the creation of a tourism economy

Greater Orlando was experiencing change on a similar scale to the 1920s boom, but there was still an enormous amount of undeveloped land available, home to citrus growers, cattle and alligators. By 1965, the Disney Co. had secured over 27,000 acres of lakes, swamps and agricultural land in Orange and Osceola counties. Here, they were secretly planning to build a Disneyland for the eastern U.S. market.

The Florida weather enabled year-round service, which had eliminated potential locations near Baltimore and Niagara Falls; Walt Disney did not want a seasonal work force. After talks with St. Louis were aborted, Florida became frontrunner for the new Disney location. To enable expansion in all directions, as well as distinguish the project from seaside resorts, Disney wanted to locate inland. This would allow the company to sustain a perimeter around the project to prevent unwanted developments by competitors.

Orlando had better access than the other possible location, Ocala. The connection to the east coast market through I-4 and I-95 was vital, while the McCoy base offered potential for more flying tourists. Large tracts of undeveloped land were available near a booming city and the Disney Co. liked what they saw.

The offer the Disney Co. made the local legislature in 1967, the year after Walt Disney's death, was too good to turn down. 'The Mouse' was offering to invest $600 million in an Experimental Prototype Community of Tomorrow, Epcot. In return, Disney wanted autonomous control. Disney's bargaining power enabled them to form the Reedy Creek Improvement District, which had powers surpassing those of the City of Orlando. Local legislature had approved based on the premise of a model residential community to be built.

The impact of Walt Disney World

In 1971, Walt Disney World (WDW) opened, but without a model community. The Reedy Creek Improvement District would not have any permanent residents, which allowed Disney to synchronize government and development effectively. Their autonomous status allowed them to implement their own building regulations. The 50,000 tourists that were expected each day, as well as the 50,000

Disney employees needing a home, were bound to cause problems for the neighbouring city, Orlando.

These were not Disney company problems, as they had secured exemption from impact fees. This meant that the company had no financial responsibility for a failing road network, which became congested by Disney customers. Disney had brought employment and tourism, but manufacturing had lost its importance. The Orlando economy would again become dominated by a single product. Citrus had made way for tourism.

The low wage employees at WDW were not what Orlando's boomers had wanted. Planning called for a way of dealing with Disney's impacts, but a lack of funding, political willingness and developmental control tools meant that the city could not keep up. Fragmented landownership and politics, the problems Disney had overcome by secretly buying a vast stretch of land and then gaining autonomy over it, caused more problems for local governments.

Meanwhile, tourism fuelled a hotel boom and was vital for the economic growth of the Orlando downtown Church Street Station area. The enormous growth in population resulted in the development of new residential subdivisions. As enough land was available, these were set up spaciously, with cul-de-sacs and wide access roads. Soon, Orlando began to sprawl heavily.

In 1982, Epcot was opened. It was not the residential community which had secured Disney's power, but a city for tourists. It affirmed Orlando's status as a tourist metropolis. Public adoption of this role was illustrated by the opening of the Orange County Convention Center a year later on an extension of International Drive. I-Drive, as it was called, had been laid out to serve the Hilton Inn Hotel in anticipation of the opening of WDW, but became a major tourist strip, located between Orlando downtown and Disney World.

Changing relations

Changes in Disney leadership and strategy as well as the adoption of Florida's growth management act stressed relations with the community. Michael Eisner, who became the company's chairman in 1984, transformed Disney. Originally a tourist pull for the region inducing growth, WDW was now growing and due to the 1967 Reedy Creek charter, local governments could not manage its growth. Meanwhile, Disney was exempt from transportation impact fees and county building regulations, which gave them a competitive advantage. This was enhanced further by their ability to combine government and development.

In 1989, Disney had nearly $1.4 billion in projects underway, signifying the transformation of its relationship with both the public and private parties in Orlando. Hotels and other services had grown due to Disney's attraction of tourists. As Eisner-era Disney had plunged itself into hotel-building, with another 2,270 rooms under construction, this complementarity became competition. The same happened in retail as Disney built its own shopping plaza, and even the Orange County Convention Center got a Disney competitor.

The Orlando tourism economy and its perceived agglomeration effects had attracted other theme parks, most notably SeaWorld and Universal Studios, which planned a movie-themed park in the area. Universal Studios had to pay impact fees and had to comply with Orlando's regulations. Disney was also planning a movie-themed park, and opened MGM Studios in 1989, thirteen months ahead of Universal. Thirteen months was exactly the time it cost Universal Studios to get its plans permitted.

The theme parks would eventually add competitors to Orlando's downtown, with Downtown Disney and Universal's City Walk. Through Disney's autonomy, they might even add an airport, which would complete their independence. The transformation from co-dependence to independence has been more

controversial for Disney than for Universal, although Universal has constructed its own hotels, too. The impact fees from Universal ensure linkage to the rest of the regional economy, as well as its proximity to I-Drive and non-franchise hotels. The value of these indirect effects from Disney has decreased, while the cost of utilities has increased.

The Mouse's pursuit of independence meant that Disney did not want their customers to leave the premises. Several mass transit initiatives to deal with the transportation issues failed due to lack of cooperation on Disney's side (Foglesong 2001). WDW supported a plan for a light-rail plan to get visitors from the airport to the city, but withdrew their support when a stop at International Drive was proposed, as that would allow tourists to escape from the newly built hotels on the premises to cheaper rooms on I-Drive. Disney's 1967 bargaining power captured in the Reedy Creek charter meant local governments lost out on $17 million a year in impact fees it required to improve infrastructure and public service facilities. As the company pursued more independence, they would actively obstruct potential solutions to the problems it caused to the community, because they were not beneficial to its private interests.

