Aspern explained: How the Discursive Institutionalization of Infrastructure Planning shaped North-Eastern Vienna's Urban Transformation

Astrid Krisch[1], Johannes Suitner[2]

[1]*TU Wien, astrid.krisch@tuwien.ac.at*
[2] *TU Wien, johannes.suitner@tuwien.ac.at*

Abstract: Public perception of infrastructure planning is oftentimes simplistic: experts instruct adaptations to the physical environment in consequence of contextual structural influences. Such structure-agency imaginaries imply an argumentative bypass though that neglects discursive institutionalizations of (1) the ideal structure of society, (2) the envisioned ideal-type city, and (3) the disciplinary self-conception of "good planning" as key intermediary instances of development and change. Focusing such discursive institutionalizations thus could aid understanding and explaining the origins of the material transformation of the city. We exemplify this notion with an analysis of Aspern in northeastern Vienna and its urban transformation since 1954. We claim that its conversion from cropland to smart and sustainable development area is not just the often-cited logical result of a re-urbanization trend manifesting in a zeitgeisty form, but the path-dependent materialization of past discursive institutionalizations of infrastructure planning. Employing an ASID and discursive institutionalist perspective, we point to critical strategic action and discursive complexity reduction, the institutionalization of networked infrastructure in the planning system, and its consequential materialization in a distinct form of infrastructure development. Our analysis uncovers institutionally stable phases of infrastructure planning as well as critical transitions in the planning system – all shaping Aspern's subsequent development. Retracing this process serves as an explanation to the multi-layered path-dependency of the entailing realization of a large-scale urban development project. Herewith, the research contributes to a better understanding of the discursive institutionalization of infrastructure planning and the planning-development nexus at large.

Keywords: Networked Infrastructures, Discursive Institutionalism, ASID, Vienna

Introduction

"Study a city and neglect its sewers and power supplies (as many have), and you miss essential aspects of distributional justice and planning power." (Star, 1999, p. 379)

Public perception of urban change is oftentimes biased by a simplistic conception of how the planning-development relation works. Planning experts with comprehensive knowledge of current and future contextual structural influences instruct physical changes to the cityscape to solve urging urban problems and adapt the city's built environment and functional pattern to the challenges ahead. Taking an institutionalist stance, however, the practice of regulating city-building must be viewed as the result of path-dependent institutionalizations (Sorensen, 2015, 2018). These institutionalized practices and discourses that constitute a territorial planning system can hardly be bypassed (ibid.). Planning-development conceptions as the one described above must thus be discarded as simplistic imaginaries of structure-agency interactions (cf. Jessop and Sum, 2006, Jessop, 2008). Instead, the act of planning must be understood as a practice that is embedded in a specific functional subsystem, characterized by a historically specific institutional order (Servillo and Van den Broeck, 2012, Moulaert *et al.*, 2016). Throughout the history of modern planning, neither has the planner's expertise, comprehensive knowledge, or his general role within this act been uncontested, nor can we consider 'context' an empirically sufficient explanation for urban change. On the contrary, the solidification of certain time- and place-specific ways of doing planning, the goals, norms and rules of the game, as well as the structural constraints and opportunities for material transformations are important path-shaping variables to consider in this regard (Servillo and Van den Broeck, 2012, Moulaert *et al.*, 2016).

Moving away from a container thinking of space, it becomes clear that space is a historical product, organized through a combination of economic, infrastructural and institutional-regulatory practices (Swyngedouw, 1993). Hence, space as a historical product is connected to its social organization and therefore also those power relations involved in creating space. Taking infrastructure networks as the starting point of the investigation of urban change thus sheds light on those social structures as well as path-dependent power relations. "Transformations in the orientation and structuring of urban infrastructure must simultaneously involve reshaping the social organization of power relations in both time and space and the heterogeneity of the networks" (Graham and Marvin, 2001, p. 215). Understanding infrastructure planning therefore is crucial to grasp the interrelations between how a planning system envisions itself, the organization of society and the ideal type city with the actual physical transformation of space.

Infrastructure in this paper refers to more or less stable networks, which determine the mobility and interaction of people, goods and ideas (cf. van Laak, 2018). We refer to technical networked infrastructures as material constructs, such as roads, railways or pipelines, which influence and are influenced by economic, political and social practices. As Steele and Legacy (2017) argue, infrastructure can be understood "as relational; ecological; as everyday practice; as inherently political; as embedded in questions of human and non-human justice and equity, fiscal transparency, institutional accountability; and with a particular emphasis on the critical role of infrastructure as part of a public urban commons." (p. 2) Also Star (1999) emphasizes the relational aspects of infrastructure. For him infrastructure only becomes real in relation to organized practices, i.e. its institutionalization (Star, 1999, p. 380). This relational understanding of infrastructure networks corresponds with Graham and

Marvin (2001), who regard urban infrastructures as "heterogeneous assemblies of materials, technologies, social institutions, cultural values and geographical practices. Cities are held together by intimately linked social and technical assemblages that mutually construct one another in increasingly seamless ways." (p. 214) In this sense, infrastructure networks are, contrary to common belief, only temporarily stabilized and only stable through their institutionalization within the planning system. They are determined by institutional relations and formations of power, control and access and can therefore be understood as a socio-political agenda themselves (Steel and Legacy, 2017). Dourish and Bell (2007) emphasize two perspectives on infrastructure: (1) infrastructure development for organizing space and society, and (2) infrastructure development as part of the collective construction of cultural meaning (p. 415).

Previous research has often focused on infrastructure networks in connection to their effects on national economies, analyzing demand and supply of infrastructure provision and understanding infrastructure as the underlying structure of economic processes and economic growth (Frischmann, 2011). Urban studies and related disciplines have in the past largely failed to treat infrastructure networks as an important field of study. For many years, the deterministic view of infrastructure networks as technocratic constructs shaping space dominated academic debates (Graham and Marvin, 2001). Especially studies on large technical systems (LTS) have tackled infrastructure networks in the most comprehensive manner until recently (i.a. Bijker *et al.*, 1987, Coutard, 2002, Hughes, 1993, Mayntz and Hughes, 1988). However, the complex issues of interlinked infrastructure networks and the way in which they "are involved in the social production and reconfiguration of urban space [..] tend to be ignored." (Graham and Marvin, 2001, p. 30) In the last few years though, research on infrastructure networks increasingly moved towards a poststructuralist analytical viewpoint, regarding infrastructure as embedded in different complex sociotechnical, political and cultural systems, having contingent effects in different places at different times (see also Graham and Marvin, 2001, Graham and McFarlane, 2015, Easterling, 2016, van Laak, 2018). Infrastructure networks are increasingly recognized as systems, which are not only interlinked within different infrastructural systems, but also function as "sociotechnical hybrids", where the relation to urban development plays a crucial role (Graham and Marvin, 2001). Hence, we also consider infrastructures an important variable for better understanding the path-dependent process of urban development and small-scale urban transformation in particular.

