
Sustainability or Connectivity?

The Neoliberal Logics of Train Station Area Development

Elena Bixel, M.A.
Freie Universität Berlin

Abstract: Addressing conceptual and empirical lacunae in existing work on train station (area) development (TSAD), this paper seeks to systematically bring into conversation research on TSAD with literature on neoliberal urbanization. Two major sets of driving factors for urban redevelopment have been identified by TSAD research: economic restructuring and concerns for sustainability. I argue that this conceptual dichotomy is problematic. Contemporary TSAD is overwhelmingly driven by the logics of neoliberalization: political actors use sustainability discourses to create place-based competitive advantages so as to attract business and capital by enhancing network connectivity and revalorizing central urban space. Using the mega-project “Stuttgart 21” in Germany as a case study I demonstrate that it is essentially designed to secure nodal functions of Stuttgart Central Station (enhance network connectivity) and upgrade the station and adjacent area (revalorize the urban core)—whereas questions of sustainability play a subordinated role at best.

For some thirty years now we have witnessed large-scale restructuring processes in cities trying to adapt to a situation that is commonly referred to as globalization. Urban infrastructures, especially transportation infrastructures, change their use, become obsolete, or need to be newly created. As a result, transport sites such as ports, airports, and railway stations are subjected to continuous redevelopment. Rather than treating globalization as an abstract concept of external flows of capital, commodities, and people that are driven by technological development and economic necessity—as dominant (neoliberal) discourses would have it—scholars of critical urban studies have emphasized the functioning of globalization processes through space, depending on physical support structures and producing and reproducing uneven spatial development patterns (Harvey 1989; Graham 2001; Vormann, forthcoming). This perspective directs our attention to the political character of globalization processes, i.e., the capitalist restructuring processes that constitute the motor of globalization and the politics of neoliberalism that serve as imperfect orientation guidelines for these processes to unfold in context-dependent and crisis-prone ways (Peck 2010).

Against this background, an increasing number of scholars have dedicated their research to the spatial impacts of both immaterial and material global flows and to the infrastructures that enable these flows. This emergent literature is, however, dominated by research on the transformation of (mostly North American) port cities, and harbor and postmodern waterfront development (see e.g., Hein 2011; Desfor et al. 2011; Vormann and Schillings 2013). Despite the fact that the redevelopment of railway stations is a common feature of almost every large city in Europe—one that comes with specific infrastructural challenges and that tends to be located in very visible city-spaces at that—train station (area) development (TSAD)¹ remains an under-studied topic (Peters and Novy 2012a; 2012c). This undoubtedly has to do with the fact that logistics infrastructures have long been neglected in urban studies. But it can also be attributed to the specifics of railways: in contrast to deserted inner-city harbors, railway stations are still in use and have a continuing—and even increasing—strategic importance in the European transportation system.

The scarce literature on TSAD of the last 20 years dealing with the driving forces of station redevelopment mostly lacks a theoretical perspective that embeds these processes within larger political-economic context (see for example Bertolini 1996; 1998; Bertolini and Spit 1998; Bertolini, Curtis, and Renne 2012; Loukaitou-Sideris et al. 2012). Only very recently have researchers identified train stations and their surroundings in Europe as key strategic sites of postindustrial urban restructuring under neoliberalism (Peters 2009; Peters and Novy 2012a; 2012c). The purpose of this paper is to contribute to this newly emerging scholarship by discussing TSAD in the context of neoliberalization processes, thereby linking TSAD to key concepts of regulation theory and theoretical debates on neoliberal urbanization.

I propose to distill from existing work two sets of driving factors for urban TSAD: the spatial dynamics of neoliberalization processes in the city, and the quest for sustainable development. I argue that contemporary train station (area) development is overwhelmingly driven by the first factor, and that the second factor plays a subordinate role at best—despite public rhetorics affirming the opposite. I argue that sustainability often serves as a rhetorical frame for project partners to increase the legitimacy of their projects. In this context, entrepreneurial urban governments increasingly deploy TSAD as a means to create place-based competitive advantages to attract (global) business and capital. This is reached mainly through two spatial strategies: enhancing network connectivity and revalorizing station-adjacent urban space. While environmental sustainability is emphasized in the development plans, the project contradicts, above all, the social component of sustainable development: TSAD is highly uneven, privileging a few high-profile locations in the trans-European high-speed rail network while disconnecting smaller nodes.

The train station mega-project “Stuttgart 21” is one of the largest and most controversial infrastructure projects currently underway in Germany and indeed all of Europe. It recently

¹This phrase has been coined in a special issue of *Built Environment*, which originated from an international symposium, “Rail Station Area Redevelopment Mega-Projects in Europe & Beyond” (Peters and Novy 2012b). The authors state that the “new acronym ‘TSAD’ is obviously a nod to the better-known acronym ‘TOD,’ or ‘transit-oriented development’” (Peters and Novy 2012c, 12). It is distinct from TOD in that TOD is a mostly U.S.-centered planning philosophy focusing on how to achieve sustainable settlement patterns beyond car dependency, whereas TSAD, for the authors, serves as a frame for the more European-centered debates on the “renaissance of the railways.” However, TSAD is not yet a coherent field of study (Peters and Novy 2012c).

sparked massive protests of local citizens, which received attention on a national scale.² Using the case of Stuttgart 21 as an example, I identify objectives of securing nodal functions of Stuttgart Central Station, and upgrading the station and adjacent inner-city areas, thereby demonstrating that the project is essentially designed to enhance network connectivity and revalorize the urban core. I show that environmental concerns do not play a driving role. Rather, sustainability arguments are employed on a regular basis in the planning discourse to reinforce a project that is apparently aiming at strengthening the city's economic performance and competitiveness.

The Driving Factors of Train Station (Area) Development

Railways and local public transportation have made an impressive return since the end of the functionalist planning era and the motor-traffic-oriented city in the 1960s. Since the mid-1980s, alongside the expansion of track infrastructure and high-speed rail (Banister and Hall 1993), extensive redevelopment of stations across Europe is under way (Bertolini, Curtis, and Renne 2012; Peters and Novy 2012c). However, there are only very few studies investigating the causes of the renaissance of railway stations.³ Initial research in this field by Luca Bertolini (1996; 1998) identified a series of interconnected driving factors to explain the rebirth of train stations: the expansion and upgrading of regional and high-speed rail; the deindustrialization of city centers that opened up space for redevelopment near train stations; the privatization of railway companies that pushed for marketing railway property; policies to increase the attractiveness of city centers and to promote more sustainable transport and land use patterns; real-estate booms caused by white-collar office developments; and, finally, metropolitanization in the context of globalization processes and European integration, which increased the need for high-speed connectivity.

Although these driving forces point to overarching political-economic changes taking place since the 1970s and 1980s, probably best known as the politics and economics of neoliberalism, TSAD has only very recently been reviewed in the light of theoretical debates on neoliberalization by the German researchers Deike Peters and Johannes Novy (Peters 2009; Peters and Novy 2012c; Novy and Peters 2012). Their helpful typology of railway station mega-projects in Europe is based on extensive empirical data and represents the state of the art in the research on TSAD. The set of driving factors of TSAD, which these authors list (Peters and Novy 2012a), largely correspond with Bertolini's findings, but, unfortunately, are not tested against their empirical results.

Besides the lack of theoretical perspectives of most of the literature on TSAD, existing re-

² This is an interesting side note to the study conducted here as it indicates resistance against neoliberal practices. For a treatment of the protests against Stuttgart 21 see Novy and Peters (2012). They analyze the events in the light of participation, legitimating, and power issues at stake in current mega-project planning and implementation and discuss the wider implications of the protests for future urban planning and decision-making in Germany. The main issues of contestation in the case of Stuttgart 21 are, according to the authors, cost and economic viability issues, transportation benefits and impacts, environmental costs/ecological risks, historic preservation/urban development, and decision-making/participation.