The promised residential community was eventually announced in 1991. Celebration would be built in the Osceola part of Disney's territory, which would be de-annexed from the Reedy Creek Improvement District. This de-annexation was necessary to preserve Disney's powers, as the 1967 charter provided permanent inhabitants with a vote in municipal matters. That concept of building a democratic community was exactly what had created acceptance of Disney's autonomy, but it was clearly impractical for turn-of-the-century Disney World. Their residential community would not be the core of their development, but rather the one part that would not be included within their district.

Is there anything other than tourism?

It cannot be denied that Disney is what fuelled greater Orlando growth and was the driving force in the creation of the theme-park capital of the world. However, Orlando's initial 1960s boom can be attributed to the opening of the Missile Center and local closed decision-making processes which proved to be well-suited to attract public investments, infrastructure and high-tech companies. High-tech manufacturing faded in importance as Disney and the tourist industry bloomed as a result of this boom and a natural and historical potential for tourism in the region.

The tourism economy that has been formed and the complex relationship that exists between Disney and the greater Orlando region have caused problems in the area. Due to Disney's exemption from impact fees and the DRI, the company pays no impact fees, while its pressure on infrastructure and service facilities is enormous and one-sided. Its independence allows for overexploitation of the existing services, without having to worry about the negative consequences, since these have to be mitigated by local governments. This is true for infrastructure as well as for housing and the local economy.

Due to the over-reliance on tourism, Orlando experiences a wage paradox, in which higher employment rates are accompanied by lower average wages. Rising wages would be expected in a diverse economy, due to scarcity. This effect of low-wage job creation is enforced by tourism taxes being reinvested in the sector: expansions of the county convention centre have seen it become one of the largest in the Southeast.

The post-war aim for high wage, high technology manufacturing would indirectly become a decisive factor in Disney's choice for Orlando. Chance and the shared need for transportation allowed tourism to become the major sector in central Florida, rather than high-tech.

The Kennedy Space Center was originally the catalyst for high-tech manufacturing and the

1960s boom in Orlando. The movers and shakers secured a short connection between the city and the cape, which lured the Glenn L. Martin Company to Orlando. It also meant that the new suburbs and exurbs for aerospace employees could and would be located near Orlando.

Yet even before Disney, the space centre had become a tourist attraction with over a million yearly visitors. As Disney World opened, its visitor numbers grew by 30%, suggesting that the Central Florida attractions experience positive agglomeration effects. The Apollo program and, later, the Space Shuttle program, would provide funds for high-tech developments in the region.

The Martin Company, which would merge first with Marietta and later with Lockheed Corporation to form Lockheed Martin, remains a market leader. Other firms would come to the region too, especially in the late ‘70s and the ‘80s. During that period, employment in high-tech manufacturing more than tripled, to 36,000.

Supporting these developments, construction of the Central Florida Research Park (CFRP) started in 1981 adjacent to the University of Central Florida campus. The CFRP hosts the Naval Training Systems Center, which is the major U.S. contracting agency for simulation and training contracts. As a result, many of the nation’s largest defence contractors were drawn to the research park (Braun & McHone 1992).

The simulation and aerospace sectors had resulted from diversification and the lobbying efforts of the movers and shakers in the 1960s. However, high-tech was overshadowed by the enormous investments made by private parties into tourism. Tourism was what drove visitors and migrants to Orlando, and what brought the bulk of tax returns.

This chronological analysis has given insights into Orlando’s transition. World War II brought new structures and diversification from orange groves, but the real driver of post-war growth was immigration. High-tech led this growth, but has been overwhelmed by Walt Disney World and tourism since the 1970s. The multilayered framework will be used to view the transition in a more theoretical light in the next chapter.

9 Transition from citrus growing region to theme park capital of the world

This chapter will analyse spatial change in the greater Orlando region from 1940 to 2000. In this period, the region changed from a rural orange growing area into the theme park capital of the world. Using the multilayered framework and transition theory, this chapter will give an indication of the characteristics of this transformation, answering 'how did Orlando's transition take place?'

First, let us recall the multilayered framework, set out earlier. This framework exists of three levels and three dimensions. The meso level is the greater Orlando region, which is influenced by changes at the macro level. These can be global trends, national regulations and long term changes and state-level legislature or state-wide processes. At the micro level, opportunity for innovation in the form of self-organisation exists. This process, along with co-evolution and path dependency, forges the trajectory of complex adaptive systems.

Another consideration to be addressed is the notion of the greater Orlando region as a city-region with a rural hinterland. The urban and the rural area are in this case very black and white, as has been described in chapters five and seven. The megaregion concept implies complementarity of the rural and the urban, resulting in a necessity to view the entire rural-urban continuum around Orlando as the meso level and not just the city of Orlando. That city-region is part of the Southern Florida megaregion and is closely connected to the city-regions of Tampa Bay and Miami.

The starting point in this analysis is Orlando before World War II. As a result of late 19th Century developments in health sciences and air-conditioning, railroad connections, and heavy freezes, the region was formed as a relevant economic entity. The core economic activity was citrus growing, which would remain important until after the Second World War. The region existed of swamps, scrubland turned into orange groves, cattle pastures and urban settlements which had grown as a result of the 1920s land boom. Tourism in Florida had become an important sector, too, especially in mitigating effects of the Great Depression. Central Florida was not one of the major touristic areas, but enjoyed its share.

The period in which Greater Orlando has transformed from an agricultural region built around citrus into the theme park capital of the world is broadly 1940-2000. The regional economy used to be dependent on the weather and macro trends in science and orange juice sales. This has turned into a self-reinforcing low-wage economy, which functions as an international tourist magnet. The region has lost its function of providing agricultural produce, replacing this with the provision of 'a magical experience', as Disney World would state it. Confirming to transition theory, this is a change in both function and structure. Therefore, using the multilayered framework, this analysis shall divide the transformation into smaller time periods, which coincide broadly with stages in the transition.