There are three important determinants for the discursive institutionalization of infrastructure development: the ideal structure of society, which makes an ideal type city necessary, which is based on the envisioned understanding of the functioning of planning. Infrastructure networks often serve as a legitimation strategy for a certain philosophy of planning, to legitimize political arguments, from economic progress and growth, economic and cultural competition between cities to technological and technocratic feasibility visions. For urban planning, infrastructure development is often legitimized as an adaptation strategy for urban growth and related urban pressures (van Laak, 2018). This is especially useful as infrastructure and cities are persistently intertwined, making the investigation of spatial transformations through infrastructure development at city level a useful starting point. Just like infrastructures are socially constructed, cities are infrastructural constructions (Graham and Marvin, 2001). Cities therefore function as sociotechnical processes, where "economic, social geographical, environmental and cultural change […] is closely bound up with changing practices and potentials for mediating exchange over distance through the construction and use of networked infrastructures" (ibid.,

p. 10). Infrastructure networks thus are materialized social relations. Hence, employing the concept of infrastructure networks signals a pivotal responsibility or at least a universal public interest. Infrastructure in this sense is the collective subconscious of society and once established, easily transformed into daily routines and often taken for granted. Thus, infrastructure networks create technical and habitual path-dependencies, which materialize social relations in urban space. They become the very "organisation principle to everyday life", sustaining "ever-accelerating geographies of production, exchange, and consumption" (Kirsch, 1995, p. 541). This organization system through infrastructure networks consolidates a lasting vision of the ideal-type city on different levels. Different scales interplay within arguments surrounding infrastructure networks, where changing dynamics of global political economies and societies are displayed (Graham and Marvin, 2001). "This ensures a wide variety of particular ways in which the political action of city agencies and politics intersects with that of nation states and international governance bodies, to shape the reconfiguration of infrastructure networks" (ibid., p. 114).

Infrastructure networks also often serve as a legitimization strategy for technologized planning visions. The process of infrastructure development is often obscured through the entanglement within highly technical and technocratic institutions, "driven by supposedly depoliticised, instrumental rationalities of engineering cultures" (ibid., p. 20). Processes of infrastructure development are as a consequence increasingly opaque. Infrastructure networks often pose as neutral and objective, however they are often instrumentalized to keep and enforce political, economic, social, cultural or technocratic interests (van Laak, 2018). Massey (1993) refers in this regard to "sociotechnical geometries of power", where the combination of infrastructural, economic and institutional-regulatory practices is a historical product for the production and organization of space (Swyngedouw, 1993, p. 310). Especially the history of infrastructure became a significant object of investigation because it "becomes visible as a reformulation that feeds back specific ideas about the future into an urban imaginary" (Vyjayanthi, 2015, p. 40). Infrastructure in this sense can be understood as the outcome of processes of negotiations between different institutions, defining specific compromises for specific times. It is therefore an urgent issue concerning many disciplines beyond urban and planning studies (van Laak, 2018).

This paper therefore investigates the discursive institutionalization of infrastructure development for the specific case of the north-eastern part of Vienna. After introducing the theoretical framework of institutionalist perspectives on planning and in particular the concept of discursive institutionalism, we employ this concept to the specific case of Aspern's urban transformation process since the 1950s. We retrace the different phases of important points in history, where shifts and continuities can be observed in the development of infrastructure networks and lastly draw conclusions on the planning-development nexus.

Discursive Institutionalism as a Strategic-Relational-Institutionalist Perspective on Infrastructure Planning and Urban Change

Studies tackling the complex relationship between the institutional subfield of planning, the process of infrastructure development and urban change demand a robust theoretical framework that enables categorization and detailed analysis of dimensions and their interrelations. Aiming at a historical explanation of small-scale urban transformation as the result of discursive institutionalizations of infrastructure, we employ an institutionalist perspective that allows us to uncover how the solidification of ideas in the planning system influences urban change (cf. Schmidt, 2012). This makes particular

sense considering the variety of arguments suggesting a close vicinity between infrastructure development and institutionalization processes (cf. Star, 1999, Graham and Marvin, 2001, Steel and Legacy, 2017).

We thus base our concept on the ASID heuristic by Moulaert *et al.* (2016), a meta-theoretical model for analyses of socio-economic development. Incorporating a wide array of theories from development-, regulation- and state theory to evolutionary economics and new institutionalism, ASID puts an emphasis on how institutional dynamics and spatialized regulation influence development (ibid.). The model thus also provides a fruitful perspective on the planning-development relation. ASID takes the role of strategic action, the power of discourse, the influence of institutional formations and the constraining and facilitating force of structure into account as mutually related factors of urban development. As the authors explain:

"For an adequate account of socio-economic development, one must refer to the actions that steer or interfere with the development processes, the structures that both constrain and enable action, the institutions that guide or hamper action and mediate the relation between structures and action, and the discourses and discursive practices that are part of these interactions." (Moulaert *et al.*, 2016, p. 168-169).

Building on a Critical Realist ontology, the model's emphasis is on the constraining and facilitating forces of structure that help explain time- and place-specific development paths and potential path-dependencies (Moulaert *et al.*, 2016). ASID thus provides a valuable basis when it comes to "making sense" of locally specific urban transformation processes and the local "planning conditions" that inform it. The four dimensions of agency, structure, institutions and discourse provide useful categories for systematically reviewing the layers that constitute the institutional subfield of planning at a certain time in a certain place, while the analysis of particular strategic-relational formations at the intersection of the four dimensions can aid explanations of how and why change occurred. The archetype process as conceptualized within ASID assumes that individual or collective agents strategically employ discourse to maintain or transform institutions and ultimately influence structure, while at the same time structural forces, institutional settings and hegemonic discourse regulate the strategic action of those actors (ibid.).

However, being a meta-methodology, its application in empirical analyses demands ASID to be blended with middle-range theories (ibid.). Since the multi-faceted definition of networked infrastructures that we developed in the introduction particularly points to the social construction of infrastructure, its relational and institutional character, we consider the Strategic-Relational-Institutionalist research approach (henceforth SRI) (Servillo and Van den Broeck, 2012) a fitting perspective when it comes to detailing our understanding of what dimensions actually constitute planning systems.

Servillo and Van den Broeck (2012) conceptualize planning systems as "a technical device embedded in an institutional frame and produced by groups of actors" (ibid., p. 46). Within this model, the actual technical process of involved actors who selectively structure strategies constitutes the planning system. The planning rules and instruments, ideal-type planning approaches, the discursively constructed aims and keywords, as well as the overarching socio-political structures constitute the environing institutional frame. The SRI herewith enriches established institutionalist planning theory that draws from sociological and historical/political institutionalism with Jessop's Strategic-Relational Approach

(cf. particularly Jessop, 2008), stressing the social construction of planning. In doing so, the authors put an emphasis on how institutional formations of planning privilege certain actors and social groups over others. Moreover, they focus the role of strategic agency in the reproduction and reorganization of planning institutions (Servillo and Van den Broeck, 2012). Thus, it is a suitable approach to expand on with regard to the tripartite relationship of planning system, infrastructure development and urban change.