³ Note that the study of the expansion of rail infrastructure and the high-speed train is distinct from the study of railway station redevelopment. For the former see especially Hall and Banister (1993; 2013).

search tends to blur actual drivers and the political framing of station development. Various scholars speak of “goals” (Loukaitou-Sideris et al. 2012), “frames” (Bertolini, Curtis, and Renne 2012), or “perspectives” (Peters and Novy 2012c) of station development without systemically analyzing the driving forces.⁴ Peters and Novy (2012c), for instance, argue that there are two different analytical starting points for examining TSAD: an “urban revalorization/restructuring perspective” and a “sustainable transport and land-use perspective.” Although these authors are clear in what they mean by “perspective,” they arguably confuse perspectives and driving forces in the end. Instead of taking the opportunity to discuss the driving factors listed above in the light of their rich empirical findings, they simply state that TSAD has to be seen as being equally driven by normative sustainable development policy tenets as by urban revalorization/restructuring agendas (Peters and Novy 2012c). Moreover, this “conclusion” in no way reflects the empirical results that they present before they arrive at the conclusion. Rather, the empirical results suggest that sustainability only plays a minor role (or even none at all) while economic development and struggles over competitiveness prevail.⁵

In boiling the driving factors of train station development down to two components—economic restructuring and concerns for sustainability—Peters and Novy (2012c) help us to discern the major actors and rationales of redevelopment. However, as I will argue in the remainder of this article, this dichotomy prevents us from understanding how both these factors are intricately linked: As my empirical findings will show, sustainability discourses are appropriated by local actors and project partners to legitimize what are clearly elements of an uneven restructuring of urban spaces, which come at the price of much less sustainable development patterns.

⁴ Loukaitou-Sideris et al. (2012) mention four goals of high-speed rail station development: (1) transportation goals (to solve mobility gridlock), (2) environmental goals (to reduce fuel consumption and emissions), (3) economic development goals (to reactivate local economies), and (4) urban development/spatial restructuring goals (to trigger desirable patterns of development). However, it is not clear whose goals are referred to and if they are used as arguments to push projects or if they can be seen as external causes or drivers of project development. Bertolini, Curtis, and Renne (2012) speak of three different frames of station development over the last three decades. These are (1) “property capitalization,” which seemed to prevail in the 1980s, mostly driven by the privatization of national railways; (2) “urban mega-project,” most dominant in the 1990s and primarily driven by the expansion of high-speed rail infrastructure and efforts to boost the attractiveness of cities; and (3) “transit-oriented development,” predominant since 2000 and largely driven by the expansion of regional rail infrastructure and the quest for sustainable development. Again, it is not clear what exactly is framed and who frames it.

⁵ This shows in the descriptions of the four types of TSAD projects they identify (strategic mega-projects, station renaissance projects, transport development projects, and urban development projects), which often seem to be driven by less benign motivations than project developers’ rhetorics have it, and in the finding that contemporary rail development, on a broader geographic scale, is highly uneven. While there is considerable investment in stations along important high-speed train routes, Peters and Novy (2012c) find that smaller nodes in the network are increasingly neglected or even abandoned. Finally, the authors elsewhere address the issue of legitimizing neoliberal projects with sustainability arguments: “These new mega-projects are typically associated with—and legitimized by—a host of policy tenets, including the promotion of integrated land-use and transport development and the promotion of more environmentally friendly modes of transport. Ultimately, however, these projects remain overwhelmingly driven by local agendas for urban growth and competitiveness, which are in turn linked to general trends of post-Fordist restructuring and globalization” (Novy and Peters 2012, 139f.).

Neoliberal urbanization and TSAD

Critical urbanism scholars, in line with regulation theory, conceive of neoliberalism as an approach to capitalist restructuring: the strategic political response to the declining profitability of Fordist mass production and the crises of the Keynesian welfare state since the 1970s.⁶ As a regulatory fix of capitalist crises, neoliberalism consists in the “roll-back” (destruction) of redistributive Fordist-Keynesian policies, institutions, and arrangements and the “roll-out” (creation) of “more profitable” neoliberal equivalents (Peck and Tickell 2002; see also Brenner and Theodore 2002a; cf. Farmer 2011; Hackworth 2007). Generally, neoliberal policies are characterized by the privileging of the market mechanism over the state, thereby extending market discipline, competition, and commodification throughout all sectors of society. In North Atlantic states over the past four decades, state-controlled industries have been deregulated, public services have been shrunk and/or privatized and taxes on business have been lowered to “liberate” both the state from “inefficiencies” and capital from “unprofitable” taxation (Brenner and Theodore 2002a; Farmer 2011). The neoliberal cut-back of the state has resulted in a simultaneous upward (to the global scale) and downward (to the local scale) shift of regulatory power formerly owned by the nation-state and has produced a multi-scalar regulatory framework where local, national, and global scales interact (Brenner 2004; cf. Hackworth 2007).

Cities have been particularly affected by this reorganization of scales. The dissolution of Fordist state-level spatial planning and financing shifted the burden to provide mass infrastructure such as housing, transportation, communications, and utilities to urban governments. The resulting fiscal troubles led to increased inter-city competition for financial resources, forcing cities to adopt entrepreneurial practices (Farmer 2011). It has furthermore resulted in an array of new governance forms to ease financial austerity. This includes growing private sector involvement in decision-making, the institutionalization of different forms of cooperation between public, private, and non-governmental actors (as for example in public-private-partnerships (PPPs) and regional associations), and the reorganization of state-owned authorities as (semi-)privatized agencies (such as privatizing railway and port authorities) (Peters 2009). In order to guarantee timely and efficient implementation of urban development projects, local public participation mechanisms have often been disrespected, resulting in the strengthening of elite power and the integration of elite priorities into the projects (Swyngedouw, Moulaert, and Rodriguez 2002; Flyvbjerg, Bruzelius, and Rothengatter 2003). Contemporary urban governance is therefore characterized by a loss of public planning autonomy and the integration of powerful private and elite interests, resulting in a bias towards profitability and exclusivity at the expense of public benefits and equity.

⁶ Regulation theory examines how historically specific patterns of capital accumulation are “regularized” or stabilized within the inherent tendencies of recurring crisis of capitalism. The “regime of accumulation,” one of its core concepts, describes the social patterns of capital accumulation in periods of prosperity. The “modes of regulation” stabilize the regimes of accumulation by a range of laws, policies, institutions etc. (see Lipietz and Jenson 1987). Fordism describes the post-1945 boom until the mid-1970s in Western national states and was characterized by a system of coupled mass production and mass consumption via the linking of rises of national productivity to income rises for industrial workers. This is called the Fordist compromise, which was supported by companies, unions, and the government (cf. Vormann 2014).

Building on the notion of “neoliberalizing space,” the literature on neoliberal urbanization examines the spatial dynamics of neoliberal urban governance (Brenner and Theodore 2002c; Peck and Tickell 2002), processes also referred to as postindustrial, post-Fordist, postmodern, or neoliberal urban restructuring. Drawing on theories of the “production of space” (Lefebvre [1974] 1991), Brenner and Theodore (2002b, 343) conceptualize neoliberalization as “a strategy of political-economic restructuring that...uses space as its ‘privileged instrument.’”⁷ The primary aim of entrepreneurial urban governance is to mobilize urban space as a productive force, that is, to create and exploit place-based competitive advantages in order to attract (global) business and capital (Brenner and Theodore 2002a; cf. Farmer 2011). The “entrepreneurial” or “neoliberal city” (Clarke and Gaile 1998; Hall and Hubbard 1998; Short and Kim 1999; Hackworth 2007) improves its locational competitiveness by, e.g., granting local tax abatements, reducing public subsidies and regulations, and privatizing public services. To attract tourists, business, and affluent residents, it launches place-marketing campaigns, promotes real estate development, gentrification, and spaces of consumption.