Predevelopment

The predevelopment phase starts in the Second World War, when macro changes in political relations trigger the U.S. government to start investing heavily into military training facilities. Florida's climate and natural features are suited for military training, which attracts these investments. These investments and the people they brought with them increased dynamism and functioned as a push factor away from relative stability.

The aftermath of the war yielded a number of co-evolving processes which enforced the push away from stability. Firstly, something

had to be done with the military training facilities. Although some were kept in their old function and some were shut down, one was of particular importance for Orlando. The creation of a missile test centre at Cape Canaveral was a government-led emergence, but it was created here because of a suitable location of a former training facility. Since this was a result of path dependence and macro level changes, such as the proceedings in the Cold War; this development has non-linear characteristics.

The second relevant outcome of the war was a change in Florida's image. Although the state had always welcomed tourists, military personnel and seasonal workers had experienced Florida in much higher numbers. The state became well-known to Americans and the plans to return to Florida were not holiday plans. Post-war Americans migrated to Florida in large numbers. The last factor that enforced a push away from Florida's agricultural function was the G.I. Bill of Rights. Through this bill, veterans coming to Florida brought with them government funding and had an opportunity to get educated. Through the G.I. Bill and a general increase in wealth in the United States, the option for migration was available to so many Americans.

In the forties and fifties, central Florida's stability was disturbed through the interplay of localised investments, regional migration trends, institutional change and an increase in wealth. However, most of these characteristics were apparent in entire Florida. Through path dependence, Orlando was not a prime candidate for enormous growth.

Take-off

Orlando owes it largely to a group of decisive local leaders that the city has been able to reap the benefits of Florida's post-war boom. The political system allowed these 'movers and shakers' to pursue their plans for the city. That flexibility was required for self-organisation of a group of lobbyists, whose personal goals were aligned with Orlando's potential to benefit from Cape Canaveral and high growth in Florida. Aiming for city growth through high-wage manufacturing jobs and improved infrastructure connections, the local leaders lobbied successfully for the Glenn L. Martin Company and the routing of I-75 and the Florida Turnpike by Orlando. It is important to recall that these leaders operated for personal profit as they were mostly local businessmen. Therefore, these successes can be contributed to market context, although the institutional structure was enabling.

At the micro level, the Martin Co. and later the Naval Training Centre were the major successes with regard to high-tech job growth. On the meso level, the highway connections to the other states were essential to Orlando's take-off. Other government investments continued to grow as well, as these tried to keep up with population growth in Florida. One of the results of these macro trends is the establishment of the University of Central Florida. Path dependence is visible from the re-use of McCoy Air Force Base as a commercial airport, as well as from the potential for high-tech job growth created by the proximity of Cape Canaveral. In the 1960s, the self-organisation that reacted to macro trends managed to attract growth to the region and by doing so, solidified the take-off.

The tipping point: Disney

The complexity of regional systems does not allow for precise delineations of periods within a transition. In the Orlando case, it is apparent that the Second World War was the starting point of the predevelopment phase, but the take-off phase is somewhat more difficult to define. The tipping point in a transition is a highly theoretical point, which occurs where dynamism is at its highest, but is hard if not impossible to really describe. It is however, a point with high symbolism, as it is at this hypothetical moment that fragmentation and instability turn into clustering and integration toward new structures and functions. Regarding the opening of Walt Disney World in 1971 as the tipping point expresses this symbolism. Walt Disney World was a remotely

causal reaction to the dynamism that characterised 1960s Orlando and macro trends, such as an increase in wealth and vacationing. The confluence of climate, free developable land, progressive leadership, an infrastructure node, and urban growth was essential in the choice for Orlando. Before Disney, the region was diversifying, growing excessively but with high uncertainty about the future. After Disney, Orlando became the theme park capital of the world, with a very one-dimensional economy formed around tourism.

Acceleration

During the '70s and '80s, the high-tech sector kept growing, and has remained a strong sector since. However, high-tech job growth has been overwhelmed by the low-wage economy fuelled by theme parks. As more theme parks were opened in the region, supporting tourist facilities such as hotels and shopping malls and outlets were built as well. Eventually, Orlando's facilities for welcoming guests were large enough to support a huge convention centre. Disney had taken the path toward autonomy, opening up its own hotels and competing with Orange county with shopping malls and an own convention centre. Throughout the nineties, both Disney and its adversaries added theme parks and hotels. Immigration supplied low wage workers to the region. In 1985, the Growth Management Act took effect, to centralize the planning system through horizontal, vertical en internal consistency. The GMA's main goal was directing growth into areas with adequate facilities.

The acceleration phase in the transition of Orlando can be simplified into three conflicts. The functional conflict between tourism and high-tech as leading sector; the institutional conflict between the GMA and development pressures; and the organisational conflict between governmental and market actors.

These three conflicts are highly interrelated and apparent at multiple scales. Characteristics and location of rural to urban development, and development pressure, are related to the functional conflict. Meanwhile, institutional conditions can be influenced by the organisational conflict as well, since local governments will have to give in at least partially to development pressures. From the forces mass tourism has brought with it, it is clear that governments do not have the power to channel developments according to their own wishes. From the institutional conflict, it is clear how different scales can interact, since the GMA is a macro level institutional overlay, while development pressures are highly localised. The result is adaptation at the meso level, as county and municipality governments have to be flexible with regard to local developments, while attempting to plan comprehensively and with a notion of growth management.