The understanding of development and change as proposed by ASID and the SRI implies three important points for the conception of infrastructure: (1) The planning and materialization of infrastructure is a deeply political process characterized by power, negotiation and strategy. Its instigation thus depends on the strategic agency of certain individual or collective actors, actor networks or social groups. (2) Infrastructure development is historically contingent. It is dependent from and influenced by an existing institutional landscape in the subfield of urban infrastructure planning and the structure of existing infrastructure networks that it is meant to complement or replace. Path-dependence thus is key to urban transformation if we look at it from an infrastructure perspective. (3) Infrastructure development is related to, inspired and influenced by multiple layers and scales of action. Phases of stability as well as incremental or radical change to the institutional landscape of urban infrastructure planning and the actual materialization of infrastructures thus must be considered the result of interrelated and interdependent activities and events embedded in certain social and institutional formations. The notion is that infrastructure is always relational, i.e. linked to other facilitating or constraining forces and events (cf. Moulaert *et al.*, 2016, Sorensen, 2015, 2018).

To make the institutional formations of infrastructure planning and development as conceptualized within ASID and the SRI approach applicable, we use the concept of discursive institutionalism, thus deploying a middle range theory to capture how planning ideas become institutionally fixed and, in consequence, influence urban development. Discursive institutionalism severs as a discourse-based explanation of how and when ideas prevail through historically determined constellations of agency within specific institutional relations, influencing urban development and change. We therefore blend Public Policy Analysis – understood as the study of how actors, ideas and institutions in planning relate (cf. Dunn, 2012) – with Critical Discourse Analysis (cf. Fairclough, 2010) of infrastructure planning policies to uncover the discursive formation of social, urban and planning ideals and their transmission into material urban infrastructures.

The concept of discursive institutionalism emerged as a critique of other forms of new institutionalism, which often overemphasize institutions while underrepresenting agency, ideas and discourses (Davoudi, 2018). This aspect is dealt with in discursive institutionalism by taking discourses and their consequences seriously and putting them in an institutional context (Schmidt, 2008). Discursive institutionalism can be regarded as the fourth and newest analytical viewpoint next to other forms of new institutionalism – rational choice institutionalism, historical institutionalism, and sociological institutionalism (Schmidt, 2012).

The analytical approach of discursive institutionalism allows to understand political processes for organizing space and the cultural construction of meaning by taking both ideas and institutional settings into account. Whereas the other forms of the planning theory strand of new institutionalism leave us with “unthinking” actors, subordinating agency to structure, discursive institutionalists have recently stressed the importance of ideas and discourses (Schmidt, 2008, 2012). Vivien Schmidt as an important

representative of this new analytical approach, investigates not only what the nature of the relationship between structure and agency contains, but also how actors change or maintain institutional practices (Davoudi, 2018). Discursive institutionalism "helps to overcome the structure-agency divide and, thereby, to explain the dynamics of change by lending insight into how actors in different institutional contexts with new ideas may overcome entrenched interests, institutional obstacles and cultural impediments to change" (Schmidt and Radaelli, 2004, p. 207). Discursive institutionalism therefore serves as an analytical approach in political science to trace how ideas are tied to action.

The main argument of discursive institutionalists is, that ideas are carried through agents, which form the basis for collective actions through discursive argumentations and interactions (Figure 1). Ideas, agents, discursive interactions and collective action all function through their institutional context, which acts as the setting, in which ideas have meaning, discourses have communicative force and actions make a difference (Schmidt, 2012).

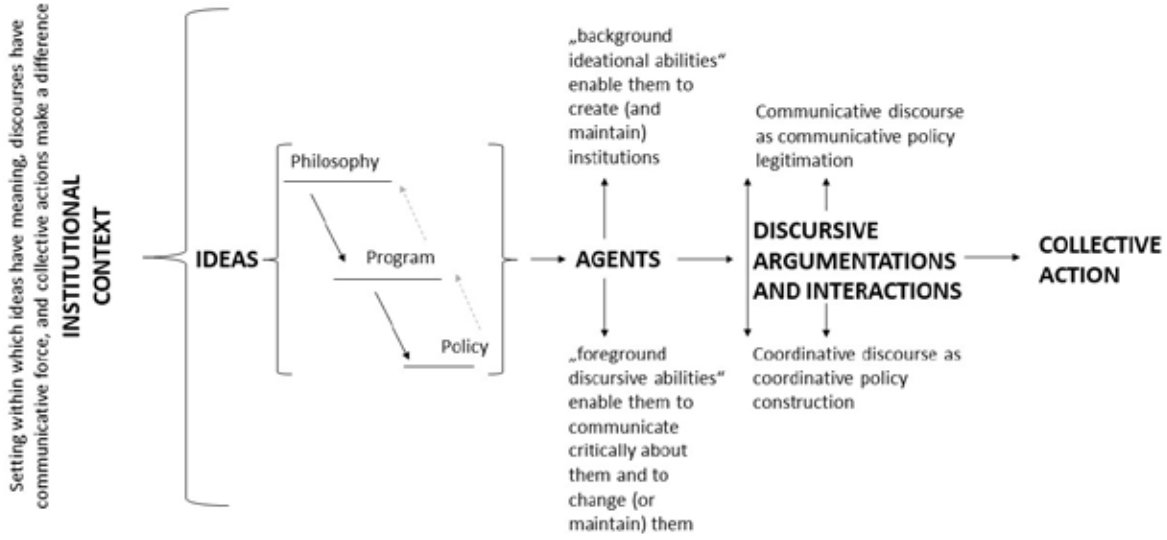

Figure 1: Building blocks of discursive institutionalism; Source: own adaptation following Schmidt (2012)

For Schmidt (2012), the institutional context is the pivotal juncture, where ideas as representations (how agents say what they are thinking of doing) are generated by actors and communicated through discursive interactions (to whom the actors say what they are thinking of doing). Thus, the institutional context determines where and when actors say what they are thinking of doing.

Ideas, discourse or discursive interactions and institutional context are the main building blocks of discursive institutionalism. Schmidt (2008) differentiates between different levels, types and forms of ideas, which are the substantive contents of discourses. Bringing discourse to the centre of analysis aligns with a constructivist perspective, where the focus is on social processes and power relations (Davoudi, 2018). Ideas form the basis, which can either appear on the first level as policies, on the

second level as programs or on the third level as philosophies, worldviews or norms. Furthermore, these levels of generality of ideas can either be primarily cognitive or normative, providing guidelines for political action and justification of policies and programs through interest-based logic or attaching values to political action and justification of policies and programs through appropriateness, respectively (Schmidt, 2008). Lastly, ideas can appear in different forms, as narratives, frames, collective memories, stories, scripts, scenarios or images.