Two major spatial strategies can be observed in contemporary urban restructuring. Theoretically they can be explained by the production of new forms of spaces. Castells (2000) argues that we are now living in a “network society,” where a new spatial logic emerges: Besides the “space of places,” which historically has been the physical expression of society, new social practices in the network society are constructing the “space of flows” today. The nodal points, i.e., the transport interchanges, of the network are confronted with the tension between the space of flows (of global connections) and the space of places (of local disconnections) (cf. Bertolini 1996; Albrechts and Coppens 2003). Competitive locational strategies therefore try to upgrade the space of places and/or the space of flows of the city. I deem them strategies of revalorizing urban space and strategies of enhancing network connectivity respectively.

In the context of the first strategy, a common agenda is captured by what is variously referred to as “urban renaissance,” “urban revitalization,” or “urban regeneration,” essentially aiming at revalorizing central urban land devalued by deindustrialization (such as unused industrial areas and waterfronts) and suburbanization to make urban cores livable and entertaining for the middle and upper classes again (Smith 2002). In the context of the second strategy, access to the city is improved and the expansion and upgrading of transportation, telecommunications, utility, and logistics infrastructure is promoted to profit from interregional and global flows of goods, people, capital, services, and information that create value in the “network society” (Castells 2000; Graham 2001; Graham 2010; McFarlane and Rutherford 2008). The large-scale (re-)development of urban infrastructure needed in both the revalorization and the network connectivity contexts provides the opportunity to stage iconic flagship mega-projects to further promote the city image. As a result, the urban fabric is being restructured on a massive scale.⁸

⁷ For radical geographers like David Harvey (2001, 23f.), “the production, reproduction and reconfiguration of space have always been central to understanding the political economy of capitalism.” This is due to the fact that the process of capital accumulation “necessarily unfolds through the production of historically specific patterns of sociospatial organization in which particular territories, places, and scales are mobilized as productive forces” (Brenner and Theodore 2002a, 354).

⁸ The privileging of locales and projects proving competitive at the expense of others and the integration of powerful interests in urban planning has direct spatial implications. Whereas the Fordist

Against this backdrop the massive redevelopment of railway stations across Europe does not come as a surprise. Transportation systems lie at the heart of neoliberal urban restructuring to create place-based competitive advantages (Keil and Young 2008; Farmer 2011) because, as Farmer (2011, 1156) points out, “transportation represents a fixed, place-based geographic element where the local and the global interact; where global processes shape local geographies and where local politics shape global networks.” The remaking of inner-city rail stations and their surroundings offer city officials the chance to stage large-scale projects to promote the regional and global competitiveness of their city. In fact, train stations are a priority focus of urban renaissance agendas exactly because they offer opportunities to both revalorize central city space and enhance intra- and inter-urban connectivity. This has to do with the special spatial characteristics of train stations and their surroundings: The train station functions as a node within a mobility network while the train station area has place qualities within the city (Bertolini 1996; 1998).⁹ Train station area development seeks to maximize both land exploitation and infrastructure flexibility, which are the priorities of property development and transport development, respectively (Bertolini 1998).

Let us briefly recapitulate the driving factors of TSAD that can be found in the existing work: the advent of high-speed rail, the deindustrialization of city centers, the privatization of national railways, the sustainability paradigm, and the urban restructuring processes as part of globalization. I argue that applying the theoretical frameworks of regulation theory and neoliberal urbanization allows us to better capture the underlying political and economic dynamics of the drivers and assess their individual weights. When revisiting the driving factors in the light of neoliberalization we realize that all but one are connected to the politico-economic changes of the last thirty years. The deindustrialization of Western city centers is the consequence of a global reorganization of production processes in reaction to the decline of the Fordist accumulation regime. Harbors, freight yards, and other industrial sites emerge as ruins of the decayed Fordist accumulation infrastructure.¹⁰ The marketing of the deindustrialized land by city councils and railway companies thereafter can be attributed model of urban infrastructure provision of the 1960s and 70s aimed at the production of “standardized public infrastructural monopolies” to grant “universal, nation-wide access to standard social services” and promote “national sociospatial cohesion and interregional redistribution” (Brenner 2004, 245), contemporary post-Fordist, neoliberal urbanization processes produce highly uneven geographical development and enormous social inequalities (Harvey 2006). As “the privileges of the rich and the disadvantages of the poor are compounded increasingly through geographic means” (Graham and Marvin 2001, 221), the city becomes spatially partitioned and socially polarized. Neoliberal infrastructure provision has been associated with infrastructural unbundling and “urban splintering” (Graham and Marvin 2001) and the production of “premium network spaces” (Graham and Marvin 2001) or “premium networked infrastructural configurations” whose goal is to “promote particular urban locations as key nodes within global and European capital flows and transport networks” (Brenner 2004, 245). This is all the more problematic, as urban mega-project realization still heavily relies on the public sector. The high degree of public spending stands in stark contrast to the little benefit the projects generate for the overall public and the uneven development of the wider metropolitan area (Swyngedouw, Moulaert, and Rodriguez 2002; Graham 2001).

⁹ Note that the station building itself can function as both a node and a place.

¹⁰ Fordist economic geographies concentrated industrial and logistic activities for technical reasons in cities. In the context of containerization and the relocation of production steps abroad, production processes were globally restructured. The coupling of mass production and consumption was broken up in favor of just-in-time production in global production networks. This transformation materializes in urban space where industry and harbors lost their functions and became obsolete (Vormann 2014).

to neoliberal efforts of value extraction from property. The privatization of railways follows the neoliberal logic of the superiority of markets. The urban restructuring processes are the direct consequence of neoliberal urban governance.

The boost of high-speed rail, however, has to be examined more closely. It results, first, from the Trans-European Transport Network (TEN-T) program, within which the EU prioritized fourteen corridors and projects dedicated to the development of high-speed rail lines (European Commission 2005; Directorate-General for Mobility and Transport 2010), and second, from the “intermodality imperative” of EU transport policy—the goal of integrating different modes of transportation (Peters and Novy 2012c). For one thing, intermodality ought to encourage transport shifts from road to rail.¹¹ But the EU has also increasingly promoted the integration of airports with high-speed rail (HSR) stations as a means to augment Europe’s global competitiveness and economic integration (Directorate-General for Mobility and Transport 2010; cf. Graham 2001). Both the European HSR network and the goal of intermodality are motivated—according to EU statements—by efforts to enhance competitiveness and to contribute to sustainable transport (European Commission 2005; Summaries of EU Legislation 2013). The practical experience of European-wide high-speed rail development, however, is highly uneven and contradicts the aim of social and environmental sustainability. Peters and Novy (2012c) find that while there is considerable investment in stations along important high-speed train routes, smaller nodes in the network are increasingly neglected or even abandoned. They also note that the “buzzword of ‘intermodality’” is more and more used to promote TSAD projects where transportation goals do not play the main role, but where the largest part of redevelopment is dedicated to the surrounding urban areas (Peters and Novy 2012c).

In conclusion, I argue that the advent of high-speed rail in Europe is in large part due to neoliberalization as well. This leaves us with one driving factor that cannot directly be linked to neoliberalism: the quest for sustainable development. Both neoliberalism and the sustainability paradigm stem from contemporary capitalist crises: neoliberalization is a result of the Fordist crisis, and the quest for sustainable development is a result of the “ecological crisis” of capitalism, which has been prevailing since major environmental problems of the capitalist production mode surfaced.¹²

I therefore distill two sets of driving factors: “the spatial dynamics of neoliberalization processes in the city” and “the quest for sustainable development.” That said, I immediately have to nuance my theoretical argument. This is crucial to note because, if we look at train station development discourses today, we might tend to forget the actual key goals of TSAD as a critically inspired perspective on neoliberalization processes reveals them to us. In these discourses, which I will address in more depth shortly, we might even come to think that transport and property development are just means to the end of a more sustainable urban future—that environmental concerns are increasingly trumping economic instrumen-

¹¹ “The capacity to combine different modes of transport in a flexible way is one of the cornerstones of the ‘sustainable mobility’ concept, which underlies European transport policy” (Summaries of EU Legislation 2013). This is especially emphasized in the context of freight transport as a means to encourage freight shifts from road to rail, but applies to passenger transport as well.