Stabilisation

In the '90s, the three conflicts mentioned above have stabilised. Tourism has clearly outcompeted high-tech as the main sector. As a result of the self-enforcing effects of the tourism economy, the population has continued to grow, but job growth has mainly been in low wage jobs. Development pressure has often defined new growth locations, especially since local governments have started to plan more with the market. This is shown by the Horizon West area, which has been opened up for development due to unwanted side-effects of the combination of the GMA and development pressure in the western part of the Orlando region.

The organisational conflict has become a demand and supply environment. City and county governments in Orlando attempt to attract as many visitors as possible, while the theme parks do the same for their 'downtowns' and Disney for its convention centre, too. The conflict has not been resolved, only stabilised, which means that Disney is still an autonomous actor. Since some cooperation is required for better infrastructure and especially public transportation, these issues have not been dealt with.

Summary

The predevelopment phase started with the commencement of the Second World War. Wartime investments would have direct and indirect consequences for entire Florida. In the 1950s mass immigration, progressive local leadership and aerospace investments were among the factors contributing to Orlando's lift-off. High-tech led in the take-off phase, but 1971 proved to be a tipping point through the opening of Walt Disney World. Consequently, the region accelerated toward a tourism-based economy, with the opening of convention centres, theme parks and hotels. This has led to three conflicts, in which the relationships have stabilised somewhat towards the end of the century.

Part C: Micro cases

10 Micro cases

These micro cases help to create a better understanding of change characteristics in greater Orlando. The three cases are about Horizon West in west Orange County; Lake Nona Medical City in south-east Orange County; and public transportation in greater Orlando. In the mid-1990s, Horizon West was designated as a special planning area within Orange County. The area plan was the first sector plan adopted in Florida, it was seen as an innovative way to develop greenfields in the state. Lake Nona Medical City is a cluster of biomedical sciences which is expected to be the major driver of growth in the region in the next decades. Public transportation is an interesting issue, since it has been very difficult to get this running in Orlando and, although its necessity is recognised, results and forecasts are disappointing.

Micro Case 1: Horizon West

The confluence of two developments at this location was critical for the emergence of the village concept as a development model for Horizon West. The first development has to do with the dominant spatial form in Orlando, the second with local changes in function.

Changing function

Orlando grew into a tourism metropolis in the 1970s and 1980s. The city's identity and function was changing rapidly, but rural parts of Orange County continued to produce citrus. This changed in the 1980s as, first in 1983 and subsequently in 1985 and 1989, freezes killed the orange trees. The area directly north of the Reedy Creek district in west Orange County was hit hard as a result. Citrus growing had been a profitable business in the area, and the economic opportunity functioned as a growth management tool. Despite the proximity of Disney World, the orange groves were accompanied by low-density developments (Miller-Sellen Associates 1995). The freezes showed the vulnerability of citrus growing, which was subsequently moved to South Florida.

With the demise of citrus groves in west Orange County and the adjacent areas of Lake, Polk and Osceola Counties, natural growth management (by economic opportunity) lost its driver. In essence, the area was now opened up for lternative development. Due to the largest employer in the region located next door, suburban and tourist-related development pressure was high (Barber-Torres & Testerman 2006). Because of a misconception about the economic opportunity of the area (Orange County Planning Division 2000), west Orange county was designated for future land use of 1 dwelling unit per 10 acres. This low density had crucial consequences for regional sprawl developments and local opportunity. Firstly, due to higher allowed densities in adjacent counties, development pressure in the area resulted in leapfrog development in south Lake County and other areas which were further from the generators of employment and growth. Secondly, the Horizon West area was not included in comprehensive plans as a potential growth area. Finally, due to its designation, there were few economic opportunities for land owners in the area after the freezes (AA, Miller-Sellen Associates 1995). This is a clear example of failing growth management tools, due to a lack of regional cooperation and coordination.

Sprawl

Growth management was failing to cater for compact growth in other parts of Orange County, as a result of adverse effects of, among others, the concurrency requirement (see chapter five). The availability of inexpensive land and the desire for car accessibility had led to sprawling growth. Car-dependent neighbourhoods without interconnectivity, sense of community and mixed-use zones were the norm. The Florida GMA and the Orange County Comprehensive Plan were unable to change these growth patterns. It dawned on local planners that further growth had to be channelled differently, so as to produce supporting structures for the growing economy (Miller-Sellen Associates 1995).

Horizon West sector plan

The way in which growth management and development regulations were set up had created a system of "piecemeal planning", whereby each development proposal was handled individually. As a result, there was no integration of plans and no efforts toward a more sustainable type of growth. In the mid-1990s, these considerations led to a new approach to growth management. New developments were to be more compact, interconnected and pedestrian-oriented. Other considerations within this new approach were mixed-use, integration of public transit and involvement of inhabitants. By using these new urbanist and neighbourhood planning concepts, further suburban sprawl had to be prevented (Miller-Sellen Associates 1995; Barber-Torres & Testerman 2006).

Changing economic opportunity and growing concerns about the future of Horizon West led to the formation of the Horizon West, Inc. cooperation between property owners, including the Walt Disney Company. Their efforts to develop a masterplanned community evolved into a public-private partnership with the Orange County government (Roy 1996). The area's potential for growth was finally recognized, due to its proximity to Orlando's major employment cluster at I-Drive and WDW. Niche empowerment was backed legally as framework policies for the Village Land Use Classification were adopted. This classification was the result of the local visioning process, suggested as the alternative for piecemeal planning to discourage sprawl (Miller-Sellen Associates 1995; Nieves-Ruiz et al. 2012).