Agents act as carriers of ideas, which form different constellations and communicate their ideas in their specific institutional context. They therefore construct institutions through their "background ideational abilities", which enable them to create (and maintain) institutions, and their "foreground discursive abilities", which enable them to communicate critically about the constructed institutions and to change (or maintain) them (Schmidt, 2012).

However, institutions are not only constructed by agents but also structured by discourse. "Institutions […] are simultaneously structures and constructs internal to the agents themselves" (Schmidt, 2008, p. 314). This internal structure can also be understood with discourses, which Schmidt not only understands as the content of what is said, but also as its context of where, when, how and why it was said. Structure of what, where and how something is said is equally important to agency of who said what to whom (Schmidt, 2008). Using the term discourse indicates the ideas represented in the discourse and the interactive processes by which ideas are conveyed. Thus, discourse functions as an institutionalized structure of meaning and forms an interactive social process. Schmidt (2012) distinguishes between communicative and coordinative discourse. Coordinative discourse mainly happens among actors involved in the policy process, including "policy makers", government officials, lobbyists, policy consultants, experts or business and union leaders, leading to the coordinative construction of policies. Communicative discourse takes place between political actors, which are engaged in presenting, deliberating, arguing, contesting and legitimating policy ideas to the public, which also includes media, interest groups, public intellectuals, social movements etc. with the goal to legitimate policies through communicative practices. How coordinated ideas of political actors are communicated depends on the institutional context (Schmidt, 2008, 2012).

For planning research and particularly for investigating infrastructure planning, ideas and discourses in their specific institutional contexts are essential to understanding their influence on stability and change and how they shape political behaviour and outcomes and thus, urban space. Davoudi (2018) argues, that especially in the context of the rich history of planning ideas, "discursive institutional analyses of change and stability in planning policies, practices and institutions can be particularly insightful" (p. 72). Moreover, Sorensen (2015) argues, that especially for infrastructure planning, where path-dependencies are a crucial dynamic, the analysis of institutions helps to understand stable phases and critical transitions within the planning system. Discursive institutionalism hence provides a fruitful method in this paper, to investigate infrastructure planning within the single case study of urban change in north-eastern Vienna. We thereby contribute to the not yet extensively empirically researched conceptual framework of discursive institutionalism and provide empirical evidence for its application. Following arguments of Schmidt (2008, 2012), where ideas act on different levels, the section below focuses on the process of how the envisioned structure of a "good" society, the philosophy or worldview, makes a "good" structure of urban space necessary as a programmatic idea, which is based on "good" planning as a policy solution, such as a strategic plan or instrument as an expression of the specific self-conception of the planning profession. How these ideas came to life and persisted or

changed through time sheds light on institutionally stable phases of infrastructure planning and critical transitions in the planning system, which shaped Aspern's subsequent development.

Discursive Institutionalization of Infrastructure Planning: The Case of North-Eastern Vienna

This paper redraws the historic development of infrastructure networks as the result of decisions at the intersection of technology, economy, politics and society (van Laak, 2018). It therefore focuses on planning institutions devoted to infrastructure development, since planning institutions "can be seen as embodiments of ideas that are in turn inspired by interests, aspirations, ideologies or practices" (Davoudi, 2018, p. 65). Our analysis builds on the collective action within the discursive institutionalization of infrastructure planning, which we regard as the materialization of infrastructure development and urban change in Aspern and its surroundings. We connect collective action to the underlying ideas and discourses mediated through agents of infrastructure planning which form specific institutional relations through their discursive interactions, thereby uncovering the institutional context through path-dependent development processes and radical changes in infrastructure planning.

Since the body of literature on the development of infrastructure networks suggests an increase in fragmentation of previously mostly integrated and standardized infrastructure systems (cf. Graham and Marvin, 2001, Marshall, 2013, Easterling, 2014, van Laak, 2018), the analysis of Vienna's North-East allows uncovering similarities and differences of the city's infrastructure development in comparison to global dynamics. In the following section we thus show how infrastructure development ideals and moments of change in Vienna's urban development path shaped the time- and place-specific phases of Aspern's transformation into its current form. We show that each phase is characterized by a distinct formation of ideas, agents, and discursive interactions, all leading to collective action to influence Vienna's north-eastern infrastructure development and, consequently, its overall urban transformation.

The institutional precondition for today's urban development in Aspern is the administrative incorporation of the 22nd district Donaustadt in 1954 after an uncertain time during and after the Second World War. The focus of urban planning was inner development due to stagnating population. Urban growth gravitated mostly to the north and south, not the north-east (Eigner and Resch, 2001, Klusacek *et al.*, 2008). However, the incorporation of Donaustadt as the 22nd district of Vienna represents a critical point in Aspern's history as it formed the basis for its future urban development.

In the 1950s and 1960s, the social welfare state was the predominant philosophy, which was underpinned by social urban planning as the programmatic idea of how to realize the ideal urban structure of Vienna (Pirhofer and Stimmer, 2007). However, this period created hardly any actual urban change in the eastern part of Transdanubia – as the 21st and 22nd district are colloquially called – as planning at that time was predominantly concerned with reconstructing residential housing and the city's population was stagnant. Although many visions from technocratic planning experts emerged, they were mostly incompatible with the social welfare ideas and thus were not incorporated into any policies. Thus, the agents of the strong local state pushed through their ideas of social urban planning

and reconstruction, while technocratic experts[1] visions were left behind. At large, post-war modernist ideas had hardly any influence on Aspern's development, since envisioned projects were implemented in other parts of the city at that time (f.e. Großfeldsiedlung in Floridsdorf) (Suitner *et al.*, 2018).

Thus, the transformation of the eastern part of Donaustadt took until the 1970s, where the airfield Aspern was closed in 1977 and flight operations stopped due to the opening of the second runway at the airport in Schwechat (Wien Geschichte Wiki, 2019a). Moreover, the General Motors factory was built at the former Aspern airfield, opened in 1982 and initially employed 1.500 people (Wien Geschichte Wiki, 2019b). However, the factory was far away from residential housing, which is why the city actively pursued transport development to connect the workers to the inner parts of the city. Moreover, in 1975 the largest shopping mall in Vienna was opened in Kagran, not far away from Aspern, which changed the functional structure of the district (Wien Geschichte Wiki, 2019c).