¹² The ecological crises is dealt with in the context of ecological Marxism, which analyzes the inherent socio-ecological contradictions of the capitalist production mode (Dietz and Wissen 2009), and in the context of regulation theory as part of the concept “regulation of the ecological crises” (see for example Brand and Wissen 2011).

talities. I argue that this conceptual dichotomy between economic and ecological factors is problematic. It prevents us from understanding how both rationales are intricately linked and how environmental arguments are frequently appropriated by actors with less benign motivations. While contemporary TSAD is often legitimized by the growing relevance of railway transportation for sustainable mobility, it is in fact overwhelmingly driven by the logics of neoliberalization: political actors use sustainability discourses to create place-based competitive advantages so as to attract business and capital.

And why is this problematic? Because neoliberalization processes are not a simple development towards the pacification of nature and urban life, but a set of class-based uneven development processes from which some benefit and some lose. The problem with sustainability discourses, then, is that they obfuscate and depoliticize these highly political decisions over the future of the city. I argue that in the context of the spatial dynamics of neoliberalization there are two major spatial strategies to improve competitiveness that are specifically relevant to train stations and their surrounding areas due to their specific spatial characteristics as both nodes and places: first, “enhancing connectivity” of the city within regional and supra-regional networks, and second “revalorizing urban space” targeted towards the extraction of value from property.

The case of Stuttgart 21 is a perfect example to empirically illustrate and undergird my theoretical argument: Stuttgart 21 is essentially designed to secure nodal functions of Stuttgart Central Station (enhance network connectivity) and upgrade the station and adjacent area (revalorize the urban core). It is therefore predominantly driven by the spatial dynamics of neoliberalization whereas questions of sustainability play a subordinated role at best.

A Case of Neoliberal Train Station (Area) Development: The Mega-Project “Stuttgart 21”

The origins of Stuttgart 21 lie in a considerable reorientation of the German federal spatial development and transportation policy in reaction to German reunification and the process of European integration in the late 1980s and early 1990s. Besides the objective of strengthening the transport links between East and West, the national policy emphasized the creation of “European Metropolitan Regions” (EMRs) and a German high-speed rail network to contribute to an emerging European-wide rail network that later became part of the Trans-European Transport Network (TEN-T) (Wolfram 2003). The EMR concept has to be understood as the German “answer to the challenge of globalization” (Wolfram 2003, 160). As “motors of growth,” the seven German EMRs are intended to maintain and enhance the economic performance and competitiveness of Germany and Europe.

Stuttgart, the 600,000-inhabitant capital of the southwestern state of Baden-Württemberg, was designated to become the center of an EMR. The 1992 Federal Transport Infrastructure Plan (FTIP; Bundesverkehrswegeplan) included an extension of the existing high-speed track between Mannheim and Stuttgart to Munich via Ulm. Originally, the old line between Stuttgart and Ulm was meant to be upgraded and service a new HSR station which was to be built a few kilometers away from the center because, with its location in a caldera and its terminus, the Stuttgart rail node presented a transportation bottleneck (Reuter 2001). However, city officials were not enthusiastic about bypassing the city center because they feared

losing business, which is why a Stuttgart transportation expert proposed to construct a new line along the autobahn and build tunnels and an underground through station to let the route pass through the center. In April 1994, a preliminary project sketch named “Stuttgart 21” was presented to the public. It had been agreed upon by the public-private partnership of the newly privatized¹³ national railway company (DB, short for Deutsche Bahn AG); the federal government; the state (Land) of Baden-Württemberg; the city of Stuttgart; and the association of the Stuttgart region (VRS, short for Verband Region Stuttgart).

Founded in 1994, the VRS has to be seen as the effective institutional operationalization of the EMR framework (Wolfram 2003).¹⁴ The project plan now envisaged the conversion of the above-ground central terminal into an underground through station to accommodate the new HSR track and all other local and mid-range rail, and a second HSR station at the airport to connect the airport and the likewise proposed new trade fair with the HSR track, both located in proximity to each other on the outskirts of the city. The relocation of the central station by 90 degrees, including its entry and leaving lines, would give way to the redevelopment of a more than 100-hectare area covered with rail tracks rendered useless (see figure 1). Very importantly, the revenues from the sales of the freed-up railway land which belonged to DB were expected to cover the costs for the transport infrastructure constructions (Wolfram 2003; Reuter 2001). Stuttgart 21 was therefore celebrated as the “synergy concept” that would combine the necessary overhaul of the rail transportation system with the possibility for profitable restructuring of the city center (Wolfram 2003; Reuter 2001). The DM 5 billion (about €2.5 billion or US\$3.4 billion) project could now undergo the usual steps in German planning procedures.

¹³ In January 1994, the Eastern and Western public railway companies were fused and legally privatized, but with the federal state as the owner (Wolfram 2003).

¹⁴ To effectively tackle the new responsibilities for regional infrastructure provision that came with the designation of Stuttgart as EMR, the Land initiated the institutional framework of the VRS (Wolfram 2003). The VRS is not an additional government level, but rather shifts competencies and budgets towards the urban region level. It decides on regional development, landscape, and transport plans; is the S-Bahn authority; and can take initiative in the fields of sports, culture, congress, and trade fair at the scale of the urban region. It has agencies for tourism, marketing, and economic promotion, which closely cooperate with the chamber of commerce (Wolfram 2003).



Figure 1. Location of the new central station, turned by 90°. Photograph: Manfred Storck. Source: bahnprojekt-stuttgart-ulm.de

However, since 1999 the project development has stagnated for several reasons. Changes in the DB executive board and the federal transportation ministry resulted in the recalculation of the financing concept, casting doubt on the economic feasibility of the project. Furthermore, DB experienced financial deficits after the reorganization of German railroading and admitted that it had miscalculated with respect to other large-scale projects planned at that time. Moreover, the station-adjacent real estate did not sell well. Therefore DB postponed the final decision about the project several times between 1999 and 2000 (Wolfram 2003; Reuter 2001). It was only through massive intervention of the city, the region (VRS), and the Land that Stuttgart 21 persevered. In 2001, the city purchased almost all of the land dedicated to conversion from DB at well over market price (Novy and Peters 2012). Simultaneously, the Land entered into a long-term concession for regional rail (S-Bahn) operation, with DB very favorable for the latter (thereby undermining EU competition law) and bought additional rolling stock from DB in order to bolster its case (Wolfram 2003). Also the VRS indicated that it was willing to financially contribute if costs for S-Bahn or regional transport increased (Wolfram 2003).

The fate of Stuttgart 21 remained unclear for the next years. The insecurity could only be lifted when the then-prime minister of Baden-Württemberg approached the federal government responsible for HSR development, offering to cofinance the Stuttgart-Ulm high-speed track. In July 2007, all actors involved—federal and state governments, city and regional councils, and DB—signed a memorandum of understanding. In December 2007, the city

council refused to hold a public referendum on legal grounds despite the fact that more than enough signatures supporting the request had been collected. This marked the start of mass demonstrations against the project. In April 2010, a revised financing agreement was concluded, with costs now amounting to € 4.1 billion (US\$5.6 billion), and in August 2010 construction began, followed by large-scale protests with up to around 100,000 people (Lösch et al. 2011; Novy and Peters 2012; Spiegel Online 2010).