The sector plan for Horizon West was the first in the state, proposing smart growth developments in the area. The objective of the Village Land Use Classification is given by Miller-Sellen Associates (1995, p. 5)

Orange County shall utilize a Village Land Use Classification to realize the long range planning vision for west Orange County created through the Horizon West planning process. The Village Land Use Classification has been designed to overcome the problems associated with and provide a meaningful alternative to the leap-frog pattern of sprawl now occurring in western Orange and eastern Lake County; create a better jobs/housing balance between the large concentration of employment in the tourism industry and the surrounding land uses; create a land use pattern that will reduce reliance on the automobile by allowing a greater variety of land uses closer to work and home; and, replace piecemeal planning that reacts to development on a project by project basis with a long range vision that uses the Village as the building block to allow the transition of this portion of Orange County from Rural to Urban Use through a specific planning process that utilizes a creative design approach to address regional, environmental, transportation, and housing issues.

The plan envisioned a development pattern with villages and large preservation areas. Public/private partnerships and landowner cooperation were intended to provide amenities and infrastructure. The attempted transition from rural to urban in Horizon West is government-induced. The area was part of the Rural Service Area and therefore protected from urban land uses by the Orange County Comprehensive Policy Plan. The arguments set out above have opened up Horizon West for urbanisation by changing its

future land use classification and including it in the Urban Service Area (Orange County Planning Division 2000). Rather than a gradual change toward urbanisation, in which a potential-rich peri-urban character could be created, the transition envisioned is black and white: Horizon West is rural and would become urban.

Results

Horizon West developments have not yielded the anticipated results. Commercial uses have been located on the main arteries, rather than into neighbourhoods. The land use and design standard that were part of the sector plan have not been implemented in the way that was envisioned. Funding and cooperation among landowners and developers have been scarce. Lots of roads lead to nowhere as the subdivisions have not been developed. The village type of settlement has not been created. Lots of these problems with Horizon West development have been a result of failure to enforce the sector plan. Because the effectuation of the sector plan has not been comprehensive and in line with its goals, these goals have not been reached. Rather, because of loosening of restrictions, much of the Horizon West developments have resembled other exurban developments in the county (Nieves-Ruiz et al. 2012).

The development pressure and potential in Horizon West have not resulted in smart growth. Reasons range from a lack of foresight and oversight to failure to secure financial support for developments (Barber-Torres & Testerman 2006). The planning and development process was still led from above, rather than by internal and external market conditions. Consequently, the area has not grown organically, which has resulted in a lack of internal supporting structures (Nieves-Ruiz et al. 2012). A growth catalyst is required to achieve the internal dynamics needed for organic growth (AA, BB). However, due to the Lake Nona developments in south-eastern Orange County, the chances of a large employer locating in Horizon West have diminished. This means that the area will remain an exurb, lacking supporting structures, and that the car will remain important and there will be a lot of commutes to other parts of the county (Nieves-Ruiz et al. 2012, AA, BB, CC, DD).

Micro case 2: Lake Nona

In 2003, then Florida Governor Jeb Bush initiated a process of courting large biomedical companies to locate in Florida. Government funding was available to attract high-paying jobs to the state. Orlando missed out on the Scripps Research Institute because the city lacked a medical school and other supporting institutions (Vatner 2010).

Orlando officials felt a need to diversify, to create a new economic engine that would generate high-wage jobs (Dyer 2010, 2012). When the Scripps Institute decided to locate in South Florida, those officials did not leave it at that. In 2006 the first commitments had been made to the Lake Nona Medical City, by four major tenants. In 2009, the University of Central Florida College of Medicine opened, as well as the Sanford-Burnham Medical Research Institute. The University of Florida has opened a research centre. The other major tenants are a Valencia Community College campus, a Veterans Affairs Medical Center and the Nemours Children's Clinic. To accommodate employees and families, a residential community is planned with high technology homes (Dyer 2012; learnlakenona 2013; UCF 2012).

Banking on innovation and multiplier effects from a biomedical cluster, the Lake Nona website states:

Based on the proven theory that a cluster of healthcare and bioscience facilities in proximity to one another will accelerate innovation, this intellectual hub opened in a coordinated fashion with a collaborative mission. In the next decade, Lake Nona Medical City will be home to some of the nation's top hospitals, universities, research institutions and life science companies. But already, the Medical City's pioneering institutions are forming networks and synergies making Orlando a global destination for health care, research and

medical education while creating an economic development and job creation engine for the region. (learnlakenona 2013)

Lake Nona's impacts are expected to be twofold. Firstly, the Medical City is expected to diversify Orlando's economy. High-tech sectors such as simulation, aerospace and digital media have existed alongside the tourism industry, but have not managed to have the same influence in the region. Lake Nona Medical City is expected to have the same impact as Walt Disney World in the 1970s, but in a shorter time period, due to supporting structures for growth already being present (BB, DD). This growth is expected to change the entire Orlando region, but the Medical City has local impacts, too. Through clustering and mixed-use zones, the master plan for Lake Nona includes high-tech facilities supporting current and future doctors and scientists. The surrounding areas are planned to lure the creative class and medical professionals to Orlando (Dyer 2012; ECFRPC 2007; learnlakenona 2013).

In short, Orlando officials hope to create a biomedical cluster in Southeast Orlando that should heighten the region's resilience by adding high-wage jobs and a new sector to the economy. The total expected economic impact exceeds $7.5 billion (Dyer 2012; Vatner 2010). Through agglomeration effects and regional multipliers, the entire economy is expected to be strengthened by this growth, leading to a relaxation of the stranglehold of tourism on the city.

With Lake Nona Medical City, an attempt is made to initiate compact developments with a holistic approach. Such an approach should include density, interconnectivity, mixed-use, accessibility and walkability. Yet, currently, there is no market for high density housing (AA). Nodes of high density are required to achieve the five dwelling units per acre needed for a viable public transit system, or the eight dwellings per acre typical of compact residential neighbourhoods. The Orange County planning department is aware of the disparity in current individual requirements for housing and the long-term necessity to change the type of development. The Lake Nona area is essentially a prime location for transit due to potential connections to the airport as well as a concentration of jobs. Anticipating a change in the housing market as well as the expected growth of Lake Nona, Orange County is trying to persuade developers to postpone their efforts at the suggested high density nodes.