The underlying philosophy of the 1970s and 1980s was influenced by the shift from Fordism to Post-Fordism, which led to consumerism, the retail sector's wide-ranging makeover, and increasing inequalities – also in Vienna. However, the local state's passed on ideal of promoting equal living conditions was reflected in a new programmatic idea for the ideal city. To compensate Vienna's monocentricity, which put increasing pressure on the inner city, a hierarchical functional model including axes and centres was implemented (MA 18, 1985). One of the axes ran through Aspern, connecting it to 22nd district's established urban centre and a neighbouring municipality. These programmatic ideas were communicated through comprehensive plans, like the masterplan for transport in 1970 (MA 18, 1970) and the first urban development plan in 1984 (MA 18, 1985), and were complemented with small-scale development plans, e.g. the development plan for the 22nd district in 1972 (MA 18, 1993).

However, the ambitious ideas of connecting Aspern to Vienna's public transport system initially failed due to infrastructure costs and the increasingly complex actor structures. Although the 1970s and 1980s represented a new form of planning through comprehensive and communicative modes of development, the increasing complexity of projects and involved actors thwarted the success for the most part. Hence, insufficient job supply combined with a lack of efficient transport routes are recurrent debates in Aspern's development path.

In 1992 the city of Vienna acquired the properties of the Aspern airfield, creating the basis for on-site developments (Wien Geschichte Wiki, 2019a). At the same time, population in Vienna was growing again, thus making active acquisition of land for urban development necessary.

With the fall of the Iron Curtain in 1989, the new underlying philosophy was to promote Europeanization, integration and growth. Competition between cities and states was the driving force for development, strengthened by the programmatic idea of the European city model combined with the concept of "New Urbanity" for urban expansion (Hatz, 2009). Planning's self-conception gradually

[1] see for instance the satellite towns of Brunner (1952) or the comprehensive vision for Vienna's future development of Rainer (1962)

shifted towards planning as an entrepreneurial task with "valuable" projects of urban development (Novy *et al.*, 2001). As such, Aspern as a new urban quarter in the north-east of Vienna became the flagship project for the city with the alleged possibility to function as a bridge to the new Europe (Suitner, 2015).

Urban expansion projects were supported by new agents of urban management, routed in institutionalization processes of the 1970s and 1980s: the Wien Holding, founded in 1974 as an umbrella organization for mostly infrastructure companies, which reflected future intersections between state and market within the governance system for urban development; the WWFF (Vienna business development fund) founded in 1981, which acquired properties for companies in search for suitable development sites and was supported by public subsidies; the WBSF (Vienna land provision and urban renewal fund) founded in 1984, which acted relatively flexible under private law but was financed by the city government; and the urban development commission founded in 1985 to represent all departments and political parties to discuss urban development policy issues (Pirhofer and Stimmer, 2007). These complex constellations of actors represented the consensual planning model in Vienna. The acquisition of the airfield in Aspern is an expression of these intersections between different agents and reflects an institutionalized form of planning, where the philosophy of a provident state for future development is expressed in the programmatic idea of buying land itself in order to be able to develop a new urban quarter under its own conditions.

Shortly after the acquisition of the airfield, the City of Vienna, together with the WWFF and with the participation of the urban development commission, carried out an urban planning procedure for the development of the airfield. The resulting master plan by Rüdiger Lainer covered about half the area of the expansion plans of today's Seestadt Aspern. 10.000-12.000 residents and 6.000 jobs were to be accommodated in the new district (City of Vienna, 2019a). However, the plan was not put into practice due to its incompatibility with the lacking infrastructural linkage of Aspern to the rest of the city.

Hence, in the 1990s, construction of transport routes was the main focus to prepare urban development in Aspern. The railway S80 and highways such as the A23 or the A22 were expanded to the north-east of Vienna to connect the area to the rest of the city (MA 18, 1994). The construction of traffic infrastructure accumulated at that time to construct high-ranking transport links to connect and upgrade the area between Danube and north-east of Vienna and thus prepare for future urban development. With Europeanization, integration and growth being the dominant drivers at that time, efficient traffic connections became mandatory prerequisites for urban expansion. The policy to reach this programmatic idea of the consensual planning model, which was an institutionalized practice since the first urban development plan was issued in 1984 (MA 18, 1985), continued in the urban development plan of 1994 (MA 18, 1994) and small-scale policies for Donaustadt (MA 18, 1998a, 1998b). The latter pled for closing the gap of infrastructure provision in the north-east and criticized Transdanubia's lack of functional integration.

Although the vision for urban development in Aspern existed since the 1970s, it took 20 years to finally initiate the according transport links as prerequisites for the subsequent transformation process. The complex constellation of agents and ideas, which manifested in the 1980s through different organizations relevant for development processes and the lacking infrastructure provision thwarted the success of various development ideas like the first master plan for Aspern. Only the decision for the

development of the underground line U2 as a necessary precondition for infrastructure development and future urban development at the airfield led to the subsequent urban change in the 2000s.

However, the complex division of competences, especially in transport infrastructure, led to the construction of transport links mostly for road traffic, whereas public transport was caught up in difficult negotiation processes between national and municipal competencies (f.e. the City of Vienna and the ÖBB – Austrian railways). Thus, the foundation of Wiener Linien, Vienna's own public transport company in 1992 was no surprise (Wien Geschichte Wiki, 2019d).

However, it took until 2010 for the construction of today's Seestadt Aspern to begin (Wien Geschichte Wiki, 2019a). An important prerequisite was the expansion of the canal network to the eastern part of the 22nd district from 2009-2013 and the construction of a collection sewer with a pumping station in Aspern in 2013 to make the settlement in the rather flat land of Donaustadt possible (City of Vienna, 2019b). In 2010, the underground line U2 was expanded to Aspernstraße and in 2013 finally to Seestadt, thus connecting the new urban quarter to the centre of Vienna via high-ranking public transport (Wien Geschichte Wiki, 2019e). Moreover, the small-scale functional integration of the two districts north of the Danube was further intensified through the newly expanded tram line 25, which connects the 22nd to the 21st district since 2012 and the tram line 26 between the centre of the 22nd district and the eastern part of Donaustadt in 2013 (Tramwayforum, 2019).

Seestadt Aspern reflects a new planning philosophy, which incorporates place-making and management-oriented planning strategies to cope with increasing uncertainty and complexity. This zeitgeist of planning as an attempt to steer urban development by discursively preparing the direction and design of structural transformations through place-making is consolidated by the programmatic idea of the city's structure as a polycentric agglomeration, where the construction of the underground serves as a successful model and legitimation for urban development. Currently, it legitimizes a more than optimistic vision of the development of eight potential centres in addition to the six existing ones in the strategic planning for the eastern part of the 22nd district (MA 21, 2013). For Seestadt Aspern, the master plan was created as the guiding policy. However, it not only reflects the underlying planning philosophy and programmatic idea of the future city, but simultaneously influences planning orientation and future visions for Vienna, since Seestadt Aspern has turned into a prestige planning project that is "too big to fail".