The financing conflict and enormous cost increase of Stuttgart 21 exemplify the unevenness of train station area development and its inherent dynamics of creative destruction in neoliberal times. When it became apparent that federal transport funds were meager and DB had miscalculated, the lower government levels had to see to financing (more of) the project themselves if they wanted it to be realized according to their time frame (Wolfram 2003)—at the expense of neglecting investments elsewhere: Stuttgart 21 will channel state transportation funds for a period of fifteen to twenty years to the capital's mega-project and the HSR line Stuttgart-Ulm. Especially in the Land's other big metropolitan area, the Rhine-Neckar region, necessary developments will be postponed and important developments regarding regional rail (Südbahn, Rheintalbahn, and Bodensee-S-Bahn) are at risk (Lösch et al. 2011). Moreover, the privileging of Stuttgart 21 in state planning considerations already has resulted in the shut-down of other long-distance rail lines in the state of Baden-Württemberg, such as the connections between Stuttgart and Würzburg, Stuttgart and Nuremberg, and Stuttgart and Zurich (Kopfbahnhof 21 2013b).

Enhancing Network Connectivity and Revalorizing Urban Space

The transport infrastructure component of Stuttgart 21 envisages a major reorganization of the Stuttgart rail node. It involves converting the terminus station into an underground through station (including digging more than thirty km of tunnels), building an additional underground HSR station at the airport and trade fair as well as an S-Bahn station in one of the emerging new quarters, and constructing part of the new HSR line between Stuttgart and Munich (Stuttgart-Ulm; see figure 2). The improved transportation situation in Stuttgart is projected to increase the number of trains and passengers processed per day, reduce stop and transfer times (Bahnprojekt Stuttgart-Ulm 2013a), and reduce travelling hours to major German and European cities. In addition to that, travel time to the airport and the new trade fair will be reduced to an eight-minute non-stop ride compared to the current half-hour journey with at least one transfer (Reuter 2001).

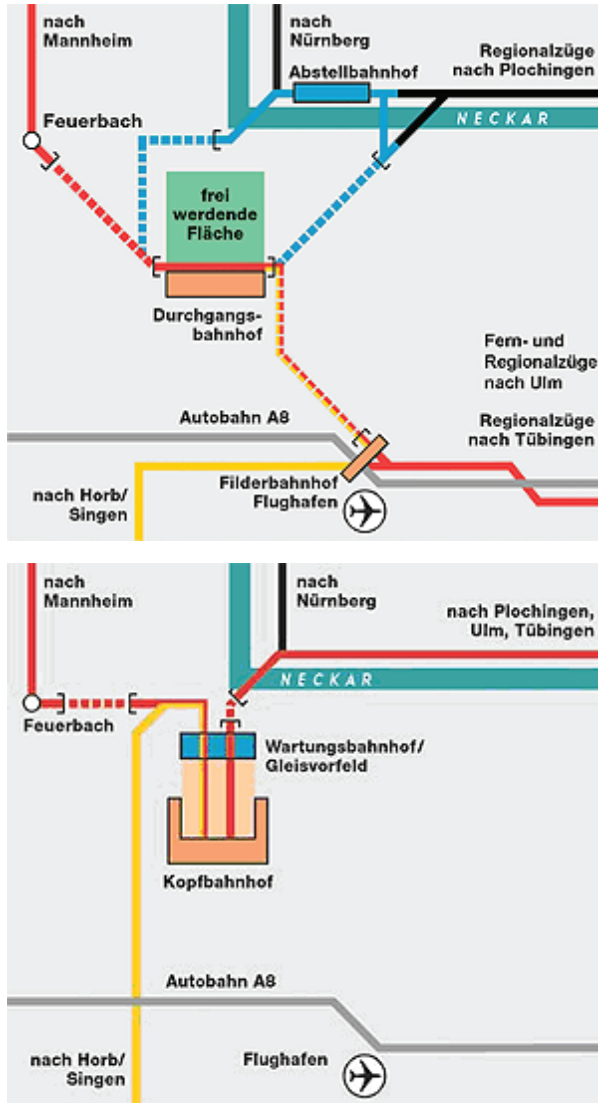


Figure 2. The Stuttgart rail node before and after Stuttgart 21. Source: bahnprojekt-stuttgart-ulm.de

The HSR line Stuttgart–Munich proposed by the 1992 Federal Transport Infrastructure Plan forms part of two major rail transport corridors prioritized by a European infrastructure master plan of the International Union of Railways (UIC) in 1989, which later served as a framework for EU rail development policy, particularly the TEN-T. The construction of a

new intercity rail station outside the center of Stuttgart would have undoubtedly meant disconnecting Stuttgart Central Station from the emerging trans-European high-speed rail network and the German network of European Metropolitan Regions, and dissolving its nodal function of interconnecting local, regional, and long-distance rail services. The city and the region feared that the “bypass” of the city center would result in a loss of competitive location advantage and have negative consequences for the urban economy (Wolfram 2003), which, like every other region in Germany and Western Europe, had been negatively affected by deindustrialization and the effects of global market integration (Basten 2011). Maintaining the network connection of the Stuttgart inner-city rail node was deemed essential for the future growth of the city. In this context, the Stuttgart 21 transport concept provided the city, the region, and the state of Baden-Württemberg with several advantages. It promised not only to keep Stuttgart Central Station in the network, but also to solve the bottleneck situation that has prevailed for many decades, and to effectively connect the emerging central quarters to local transportation and long-distance rail.

DB and the federal government initially were not concerned about bypassing the city center, in contrast to the priorities of the city, the region, and the Land. A second Stuttgart station servicing the intercity traffic would have provided a solution for extending the Mannheim-Stuttgart track to Munich just as well. However, the “synergy concept” of Stuttgart 21 eventually convinced DB for several reasons. Stuttgart 21 would provide the railway company with the opportunity to accelerate travel times, overhaul old infrastructure, and enhance infrastructural capacity, and prove its adaptive capacity in engineering and design issues with a new flagship station (Reuter 2001). Moreover, the newly privatized company was eagerly searching for ways to extract value from its land properties (Novy and Peters 2012). Stuttgart 21 presented the ideal possibility of combining these goals and by the same token avoiding any costs for the construction of the new infrastructure by cross-financing it with the revenues from its inner-city property holdings (Reuter 2001).

However, the actual capacity of Stuttgart 21 can be questioned. Opponents emphasize that it is important to evaluate the two main components of the project, the new HSR line and the through station, independently. The travel time reductions on key intercity journeys do not arise from the through station, but from the new HSR line between Stuttgart and Ulm (BUND and VCD 2007). The new line has, conversely, only advantages for passenger traffic as it will be too steep for freight trains (Kopfbahnhof 21 2011). Whereas the new line seems to at least provoke some passenger shifts to rail, the central station mega-project—according to opponents—does not make any difference for a sustainable transport concept. On the contrary, it has destructive effects for local and regional rail transportation. For geological and financial reasons, the new station will have only half as many tracks as the old one. The problems of this concept (no backup capacity in case of disruption, high probability of delays because two trains stop at one platform) will far outweigh the comparably low time savings of the through station (BUND and VCD 2007). Moreover, although the underground station is projected to increase average capacity by 30 percent, it can process fewer trains in peak hours—which cuts sustainable commuting opportunities—and does not permit extension (Palmer 2010). Very importantly, with half the amount of tracks, Stuttgart Central Station cannot serve as a hub for the statewide integrated regular timetable anymore, which means serious disadvantages for local and regional rail transportation (Kopfbahnhof 21 2011). Critics therefore have argued that the two main components of the project are purposely linked to obfuscate the dispensability of the expensive mega-station.

Early on, they elaborated an alternative proposal that combined the positive effects of a refurbished inner-city terminus for the regional rail network with the time savings of the new HSR line (Architektur-Forum Baden-Württemberg and Umkehr Stuttgart 2013; BUND and VCD 2006; BUND and VCD 2007). The capacity of this concept has been repeatedly scientifically confirmed (BUND and VCD 2007). However, although the capacity of the through station was seriously challenged and project developers were presented with an inner-city alternative, they never really considered the proposal. This suggests that they had other reasons to cling to Stuttgart 21.