Micro case 3: Public transportation

The Lake Nona project had a very particular actor environment, with both market and government parties interested, while the prospect of rising land prices was attractive to local landowners and residents. This alignment of the three groups of actors is obviously preferable, but rare. The problems involved with setting up a public transport system in Orlando are exemplary. Early light-rail initiatives were backed by government and the ridership tourism would provide. Most of the tourist services were on board, too, but for Disney, as they vetoed a plan that would connect their hotel empire to the Orlando hotel market. Newer plans were borne from the growing necessity to find alternative transportation methods. The Florida High Speed Rail program, which would connect Tampa and Orlando, with a second phase to Miami, secured significant grants, comprising $2 billion, from the federal government (Dorsett 2010). This was a result of combined efforts from myregion.org and local authorities as they were faced with the future costs of a highway system supporting the expected growth (Russel 2011). In 2011, Governor Rick Scott turned down the grants and repealed the plans for the rail system, stating that the risks outweighed the benefits. The risks being that the project's additional costs would burden the taxpayer excessively (Cox 2011; Peltier 2011). This reasoning is flawed, since the report on that risk does not mention the costs of not having a railway system. It seems that the real reason for turning down the program is the risk of losing

votes, as many Floridians are not ready to pay for and make use of a railway system.

The public reluctance to support rail transit returns in other projects, too. The All Aboard Florida (AAF) project is set to fill in the void left by the high speed rail program, as it plans to run a privately funded service from Miami to Orlando. The main concern is ridership, as the service will have to be genuinely better than a car trip to persuade Floridians to leave their car behind. To succeed, the project will also require a good connection to the SunRail commuter train in downtown Orlando at the airport, which would be the end station for AAF (Anonymous 2012-1, 2012-2, GOAA 2012). SunRail will start service in 2014, connecting Debary in west Volusia County to Sand Lake Road in Orange County, going through, among others, Sanford and Orlando's downtowns. Eventually, the northern end will be DeLand, with the southern track reaching into Osceola County. The station at Sand Lake Road should offer connections to Orlando International Airport and the tourist activities on International Drive in the future (SunRail 2013). These rail developments are in line with the smart growth and anticipatory planning in the region and they are useful for local business. Expected users will still have to accept multimodal and non-automobile transport, which might take a generation, according to local planners (BB, DD).

Summary

These micro cases have shown that there is potential in the region. The Horizon West area opened up for higher density development after the demise of orange groves, Lake Nona boasts an impressive cluster in biomedical sciences and there are opportunities to diversify the transport system.

On the other hand, each case shows that the potential and the emergent niches are finding obstruction in the institutional framework. The eventual projects have top-down characteristics and lack coordination. That is most clearly shown by the negative effects the Lake Nona developments have had on the Horizon West area.

Part D: The current situation: at the start of a new transition?

11 Recent developments

Parts A and B have dealt with the transition from citrus agriculture to theme parks and tourism as Orlando's core economical sector. In the 2000s, some stabilisation has been noted, but there have also been new developments, which suggest that a new transition might be taking off. This chapter and the next attempt to find an answer to the question 'in what transition phase is Orland currently?'

By creating a self-enforcing low wage tourism economy, theme parks had dominated the formation and reformation of the organisational and functional dimension in Metro Orlando. The institutional dimension however, was still unstable, as described in part A of this study. The GMA did not yield expected results and smart growth was not occurring, which led to continuation of problems concerning sprawl.

In the early 2000s, new actors came to the scene, with visions for a different future. This chapter handles the new actors and visions that were introduced into the system.

Alternative futures

The new approach to neighbourhoods and urban growth is backed by changes in the actor-network and institutional changes in the greater Orlando region. In 2001 MyRegion.org was created to assemble leaders from seven counties and 86 cities in the region. The counties are those in the East Central Florida Regional Planning Council and Polk County. The organization shows a slight bias towards the Orlando metropolitan area in its attempts to create a regional vision, image and plan. Its main focus is on issues that require a regional overlay as cities and the countryside get more interconnected and city and county boundaries become obstructions to planning. With a healthy interest in the future of Central Florida, the organization attempts to plan for global competitiveness, while maintaining a high standard of living. Within that vision, a regional water management strategy, smart growth, transportation planning, education and environmental issues play a vital role to accompany efforts towards global competitiveness and business growth in Central Florida. (myregion.org 2013, Peckett & Lyons 2011).

The need for an *Alternative Future* for the region is evident from current issues and has been anticipated in various studies and visions. Planning for 2050 has become a core motive in Central Florida as the Alternative Futures studies from the University of Pennsylvania (Barnett 2005; Barnett & Dobshinsky 2010) and myregion.org's 'How shall we grow?' Central Florida Regional Growth Vision (myregion.org 2007). The metropolitan planning organisation for Orange, Seminole and Lake Counties was reorganised in 1997 and renamed to MetroPlan Orlando. The organisation has since focussed its efforts on transportation planning. The Long Range Transportation Plan for 2030 aims for multimodal transportation through better and more transit options (MetroPlan Orlando 2013). It seems local actors are realising that if development continues in its current manner, the expected doubling of the region's population will cause the loss of natural resources and global

competitiveness as well as an increase in congestion and service costs.

With the 2010 study 'Connecting for global competitiveness' (Barnett & Dobshinsky 2010), the megaregion concept has been embraced. Central Florida and Tampa Bay are dealing with similar issues: congestion, environmental threats, sprawl and expected growth. By cooperating, an alternative to the current trend can be achieved, and the Super Region can be globally competitive.