Moreover, the development of Seestadt Aspern also reflects the shift from government to governance as the complex interactions between diverse groups of actors show (f.e. national infrastructure agency, municipal infrastructure agency, political ministries, regional authorities, urban development commission etc.). These agents are involved in forming different policies concerning the development in Aspern: the urban development plans STEP 05 in 2005 (MA 18, 2005) and STEP 2025 in 2014 (MA 18, 2014), the Smart City Strategy in 2014 (Magistrat der Stadt Wien, 2014) and most importantly for Seestadt Aspern, the master plan in 2006, which promoted Aspern as an independent sub-centre within the city (City of Vienna, 2019a). In 2012, the master plan for the Seestadt was refined, a detailed plan for the development of the northern section and a separate plan for the public spaces at Seestadt were developed (Wien 3420 aspern development AG, 2019a). In 2017, the latest update of the masterplan was published (Wien 3420 aspern development AG, 2019b).

Seestadt Aspern is a reflection of planning between state and market, which manifests in an almost textbook spectrum of “good planning practices”: artistic displays, assemblies, subsidized housing, district management, participation processes, passive energy offices, timber high-rise construction, and much more. Moreover, the functional integration through local infrastructure networks is the mandatory prerequisite for urban expansion in Aspern. However, the original characteristics of the old town centres and structures are ignored. Instead of population growth and housing needs strengthening the existing Aspern town centre, the development of a new district is pushed to meet the needs. As a result, the area around the former airfield is clearly different from the newly constructed Seestadt.

Since 2017, a quarter of the project Seestadt Aspern is already completed (ibid.; see Figure 2). By 2028, the project shall accommodate more than 20.000 people and almost as many jobs (City of Vienna, 2019a), making Vienna’s north-east one of the most promising development areas of the city. However, resentment and resistance towards the increasing traffic load despite of upgraded public transport options is on the rise. Thus, the recent transfer of federal road competencies allows the City of Vienna to construct part of the federal highway B3d in its own sphere of influence. This will be followed by the Aspern urban road in 2021, which will necessitate the full development of the Seestadt area (City of Vienna, 2019c).

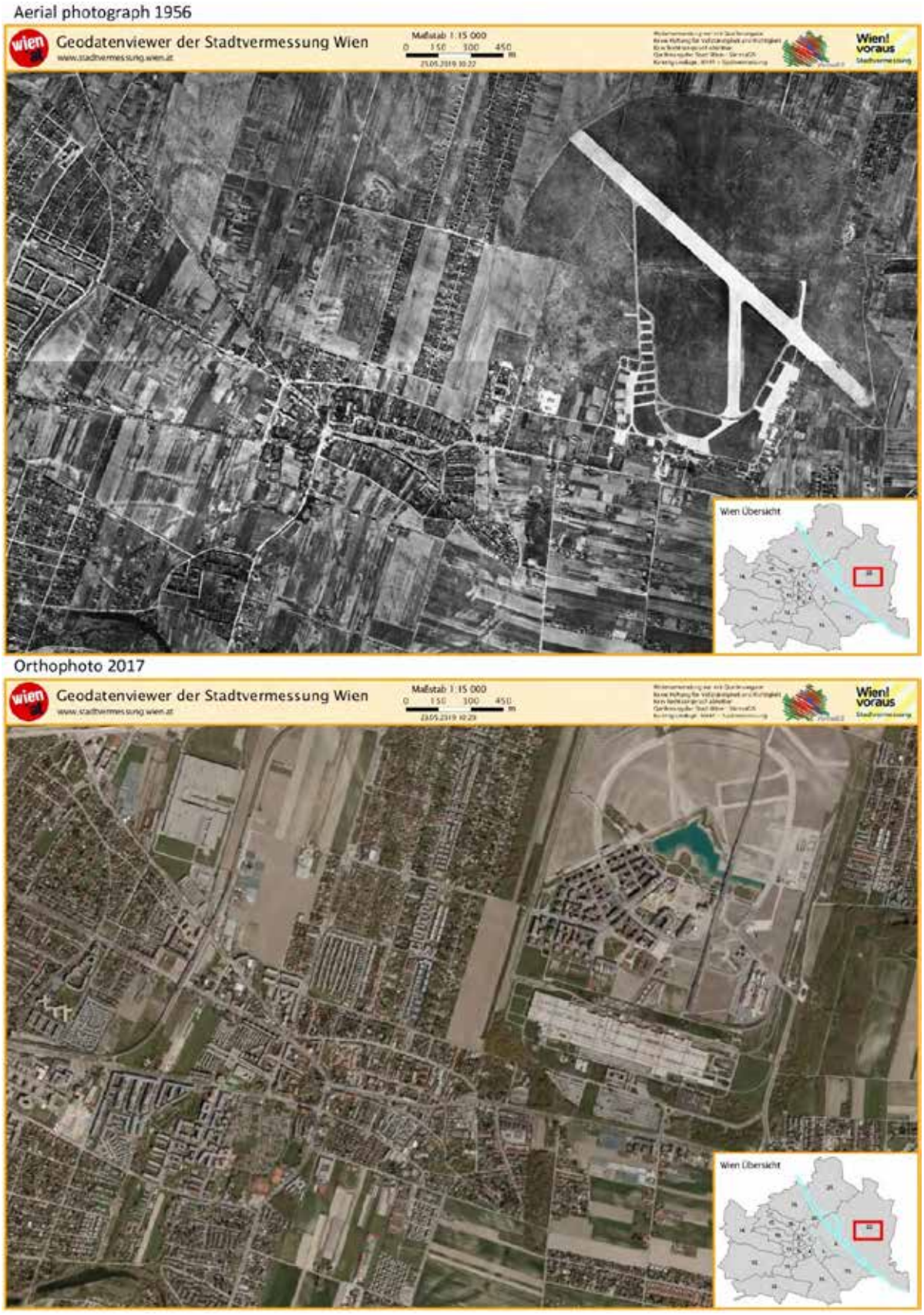

Figure 2: Urban transformation from 1954 until 2017 in Aspern; Source: City of Vienna (2019d)

Table 1: Discursive institutionalization of infrastructure development in Aspern's urban transformation since 1954; Source: own conception