Against the geographic and economic background of Stuttgart, it becomes apparent why city officials were so enthusiastic about Stuttgart 21. As Stuttgart is situated in a rather narrow caldera it has had to cope with a scarcity of land ever since the industrial boom resulted in expanding growth. In addition, since the completion of the existing terminus station in 1928, an extensive railroad embankment of entry lines has consumed central space and divided the urban core in the valley. This situation did not promise to change for a long time, which is why the city center, unable to renew itself and expand, lost its attractiveness to many powerful taxpayers of the region. They began to suburbanize and direct their investments towards outer growth poles (Reuter 2001). In the beginning of the 1990s, Stuttgart experienced major economic problems. The once-booming industrial region had to deal with the reorientation of important local firms towards other business locations and the cut-back of jobs. Its image as a strong industrial city became endangered and Stuttgart was increasingly challenged by intercity competition with Munich and Frankfurt and the smaller growth poles in the wider metropolitan area (Reuter 2001; Basten 2011).

The urban development component of Stuttgart 21 seems to be the all-in-one solution for the manifold problems of the city—a one-time chance to facilitate the revitalization and growth of the city. The redevelopment site makes up the very core of the city, comprising over 100 hectares of centrally located land. The master plan envisages the creation of two new urban quarters, one named “Europaviertel” and one called “Rosensteinviertel” (see figure 3). The former will be located in ultimate proximity to the main station and all important administrative functions of the capital. It is designed to accommodate office and retail space, hotels, restaurants, public squares, and some housing. The latter connects the to-date separated northern and eastern parts of the center and is devoted to a mixture of living and working.



Figure 3. Aerial view of the redevelopment site. Photograph: Manfred Storck. Source: bahnprojekt-stuttgart-uhl.de

The resulting open area would help resolve the issue of land scarcity without needing to expand into suburbia. Condensing the core at the expense of geographical expansion would meanwhile present a sustainable form of city growth. At the same time, the remaking of the urban core would improve the city's image by increasing its attractiveness. The division of the core would be resolved. The newly emerging quarters, with their valuable location in proximity to the central business district, central parks, and other recreation areas and their excellent future transportation connections, could possibly convince outward-oriented taxpayers to stay in town and buy a flat or an office in the center. The main station flagship project would create additional supraregional attention and improve the city image. Along the way, the realization of the project would boost the urban economy by creating several thousand new jobs during the construction period and resulting in supply effects for local and regional firms (Reuter 2001).

The findings of this case study underscore that the driving factors of Stuttgart 21 and planners' motivations had little to do with sustainability and that Stuttgart 21 essentially is an "urban development project in disguise of a transport infrastructure project" (Kopfbahnhof 21 2013a). The decision to undertake major rail transport infrastructure modifications in Stuttgart was triggered mainly by two spatial development concepts envisaged in the 1992 Federal Transport Infrastructure Plan: first, the UIC program of a European HSR network, particularly the designation of priority trans-European HSR corridors, two of which should cross the Stuttgart region, and second, the German EMR program with its designation of

Stuttgart as a metropolitan region of “European rank.” From the federal government’s perspective, the construction of HSR facilities in the Stuttgart region was essential in terms of enhancing the competitiveness of the Stuttgart EMR, and was therefore put on the agenda via the Federal Transport Infrastructure Plan. HSR integration would ensure inter-EMR accessibility and the connection with the trans-European HSR network and international airports (Wolfram 2003). However, the “synergy concept” of Stuttgart 21, as opposed to the federal government’s plan to construct a new peripheral HSR station, was the idea of local officials and was aimed at both keeping inner-city locales connected and revalorizing the urban core. In thinking about how to avoid the “feared bypass,” they began considering moving the station and tracks underground, which was precisely when the enormous opportunities of urban redevelopment appeared. The idea of a renaissance of Stuttgart captivated the city administration henceforward. Also, DB’s approval of the synergy project is clearly rooted in the neoliberal restructuring of the German railway system, i.e., the privatization of the company. The possibility of commercially exploiting its extensive inner-city property holdings and overhauling its infrastructure without any additional costs naturally appealed to those advocating the new entrepreneurial course.

When in the end of the 1990s it became apparent that the dream of the self-financing project would not come true, DB quickly withdrew, as it had no strategic interest in rebuilding Stuttgart Central Station. For the same reasons, support from the federal government faded. They both could do with a much less expensive long-distance rail station outside the center. The great efforts of the urban, regional, and eventually also the state government to secure the project in its proposed formulation indicate that, for them, Stuttgart 21 is a much-needed and wanted program to boost the urban economy and a means to attract public and private capital. Meanwhile, an opponents’ proposal to connect Stuttgart to the European HSR network by keeping the terminus station has existed since 1998. This would have sufficed to integrate the high-speed train as proposed in the FTIP and keep key inner-city locales connected to emerging networks. It also challenged the capacity of the new through station and showed that the refurbishment of the terminus was a cheaper and more capable alternative. However, the city never showed interest in alternative redevelopment concepts. In fact, Wolfram (2003, 181) shows that “in the elaboration of the space-functional programme the HST [high-speed train, E.B.] actually does not [original emphasis] play the dominant role that it is attributed for the support of the project as a whole.” This corresponds with findings of Peters and Novy (2012c), who emphasize that “intermodality” or transportation infrastructure needs are often only rhetoric to push large-scale urban development projects. In the case of Stuttgart 21, the underground through station, which was needed to give way to the valuable redevelopment area, could only be pushed because it was discursively linked to the new rail line and so could claim the benefits of the latter for the project as a whole.

Planning Discourse and the Sustainability Paradigm

Discourses around sustainability seem to have become one-size-fits-all rhetorical strategies for TSAD and urban development more broadly. In his discourse analytical study of the integration of the high-speed train in four European cities, Marc Wolfram (2003) finds that the planning discourse of Stuttgart 21 shows a remarkable convergence of arguments of all actors involved. He attributes this to a coincidence of the policy orientations of the

federal, state, regional, and local governments and the rationalization strategy of DB. The common points of reference were the two programs “European Metropolitan Regions” and “Trans-European Networks.” Within these frameworks the arguments upon which all project partners drew were “competitiveness,” “economic development,” and “environmental benefits,” frequently aligned in the term “sustainable development.” Furthermore, the objective of “network connection” or “accessibility” played an important role, particularly in relation to the location of the HSR station (Wolfram 2003).

The aim of “sustainable spatial development,” which made its way into German spatial planning policies over the 1990s, strengthened the concepts of the trans-European HSR network and the EMRs, emphasizing their environmental aspects. It has to be mentioned that in Germany the EMR concept generally is considered a form of “sustainable development or growth” and an intact environment is seen as an important location factor. By this, Wolfram (2003, 180) finds, “the dualism of economy and ecology is rhetorically resolved in statements of ‘mutual conditioning’ and the denial of inherent contradictions.”

As shown, the station redevelopment in Stuttgart was neither triggered by environmental concerns, nor can a considerable improvement of the local and regional rail transportation be expected, which has been pointed to by opponents all along. Nevertheless, environmental arguments, such as the beneficial effects of transport shifts for emission reductions and conversion of inner-city land for relieving outward city growth pressure, were employed on a regular basis by all project proponents (Wolfram 2003). This can be witnessed from early documents like the synergy concept (Deutsche Bahn AG 1995) to an extensive section on the environmental benefits of the project on its promotional website and even a promotional video dedicated solely to “Stuttgart 21 and ecology” (Bahnprojekt Stuttgart-Ulm 2013b; 2014). With respect to the argument of modal shifts to the railways, DB definitely employed its figures manipulatively (Wolfram 2003). Wolfram concludes for the case of Stuttgart 21:

Therefore the “environmental bonus” of the railways seems to impede a discussion of more global effects of the different projects. Though reduced transport emissions or land consumption are only hypotheses difficult to prove or refute, especially in a future perspective, their apparent logic tends to convince. Thus, all actors coincide in arguing that the HST network and the project Stuttgart 21 support a “sustainable (urban) development.” (Wolfram 2003, 180)

This suggests that sustainability is not one of the major motivations of the project partners. It is rather a means to reinforce and justify their proposals, which are overwhelmingly driven by economic concerns. These main objectives are the enhancement of network connectivity and the revalorization of urban space—firmly rooted in neoliberal development rationales, and much less sustainable than these discourses suggest. Stuttgart 21, then, provides an excellent example of how urban sustainability discourses have been appropriated and co-opted by local actors, planners, and city-branders, to sugarcoat processes of prestigious and overpriced urban renewal with highly disputable benefits for the overall public.