High-tech

In the early 2000s, aerospace technology has been declining as an economic factor, as Florida has not kept up with other locations where commercial spaceports have been developed by companies such as Virgin Galactic and SpaceX. In 2006, Space Florida was created to re-establish Florida's leading role in aerospace. Employment in the industry has risen steeply since the 2005 low point (myregion.org 2009). After the NASA space shuttle program was ended in 2011, Space Florida has been actively acquiring land to enable commercial space flight at Cape Canaveral (Klotz 2012).

Launched in 1987, the Florida High Tech Corridor Council (FHTCC) is a partnership of three universities, 23 counties and numerous companies, colleges, business incubation programs and economic development organizations. The corridor stretches from coast to coast and includes the Tampa Bay area, Orlando and the Space Coast.

The greater Orlando area is at the core of the corridor, with UCF and 5 out of 13 technology incubators located here. The area hosts the largest cluster of industry organizations in the corridor as well, and is home to organizations such as the Florida Business Incubation Association; the Digital Media Alliance Florida and the Armed Forces Communications and Electronics Association.

The main high-tech sectors in the Orlando area are Aerospace; Modelling, Simulation & Training; Optics & Photonics; and Digital Media, which has enjoyed technological overspill from the entertainment and creative industries. The FHTCC was ranked as fourth top technology region in the U.S (FHTCC 2013-1, 2013-2).

Biomedical sciences

Life sciences and healthcare has been a growing sector throughout the past decade. Central Florida has been a location for those seeking a temperate climate to grow older for decades, but after the growth of Orlando's convention centres, medical professionals have come to the region, too (Vatner 2010). Orlando's regional leadership in healthcare, high-tech and growth called for more medical research.

Lake Nona Medical City is being developed near Orlando International Airport southeast of the city. A result of public-private cooperation, local leaders are optimistic about the effects of the medical city on Orlando, estimating over $7,5 billion in annual economic impact. Local leaders cooperated to get the Sanford-Burnham Institute to Orlando after the Scripps Research Institute decided to locate their eastern facility in South Florida, due to the lack of a medical school in the city. Lake Nona can be seen as the contemporary, governmental counterpart of the Disney arrival some 35 years before. The investments in high-tech and healthcare research reflect the growing local awareness for the future of the city (Dyer 2012, 2013; Vatner 2010).

The next wave of growth, based on biomedical and other high-tech research is thought to be the catalyst for the same scale of change that Disney and the tourism industry have brought. Local actors look toward San Diego for an example of a major biotech cluster which was formed in the past thirty-odd years. The expectation is that Orlando will need only half the time, due to the infrastructure already being in place (BB).

Myregion.org

To handle the expected population growth for 2050, leaders in the region are cooperating in myregion.org. Their action plan for the seven

county region is based on 4 C's; Conservation, Countryside, Centers and Corridors. The *How shall we grow?* Regional vision and the *alternative futures* reports aim for divergence of the current trend path. That trend is characterized by the lack of transit, fragmentation of assets and sprawling, low-density development (myregion.org 2007; Barnett 2005). Through interconnected efforts on the four C's, the following are the most important elements in the vision:

- Preserve the most sensitive environmental lands and waters.
- Avoid continued sprawl.
- Promote more growth in urban centres.
- Connect higher density, mixed-use urban centres with multimodal transportation corridors served by new transit lines.
- Preserve countryside.

The implementation of the Regional Vision is part of the East Central Florida Comprehensive Development Strategy (ECFRPC 2007, p. 5). This intergovernmental partnership has come to the forefront in the 2000s as a result for a call for regional comprehensive planning. An important goal for the Regional Planning Council is for the region to be globally competitive.

Conservation efforts will be focused on acquiring land to create a network of environmentally sensitive and important areas. This network is of importance for wildlife as well as recreation, but its major goal is to keep urban developments and natural resources separated. Agriculture plays a vital role as it requires and uses available natural resources. Sustainable agriculture is therefore encouraged. Another central theme is water. Expectation is that water will become scarce. A regional water resources plan should help with providing sufficient water for new developments. Countering sprawl and preserving valuable natural land go hand in hand. To avoid sprawl, higher densities will have to be reached.

Transportation is an important facet in the regional growth vision, both internally and as a connector between the metropolitan areas of Orlando-Sanford-Kissimmee and Tampa Bay. While the recession has hit many sectors in the region, such as building and construction, both the tourism and the biomedical sector have grown. Tourism took over some of the lost employment in other sectors, while Lake Nona created growth in the biomedical sector. The disparity between local workforce education and requirements in the high-tech sector means that the new jobs in high-tech will rarely be filled by locals who lost their job in the recession (Stratton 2013). Change might be on the horizon, but it will surely be a struggle.

12 The current transition phase

A new transition might be taking off in Orlando. With an existing sector of high-technology, as well as a growing and ageing population, the biomedical sciences sector has a raison d'être in the region. It is also wanted as a diversification from tourism is thought to be essential for Orlando's future. In terms of regime theory, the current regime is tourism, while the biomedical niche is starting to be empowered, and might be challenging the regime in the near future. With regards to transition theory, Metro Orlando could be in the predevelopment phase of a new transition.

Disconnected developments

However, the current approach to the future lacks integration of plans, and lacks an awareness of the non-linear character of development. The lack of a holistic approach to regional growth has resulted in disconnected efforts. Horizon West has been masterplanned, then left to market dynamics. By starting the development of Lake Nona Medical City a decade later, Horizon West has struggled to succeed. Previously, the GMA and the concurrency requirement did not result in a restriction of sprawl, but led to leapsprawl and other unwanted results. The introduction of smart growth concepts in new developments has been a localized effort.