Ideas		Agents	Discursive Interactions	Collective Action
Philosophy	Social welfare state	Strong local state Technocratic planning experts	Visions created by technocratic experts were incompatible with social welfare ideals	1954 incorporation of Donaustadt as a district of Vienna
Program	Social urban planning Reconstruction			
Policy	-			
Philosophy	Consumerism Provident state	Slow shift towards planning as urban management Decentralized modes of urban planning Diversity of actors	Masterplan for transport 1970, STEP 84 and "Donaustädter Bezirksentwicklungsplan" 1972 promoted axes Kagran-Groß-Enzersdorf through efficient public transport Visions were mostly incompatible with high infrastructure costs	1977 closing of the airfield Aspern 1982 opening of the GM factory in Aspern
Program	Functional urban model			
Policy	Comprehensive urban development plan combined with small scale development plans			
Philosophy	Competition	Expert urban planning procedures WWFF 1981 WBSF 1984 Urban development commission 1985	Development plan for the airfield by Rüdiger Lainer -> incompatible with lacking infrastructural preliminary work	1992 acquisition of the airfield Aspern by the city of Vienna
Program	European city model combined with "New Urbanity" for urban expansion			
Policy	Entrepreneurial urban planning -> "valuable" projects of urban development			
Philosophy	Europeanization, integration and growth	Amendment of the building code 1992 Wiener Linien 1992 Wiener Stadtwerke as listed public company 1999	STEP 94, Small-scale district development plans for Floridsdorf and Donaustadt promoted compensating the lack of provision in infrastructure and Transdanubia's lack of functional integration	Construction of transport infrastructures in the 1990s (f.e. S80, A23, A22)
Program	Efficient traffic connection as mandatory prerequisite for urban expansion			
Policy	Consensual planning model			
Philosophy	Place-making and management-oriented planning to cope with uncertainty	From government to governance -> complex interactions between diverse group of actors (f.e. national infrastructure agency, municipal infrastructure agency, political ministries, regional authorities, urban development agency etc.)	STEP 05, STEP 2025, Smart City Strategy, master plan Seestadt Aspern 2006 to promote Aspern as an independent sub-centre within the city	2009-2013 expansion of canal network to 22nd district 2013 construction of Aspern collection sewer with pumping station 2010-today construction of Seestadt 2012 tram line 25 2013 underground U2 2013 tram line 26
Program	Consolidated polycentric city model Underground as a successful model for urban development			
Policy	Master plan Seestadt			

Discussion & Conclusion

As Aspern's urban transformation has shown, different phases of stable development and critical ruptures can be identified, which either facilitate or decelerate change (see Table 1). By employing the concept of discursive institutionalism we were able to explain how Aspern developed from agricultural land and former airfield to one of the biggest urban development projects in Europe.

While the 1950s and 1960s facilitated rarely any physical transformation as planning at that time was mostly concerned with post-war reconstruction, the 1970s have seen quite radical changes that first established in the centre of the 22nd district to slowly radiate to its eastern parts thereafter. The provident understanding of urban planning from the 1960s until the 1980s was however delayed in Asperns development, as the acquisition of the airfield by the city in the 1990s was the prerequisite for today's urbanization of Aspern. However, the institutions created in the 1970s and 1980s prepared this change and provided the basis for Aspern's physical transformation. While urban planning in Vienna is traditionally paternalistic and, thus, top-down, the project of Seestadt Aspern itself influenced the underlying philosophy of planning's self-conception by its mere size. The project's master planning approach, its public-private financing structure and the well-orchestrated image- and place-making campaign all reflect the emergence of management-oriented urban politics and flexible governance in Vienna at the turn of the century..

The concept of discursive institutionalism thus enables us to retrace how projects, which are manifest realities today, are based on different levels of ideas from past times, which resulted from very different motives. Hence, the provident understanding of urban planning in Vienna from the 1960s until the 1980s created the basis for today's development, whereas today's urban transformations emerge from the planning ideas of the 1990s and 2000s, which were much more focused on supply-oriented approaches and strategic competition.

This paper hence has provided empirical evidence for the applicability of the concept of discursive institutionalism as an explanatory tool in urban development and planning research. Particular temporal decelerations and accelerations of infrastructure development are put in their respective institutional context, allowing a broader perspective that goes beyond reiterations of the simplistic planning-development nexus.

References

Bijker, Wiebe E., Hughes, Thomas P., Pinch, Trevor J. (eds.) ,1987, *The social contruction of technological systems: New directions in the sociology and history of technology* (Cambridge, MA: MIT Press).

Carstensen, M. and Schmidt, V., 2016, Power through, over and in ideas: conceptualizing ideational power in discursive institutionalism. *Journal of European Public Policy*, 23(3), 318-337.

City of Vienna, 2019a, Masterplan – aspern Seestadt, Date of access: 05/05/2019. https://www.wien.gv.at/stadtentwicklung/projekte/aspern-seestadt/planungsprozess/masterplan.html.

City of Vienna, 2019b, 'Asperner-Superkanal' in der Donaustadt, Date of access: 05/05/2019. https://www.wien.gv.at/umwelt/kanal/baustellen/superkanal.html.

City of Vienna, 2019c, Projektgeschichte – Stadtstraße Aspern, Date of access: 05/05/2019. https://www.wien.gv.at/verkehr/strassen/planen/grossprojekte/stadtstrasse-aspern/projektgeschichte.html.

City of Vienna, 2019d, Geodatenviewer der Stadtvermessung Wien, Date of access: 24/05/2019. https://www.wien.gv.at/ma41datenviewer/public/start.aspx.

Coutard, O. (ed.), 2002, *The governance of large technical systems* (London/New York: Routledge).

Davoudi, S., 2018, Discursive Institutionalism and Planning Ideas. In: Routledge Handbook of Institutions and Planning in Action, edited by W. Salet (New York: Routledge), pp. 61-73.

Dourish, P. and Bell, G., 2007, The infrastructure of experience and the experience of infrastructure: meaning and structure in everyday encounters with space. *Environment and planning B*, 34, 414-430.

Dunn, W.N., 2012, *Public Policy Analysis*. Fifth Edition. (New Jersey: Pearson Education).

Easterling, K., 2014, *Extrastatekraft – the power of infrastructure space* (London: Verso).

Eigner, P. and Resch, A., 2001, Phasen der Wiener Stadtentwicklung, Date of access: 05/05/2019. http://www.demokratiezentrum.org/fileadmin/media/pdf/eigner_resch_phasen.pdf.

Fairclough, N., 2010, *Critical Discourse Analysis. The Critical Study of Language* (London: Routledge).

Frischmann, B. M., 2011, *Infrastructure – The social value of shared resources* (Oxford: Oxford University Press).

Graham, S. and Marvin, S., 2001, *Splintering Urbanism – Networked Infrastructures, Technological Mobilities and the Urban Condition* (London and New York: Routledge).

Graham, S. and McFarlane, C., 2015, *Infrastructural Lives – Urban infrastructure in context* (London and New York: Routledge).

Hatz, G., 2009, Kultur als Instrument der Stadtplanung. In: Wien – städtebauliche Strukturen und gesellschaftliche Entwicklungen, edited by H. Fassmann, G. Hatz, W. Matznetter (Wien: böhlau), pp. 337-384.

Hughes, T. P., 1993, *Networks of power: Electrification in Western society, 1880-1930* (Baltimore/London: Johns Hopkins University Press).