Conclusion

The aim of this paper was to fill a research gap concerning the driving forces of contemporary train station (area) development and to contribute to newly emerging scholarship that links TSAD in Europe with postindustrial urban restructuring. I have discussed empirical evidence on TSAD projects in the light of theoretical debates on neoliberal urbanization in order to distill from existing research the two driving factors identified in such projects: the spatial dynamics of neoliberalization processes in the city and the quest for sustainable development. In contrast to existing work, I have argued that contemporary TSAD is predominantly driven by the spatial dynamics of neoliberalization processes in the city while the quest for sustainable development plays only a minor role. This conceptual dichotomy employed by other researchers in the field distracts our attention from the fact that sustainability is often used to legitimize neoliberal TSAD projects. Moreover, I have argued that two spatial strategies to enhance cities' competitiveness particularly apply to TSAD due to the specific spatial characteristics of train stations as both nodes and places: enhancing nodal functions and the network connectivity of the station, and revalorizing station-adjacent places.

The case study of Stuttgart 21 confirms these hypotheses. The project was triggered by two sets of policies, the trans-European high-speed rail network and the German project of "European Metropolitan Regions." Whereas both of these policies are said to have the goals of enhancing competitiveness of the EU and Germany and to contribute to sustainable transport and settlement patterns, the planning process shows that the quest for sustainability plays a significantly less important role in driving the project than the spatial dynamics of neoliberalization: the project outline is designed to keep key inner-city locales connected and revalorize the urban core while actually lacking a capable concept for sustainably integrating local, regional, and high-speed rail. In fact, the analysis suggests that the sustainability paradigm is appropriated by neoliberal agendas as the environmental benefits aspect of the TEN and EMR frameworks give project partners the opportunity to mobilize the environment as a place-based and economic advantage.

Akin to similar developments in other neoliberal urban development projects, the planning process of Stuttgart 21 is characterized by a lack of democratic participation and legitimacy. Local opposition has been largely ignored since its inception. When the local population took to the streets in a major outbreak of dissatisfaction following the beginning of construction, the city witnessed political violence unprecedented in its history (Freudenreich 2010). However, the massive protests Stuttgart 21 has sparked give reason to believe that large-scale neoliberal infrastructure projects will have to deal with public contestation in the future. The transfer of the city's property holdings in the Rosenstein area to a municipal enterprise and the management of the area's development by a public trust that includes the ideas of citizens are the result of a mediation process between proponents and opponents and demonstrate that a more equal and integrated urban planning might become possible. ■

I deeply thank Boris Vormann for his continuous advice and support in writing this paper, and Alena Kern for her valuable comments.

REFERENCES

- Albrechts, Louis, and Tom Coppens. 2003. "Megacorridors: Striking a Balance Between the Space of Flows and the Space of Places." *Journal of Transport Geography* 11 (3): 215–24.
- Architektur-Forum Baden-Württemberg, and Umkehr Stuttgart. "Die Alternative: Stuttgart 21 mit Kopfbahnhof." Accessed March 17, 2013. http://www.vcd-bw.de/themen/s21/konzept1998/S21_Die_Alternative_Stgt_21_Kopfbhf_Architektenforum_5-1998.pdf.
- Bahnprojekt Stuttgart-Ulm. 2013a. "Hauptbahnhof Stuttgart." Accessed March 15, 2013. <http://www.bahnprojekt-stuttgart-ulm.de/details/neue-bahnhoefe/hauptbahnhof-stuttgart/>.
- . 2013b. "Vorteile und Nutzen." Accessed May 05, 2014. <http://www.bahnprojekt-stuttgart-ulm.de/ueberblick/vorteile-und-nutzen/>.
- . 2014. "Stuttgart 21: Die Ökologie." [promotional video]. Accessed May 04, 2014. <http://www.bahnprojekt-stuttgart-ulm.de/dialog/statements/themen/#c2151>.
- Banister, David, and Peter Hall. 1993. "The Second Railway Age." *Built Environment* 19 (3/4): 157–62.
- Basten, Ludger. 2011. "Stuttgart: A Metropolitan City-region in the Making?" *International Planning Studies* 16 (3): 273–87.
- Bertolini, Luca. 1996. "Nodes and Places: Complexities of Railway Station Redevelopment." *European Planning Studies* 4 (3): 331.
- . 1998. "Station Area Redevelopment in Five European Countries: An International Perspective on a Complex Planning Challenge." *International Planning Studies* 3 (2): 163–84.
- Bertolini, Luca, Carey Curtis, and John Renne. 2012. "Station Area Projects in Europe and Beyond: Towards Transit Oriented Development?" *Built Environment* 38 (1): 31–50.
- Bertolini, Luca, and Tejo Spit. 1998. *Cities on Rails: The Redevelopment of Railway Stations and their Surroundings*. London: E & FN Spon.
- Brand, Ulrich, and Markus Wissen. 2011. "Die Regulation der ökologischen Krise: Theorie und Empirie der Transformation gesellschaftlicher Naturverhältnisse." *ÖZS* 36 (2): 12–34.
- Brenner, Neil. 2004. *New State Spaces: Urban Governance and the Rescaling of Statehood*. Oxford, UK: Oxford University Press.
- Brenner, Neil, and Nik Theodore. 2002a. "Cities and the Geographies of 'Actually Existing Neoliberalism.'" *Antipode* 34 (3): 349–79.
- . 2002b. "Preface: From the 'New Localism' to the Spaces of Neoliberalism." *Antipode* 34 (3): 341–47.
- , eds. 2002c. "Spaces of Neoliberalism: Urban Restructuring in North America and Western Europe." Special issue, *Antipode* 34, no. 3.
- BUND, and VCD. 2006. "Kopfbahnhof 21: Die Alternative zu Stuttgart 21 mit Flughafenbindung." Accessed May 03, 2014. <http://www.kopfbahnhof-21.de/fileadmin/downloads/Broschueren/kopfbahnhof.pdf>.

———. 2007. “Der Bahnhof mit Köpfchen: Kopfbahnhof 21.” Accessed May 03, 2014. http://www.vcd.org/fileadmin/user_upload/redakteure_2010/vcd_aktiv/stuttgart21/Kopfbahnhof_21_2007_screen.pdf.

Castells, Manuel. 2000. *The Rise of the Network Society*. Cambridge, MA: Blackwell.

Clarke, Susan E., and Garly L. Gaile, eds. 1998. *The Work of Cities*. Minneapolis: University of Minnesota Press.

Desfor, Gene, Jennefer Laidley, Quentin Stevens, and Dirk Schubert, eds. 2011. *Transforming Urban Waterfronts: Fixity and Flow*. New York: Routledge.

Deutsche Bahn AG. 1995. “Das Synergiekonzept Stuttgart 21: Die Ergebnisse des Vorprojekts.” Accessed May 04, 2014. http://www.rosenstein-stuttgart.de/fileadmin/downloads/1995_Synergiekonzept_Vorprojekt_Brosch_DB/Synergiekonzept_Vorprojekt_Brosch_1995.pdf.