Disconnectedness of developments is a problem in the greater Orlando area. County and municipality boundaries are cause for regional competition, not cooperation. The institutional context, mostly the designation of the USA, but the property tax system likewise, has also fuelled disconnectedness.

Part of this disconnectedness can be retraced to the fragmented institutional system. The region is divided into counties, which compete for developments, rather than cooperate. This is partially a result of the property tax system, through which counties are incentivized to develop lands into non-agricultural uses. Within the counties, there exist multiple municipalities, which have a similar competitive relationship with each other and similar incentives to develop. Another cause for disconnectedness stems from the relation between the county and its municipalities. If a county develops successfully, these new subdivisions will become urban and might be incorporated. Hence, counties do not get the full credit, nor can they control the entire urbanisation process. This influences the decisions they make concerning short-term and long-term goals.

Although Florida's GMA required comprehensive plans to be made, the CPP has not led to more integration of issues in Orange County. Rather, the rigid preservation of rural settlements and the Urban Service Area led to isolation of areas. Another result was the designation of future land use, which led to potential for short-term gains. These are very localized and led to disintegration of space: landowners generally want the best possible return on their property. This led to disconnectedness, where higher-level market processes might have incurred a more integrated evolution in the region.

Property taxes for agricultural land are low, which leads to speculation with these lands that are within the USA. Their designation as future urban growth locations increases their value, but by herding cows, these lands are taxed as agricultural property. Hence, costs are low, and landowners can wait for a lucrative development plan. The power they can exert as a result is not supportive of long-term integrative goals.

Visions for 2050

In the new millennium, more integrated visions have been forged. This is a positive evolution, which has been supported by both public and private organisations. These visions aim for long-term sustainability and economic competitiveness and recognize the need for integrative efforts. The incorporation of these visions into policy and policy development at a regional level have been valuable results. Most notable in this respect is the incorporation of the Regional Growth Vision (myregion.org 2007) into the East Central Florida Regional Economic Development Strategy (ECFRPC 2007). On the other hand, the Florida GMA has been shut down. Although that did not have the desired results, it did provide a state-level framework for comprehensive planning. It remains to be seen how market and institutional changes will react to each other.

13 Conclusion

This chapter summarises six results or conclusions from the multilayered study of Metro Orlando on the interplay of the macro, meso and micro level in the functional, organisational and institutional dimension.

1. Transition from agriculture to tourism

This study has shown that Metro Orlando is a complex adaptive system, with continuous coevolution, selforganisation and path dependence. The start of its transition from a citrus growing region to theme park metropolis can be retraced to military investments and local progressive leadership. Through remote causality, Walt Disney World was the tipping point, after which the region converged to a tourism economy.

2. The institutional framework has been an obstruction to non-linear change

Due to jurisdictional fragmentation, uncoordinated efforts and top-down policies, the institutional framework has not been able to support autonomous emergence of structures and co-evolution. Rather, certain tools that have been used by authorities, roughly since the eighties, have worked as a restraint to selforganisation.

3. No peri-urban area

The peri-urban area around Orlando is institutionally disbanded, as the rural and urban characters of settlements are strictly preserved. Hence, the peri-urban, as a zone of competition and complementarity, where high and low dynamism congregate, does not exist. A transition from rural to urban was envisioned for Horizon West, but not as interplay of high and low dynamism. The development did not result from emergent structures, but from higher-level coordination.

4. No holistic approach

The region has lacked real integrated efforts in planning. Although the GMA and local plans have been initiated as comprehensive planning policies, these have not produced region-wide results or smart growth. The lack of a holistic approach has been shown to lead to competition within the region, in particular between the planning districts of Horizon West and Lake Nona, but also between the rural and the urban, between governmental and corporate organisations and between municipalities.

5. Lake Nona and the biomedical sector have potential, if approached differently

The current developments in the Lake Nona area are a step in the right direction, as the biomedical sector is viable and could provide more valuable growth patterns as well as more integrated efforts in planning. Diversification is required to ensure continuing robustness and flexibility. However, Lake Nona Medical City is the result of localised efforts by county planners, rather than a comprehensive regional plan. The project has had negative consequences for Horizon West developments, leading to competition rather than complementarity. Lake Nona also lacks metaphorical as well as tangible connections to the other parts of the system.

6. Visions for a holistic approach are gaining ground

A change in approach might be close, as can be told from the visions that have been published and changes in the organisational and institutional dimensions that have been taking place. The alternative future as envisioned by regional partnerships should be

approached holistically. Rather than singular efforts, the future must be approached with broader goals and at the regional scale. The visions are being more and more incorporated into policy, but the Lake Nona case shows that, in practice, there is no holistic approach yet.

Policy recommendation

Considering the answer to the main research question 'what are the characteristics of spatial change in Metro Orlando?' that:

1) Metro Orlando exhibited non-linear development,
2) but non-linear change has become more obstructed by the institutional framework in place,
3) which is not supportive of the interplay of areas with high dynamism and areas with low dynamism,
4) Metro Orlando policy has not resulted in a holistic approach to planning,
5) the biomedical sector has potential, and
6) holistic visions have been published and are starting to be incorporated into the institutional framework;

Metro Orlando should embrace non-linear development, by following an adaptive and holistic approach to planning. The biomedical sector and holistic visions that have come to the forefront in the past decade are valuable assets, as these create potential for a holistic approach. The main hurdle for comprehensive planning is the institutional dimension itself. Fragmented and localised efforts without attention to context are still common practice. In the existing actor network, fragmented government competes with big corporations. Stronger interjurisdictional structures can induce more cooperation and lead to the organisational change required for a comprehensive approach. A continuation of the incorporation of visions for 2050 is important for the institutional dimension. By allowing the effects of diversification of the economy to trickle through into the regional economy, the entire region can become more robust and flexible.

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