Kirsch, S., 1995, The incredible shrinking world? Technology and the production of space. *Environment and Planning D: Society and Space*. 13, 529-555.

Klusacek, P., Martinat, S., Matznetter, W. and Wisbauer, A., 2008, 138 years of urban development in Central Europe – a long-term comparison of large city regions in Austria and the Czech Republic. Date of access: 05/05/2019. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.224.7764&rep=rep1&type=pdf.

MA 18 [Magistrat der Stadt Wien, Geschäftsgruppe Stadtentwicklung und Stadterneuerung, Magistratsabteilung 18], 1985, Stadtentwicklungsplan Wien. Self-published.

MA 18 [Magistrat der Stadt Wien, Magistratsabteilung 18], 1993, Werkstattberichte – Zentrum Kagran. Self-published.

MA 18 [Magistrat der Stadt Wien, MA 18, Stadtentwicklung und Stadtplanung], 1994, Stadtentwicklungsplan für Wien 1994. Self-published.

MA 18 [Stadtentwicklung und Stadtplanung], 1998a, Leitprogramm Donaustadt West – Das Leitbild. Magistratsabteilung 21C – Stadtteilplanung und Flächennutzung (Ed.). Self-published.

MA 18 [Stadtentwicklung und Stadtplanung], 1998b, Leitprogramm Donaustadt West – Entwicklungskonzept. Magistratsabteilung 21C – Stadtteilplanung und Flächennutzung Nordost (Ed.). Self-published.

MA 18 [Stadtentwicklung Wien, Magistratsabteilung 18, Stadtentwicklung und Stadtplanung], 2005, STEP 05. Stadtentwicklung Wien 2005. Self-published.

MA 21 [Magistrat der Stadt Wien – MA 21 – Stadtteilplanung und Flächennutzung], 2013, Wo willst du hin, meine Donaustadt? Strategieplan für das Zielgebiet U2 – Donaustadt. Self-published.

MA 18 [Stadtentwicklung Wien, Magistratsabteilung 18 – Stadtentwicklung und Stadtplanung], 2014, STEP 2025. Stadtentwicklungsplan Wien. Self-published.

Magistrat der Stadt Wien, 2014, Smart City Rahmenstrategie. Self-published.

Massey, D., 1993, Power-geometry and a progressive sense of place. In: Mapping the Future: Local Cultures, Global Change, edited by J. Bird, B. Curtis, T. Putnam, G. Robertson and L. Tickner. (London: Routledge), pp. 59-69.

Marshall, T., 2013, *Planning major infrastructure – a critical analysis* (New York: Routledge).

Mayntz, R., Hughes, T. P., 1988, *The development of large technical systems* (Frankfurt am Main: Campus).

Novy, A., Redak, V., Jäger, J., Hamedinger, A., 2001, The End of Red Vienna: Recent Ruptures and Continuities in Urban Governance. *European Urban and Regional Studies*, 8(2), 131-144.

Pirhofer, G. and Stimmer, K., 2007, Pläne für Wien. Theorie und Praxis der Wiener Stadtplanung von 1945 bis 2005. edited by Stadtentwicklung Wien. Self-published.

Schmidt, V. A., 2008, Discursive Institutionalism: The Explanatory Power of Ideas and Discourse. *Annual Review of Political Science 11*. doi:10.1146/annurev.polisci.11.060606.135342, 303-326.

Schmidt, V. A., 2012, Discursive Institutionalism. Scope, Dynamics, and Philosophical Underpinnings. In: The Argumentative Turn Revisited: Public Policy as Communicative Practice, edited by F. Firscher and H. Gottweis (Durham, [NC] [a.o.]: Duke Univ. Pr).

Schmidt, V. A., Radaelli, C. M. (2004). Policy Change and Discourse in Europe: Conceptual and Methodological Issues. *West European Politics*, 27(2), 183-210.

Sorensen, A., 2015, Taking path dependence seriously: an historical institutionalist research agenda in planning history. *Planning Perspectives*, 30(1), 17-38.

Star, S. L., 1999, The ethnography of infrastructure. *American behavioral scientist*, 43 (3), 377–391.

Steele, W. and Legacy, C., 2017, Critical Urban Infrastructure. *Urban Policy and Research*, 35(1), 1-6. doi:10.1080/08111146.2017.1283751.

Suitner, J.; Krisch, A.; Pühringer, J. (2018). TRANS[form]DANUBIEN. Eine urbane Metamorphologie der Wiener Stadtplanung anhand der Entwicklungsdynamik Wiens links der Donau, 95 p.

Suitner, J., 2015, *Imagineering Cultural Vienna. On the semiotic regulation of Vienna's culture-led urban transformation* (Bielefeld: transcript).

Swyngedouw, E., 1993, Communication, mobility and the struggle for power over space. In: Transport and Communications in the New Europe, edited by G. Giannopopulos and A. Gillespie (London: Belhaven), pp. 305-325.

Tramwayforum, 2019, Linien, Date of access: 14/05/2019. https://www.tramwayforum.at/index.php?board=19.0.

van Laak, D., 2018, *Alles im Fluss – Die Lebensadern unserer Gesellschaft – Geschichte und Zukunft der Infrastruktur* (Frankfurt a. Main: S. Fischer).

Vyjayanthi, R., 2015, Infra-City: speculations on flux and history in infrastructure-making. In: Infrastructural Lives – Urban Infrastructure in Context, edited by S. Graham and C. McFarlane (New York: Routledge), pp. 39-58.

Wien 3420 aspern development AG, 2019a, Master Plan, Date of access: 23/05/2019. https://www.aspern-seestadt.at/en/business_hub/planning__reality/master_plan.

Wien 3420 aspern development AG, 2019b, Fortschreibung Masterplan, Date of access: 23/05/2019. https://www.aspern-seestadt.at/jart/prj3/aspern/data/downloads/aspern_Fortschreibung_Masterplan_2018-02-01_1602399.pdf.

Wien Geschichte Wiki, 2019a, Seestadt Aspern, Date of access: 14/05/2019. https://www.geschichtewiki.wien.gv.at/Seestadt_Aspern.

Wien Geschichte Wiki, 2019b, General Motos Austria, Date of access: 14/05/2019. https://www.geschichtewiki.wien.gv.at/General_Motors_Austria.

Wien Geschichte Wiki, 2019c, Donauzentrum, Date of access: 14/05/2019. https://www.geschichtewiki.wien.gv.at/Donauzentrum.

Wien Geschichte Wiki, 2019d, Wiener Stadtwerke, Date of access: 14/05/2019. https://www.geschichtewiki.wien.gv.at/Wiener_Stadtwerke

Wien Geschichte Wiki, 2019e, U-Bahn, Date of access: 14/05/2019. https://www.geschichtewiki.wien.gv.at/U-Bahn.