Dietz, Kristina, and Markus Wissen. 2009. “Kapitalismus und ‘natürliche Grenzen’: Eine kritische Diskussion ökomarxistischer Zugänge zur ökologischen Krise.” *Prokla* 39 (3): 351–69.

Directorate-General for Mobility and Transport. 2010. *High-Speed Europe: A Sustainable Link Between Citizens*. Luxembourg: Publications Office of the European Union.

European Commission. 2005. *Trans-European Transport Network: TEN-T Priority Axes and Projects 2005*. Luxembourg: Office for Official Publications of the European Communities.

Farmer, Stephanie. 2011. “Uneven Public Transportation Development in Neoliberalizing Chicago, USA.” *Environment and Planning A* 43 (5): 1154–72.

Flyvbjerg, Bent, Nils Bruzelius, and Werner Rothengatter. 2003. *Megaprojects and Risk: An Anatomy of Ambition*. Cambridge: Cambridge University Press.

Freudenreich, Josef-Otto. 2010. “‘Stuttgart 21-Räumung’: Bürgerkrieg im Schlossgarten.” *Spiegel Online*, September 30. Accessed May 13, 2014. <http://www.spiegel.de/politik/deutschland/stuttgart-21-raeumung-buergerkrieg-im-schlossgarten-a-720581.html>.

Graham, Stephen. 2001. “Flow City: Networked Mobilities and the Contemporary Metropolis.” *disP - The Planning Review* 1 (144): 4–11.

———. 2010. *Disrupted Cities: When Infrastructure Fails*. New York: Routledge.

Graham, Stephen, and Simon Marvin. 2001. *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London, New York: Routledge.

Hackworth, Jason R. 2007. *The Neoliberal City: Governance, Ideology, and Development in American Urbanism*. Ithaca, NY: Cornell University Press.

Hall, Peter, and David Banister, eds. 1993. “The Age of the Train.” Special issue, *Built Environment* 19, no. 3/4.

———, eds. 2013. “High-Speed Rail: Shrinking Spaces, Shaping Places.” Special issue, *Built Environment* 39, no. 3.

Hall, Tim, and Phil Hubbard, eds. 1998. *The Entrepreneurial City: Geographies of Politics, Regime, and Representation*. Chichester, New York: Wiley.

Harvey, David. 1989. "From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism." *Geografiska Annaler. Series B, Human Geography* 71 (1): 3–17.

———. 2001. "Globalization and the 'Spatial Fix.'" *Geographische Revue* 2: 23–30.

———. 2006. *Spaces of Global Capitalism: Towards a Theory of Uneven Geographical Development*. London, New York: Verso.

Hein, Carola, ed. 2011. *Port Cities: Dynamic Landscapes and Global Networks*. New York: Routledge.

Keil, Roger, and Douglas Young. 2008. "Transportation: The Bottleneck of Regional Competitiveness in Toronto." *Environment and Planning C: Government and Policy* 26 (4): 728–51.

Kopfbahnhof 21. 2011. "K 21 - die Alternative zu 'Stuttgart 21.'" Accessed May 03, 2014. http://www.kopfbahnhof-21.de/fileadmin/downloads/Broschueren/K21-broschuere_auflage5.pdf.

———. 2013a. "S21 - ein Bahnprojekt?" Accessed March 17, 2013. <http://www.kopfbahnhof-21.de/index.php?id=313>.

———. 2013b. "S21 und der Nahverkehr." Accessed March 17, 2013. <http://www.kopfbahnhof-21.de/index.php?id=387>.

Lefebvre, Henri. (1974) 1991. *The Production of Space*. London: Blackwell.

Lipietz, Alain, and Jane Jenson. 1987. "Rebel Sons: The Regulation School." Interview conducted by Jane Jenson. *French Politics and Society* 5 (4).

Lösch, Volker, Gangolf Stocker, Sabine Leidig, Winfried Wolf, and Hermann G. Abmayr, eds. 2011. *Stuttgart 21 oder: Wem gehört die Stadt?* Köln: PapyRossa-Verl.

Loukaitou-Sideris, Anastasia, Dana Cuff, Timothy Higgins, and Orly Linovski. 2012. "Impact of High Speed Rail Stations on Local Development: A Delphi Survey." *Built Environment* 38 (1): 51–70.

McFarlane, Colin, and Jonathan Rutherford. 2008. "Political Infrastructures: Governing and Experiencing the Fabric of the City." *International Journal of Urban and Regional Research* 32 (2): 363–74.

Novy, Johannes, and Deike Peters. 2012. "Railway Station Mega-Projects as Public Controversies: The Case of Stuttgart 21." *Built Environment* 38 (1): 128–45.

Palmer, Boris. 2010. "Stuttgart 21: Ausbau oder Rückbau der Schiene?" *Sachschlichtung [arbitration] Stuttgart 21*. Stuttgart, October 29. Accessed May 03, 2014. http://www.schlichtung-s21.de/fileadmin/schlichtungs21/Redaktion/pdf/101029/2010-10-29_Palmer_Leistungsfaehigkeit%20S21.pdf.

Peck, Jamie. 2010. *Constructions of Neoliberal Reason*. New York, London: Oxford University Press.

Peck, Jamie, and Adam Tickell. 2002. "Neoliberalizing Space." *Antipode* 34 (3): 380–404.

Peters, Deike. 2009. "The Renaissance of Inner-City Rail Station Areas: A Key Element in Contemporary Urban Restructuring Dynamics." *Critical Planning* 16: 163–85.

Peters, Deike, and Johannes Novy. 2012a. "Rail Station Mega-Projects: Overlooked Centrepieces in the Complex Puzzle of Urban Restructuring in Europe." *Built Environment* 38 (1): 5–11.

———, eds. 2012b. "Railway Station Mega-Projects and the Re-Making of Inner Cities in Europe." Special issue, *Built Environment* 38, no. 1.

———. 2012c. “Train Station Area Development Mega-Projects in Europe: Towards a Typology.” *Built Environment* 38 (1): 12–30.

Reuter, Wolf. 2001. “Öffentlich-privates Partnerschaftsprojekt ‘Stuttgart 21’: Konflikte, Krisen, Machtkalküle.” *disP - The Planning Review* 37 (145): 29–40.

Short, John R., and Yeong-Hyun Kim. 1999. *Globalization and the City*. Harlow, Essex, New York: Longman.

Smith, Neil. 2002. “New Globalism, New Urbanism: Gentrification as Global Urban Strategy.” *Antipode* 34 (3): 427–50.

Spiegel Online. 2010. “Stuttgart 21: Neue Massendemo gegen Bahnprojekkt.” Accessed February 10, 2014. <http://www.spiegel.de/politik/deutschland/stuttgart-21-neue-massendemo-gegen-bahnprojekkt-a-722269.html>.

Summaries of EU Legislation. 2013. “Intermodality and Trans-European Networks.” Accessed February 08, 2014. http://europa.eu/legislation_summaries/transport/intermodality_transeuropean_networks/index_en.htm.

Swyngedouw, Erik, Frank Moulaert, and Arantxa Rodriguez. 2002. “Neoliberal Urbanization in Europe: Large-Scale Urban Development Projects and the New Urban Policy.” *Antipode* 34 (3): 542–77.

Vormann, Boris. Forthcoming. *Global Port Cities in North America: Urbanization and Global Production Networks*. New York, London: Routledge.

———. 2014. “Infrastrukturen der globalen Stadt: Widersprüche des urbanen Nachhaltigkeitsdiskurses am Beispiel Vancouvers.” *Zeitschrift für Kanada-Studien* 34: 64–86

Vormann, Boris, and Sonja Schillings. 2013. “The Vanishing Poor: Frontier Narratives in U.S. Gentrification and Security Debates.” *Critical Planning* 20: 145–65.

Wolfram, Marc. 2003. “Planning the Integration of the High Speed Train: A Discourse Analytical Study in Four European Regions.” Dissertation, Universität Stuttgart.