

BEYOND GLOBAL GAINS AND LOCAL PAINS - SPATIAL INEQUALITY OF HINTERLAND LOGISTICS

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Introduction to the gains and pains of logistics

Trade infrastructure and logistical activities have long been a source of prosperity as well as nuisance. The gains and pains of logistics, however, are not distributed equally across regions and cities. Important trade hubs such as Rotterdam or Chicago have built strong trade institutions and accumulated urban wealth, hereby making a successful trade-off between the global gains of trade and the local pains of congestion and pollution (Cronon, 1991; Kuipers et al., 2018). Since the rise of global supply chains, such hubs have grown beyond their city boundaries and formed logistical hinterlands. These extensive areas appear to represent a less favourable trade-off between gains and pains, judging by the increasing criticism against distribution centre developments, regarding landscape degradation, congestion (CRa et al., 2019) and precarious jobs (Bergeijk, 2019). In the hinterland of Rotterdam, the building footprint of logistics has increased fourfold since 1980 (Nefs, 2022), while congestion and labour shortages have also increased steeply and the planning system has been decentralized, giving more responsibility to local governments (Nefs et al., 2022). This paper discusses whether hinterland logistics can be regarded as a spatial justice issue, and how this may be reflected in the local spatial planning discourse.

The concept of spatial justice emerged in the early 1970s, when Harvey and other geographers applied Rawls' (1971) theory on fair distribution of gains and pains to planning, which has gained traction in recent years (Rocco and Newton, 2020; Soja, 2010). This not only relates to infrastructures and spaces, but also the distribution of "*financial, environmental and social benefits and burdens issued from urban development.*" (spatialjustice.blog) Since public goods and negative externalities such as noise are not equally distributed geographically, accessibility as well as proximity play an important role in a spatial justice discourse. As Bret (2018) explains, geographical scales used in such discourses should also be seen as social constructs, which may be used to legitimize the outsourcing of pains to other territories and not-in-my-backyard (NIMBY) positions.

The procedural aspects of spatial justice, or how a planning system may enhance the fair distribution of gains and pains, have been explored by Healey (1996) and Ostrom (2015). Moroni (2020) reminds us that distributive justice cannot cover the full range of social justice issues, since not all goods are scarce, divisible and transferable. This also applies to aspects discussed in this paper, such as e-commerce and nitrogen emissions. The Dutch planning system, rooted in democratic water and land management, often faces land scarcity in light of economic and ecological ambitions. It is therefore understood to have the necessary institutions and motivation to enhance spatial justice (Michels, 2006; Salet, 2018).

Although not always framed as spatial justice, the logistics planning literature frequently addresses distributive problems. For example, the Los Angeles region has seen a conflict between regional gains of logistics developments and their local pains in hinterland areas with vulnerable communities (De Lara in Hall and Hesse, 2012; Yuan, 2019). While the regionalization of distribution centres along the Alameda Corridor has improved the air quality and congestion in downtown LA and in general terms in the whole region, it has significantly worsened living and working conditions in the

Inland Empire region, east from LA. Another recent case of spatial inequality around trade infrastructure is the Belt and Road Initiative (Teo et al., 2019).

Spatial inequality of logistics is at least partly rooted in the inherently unstable and heterogeneous territorial manifestations of logistics networks. As Santos (2006: 163, 176–185) explains, building on the work of Castells and other geographers, such networks constitute a national space at the service of the international economy, creating various territorial dialectics and instabilities: local vs global, slow vs fast, competitive vs lagging, and varying levels of fluidity (adherence to international corporate standards).

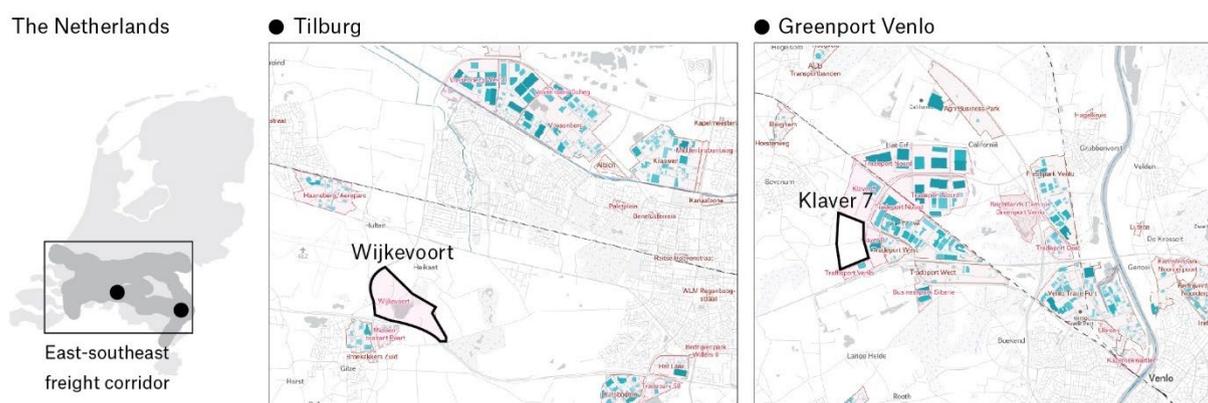
Since the gains and pains of logistics developments are felt on such different scales and among so many different actors, making a good trade-off is extremely difficult. While a company can seek an optimum of costs pertaining to e.g. the service level and location of a distribution centre (Onstein et al., 2019), the societal trade-off is much more complex – involving changing political positions regarding a multitude of gains and pains. Neither societal cost-benefit analyses can fix this – since these still need interpretation and fail to factor in aspects like biodiversity or landscape quality, which are hard to measure (Hickman and Dean, 2018). Nor are spatial-economic models equipped to combine and evaluate this variety of positive and negative externalities (Verhoef and Nijkamp, 2005). As a result, persuasive, coordinative and justificatory discourses remain key elements in deciding on large economic developments with environmental impacts (Healey, 1999), such as logistics.

The literature on spatial justice vis-à-vis logistics and local governance therefore suggests that the trade-off between logistics gains and pains highly depends on discourses, on which Dutch hinterland communities could have a meaningful influence. In the next section, two hinterland cases in the Netherlands shed light on the public discourse on the gains and pains of logistics developments. The purpose of the case study is not to evaluate the trade-offs, but rather to identify spatial justice arguments (gains and pains) in the planning discourse, and analyse these with regard to the local decision-making process.

Two Dutch cases of polemic logistics developments

To identify the discursive arguments of logistics developments in hinterland areas, the paper analyses regional newspaper articles as well as municipal council decisions in two cases (Figure 1), both part of the busy East-Southeast freight corridor and reaching a climax in the public approval process in 2021.

Figure 1: The cases in the logistical hinterland of the Netherlands



Logistics development Klaver 7 (Horst aan de Maas municipality) is the most recent phase of the ongoing Greenport Venlo development, following the 2009 masterplan including simultaneous realization of ecological and recreational zones in the area (Nefs and Daamen, 2022). The expansion of ca. 60 hectares should attract logistics and local small-medium

enterprises. Housing of migrant workers, linked to the distribution centres, has been a hot item in the debate, which radicalized in Facebook groups ('Arbeidsmigranten Horst aan de Maas' and 'Horst Online'). For this case, the 28 most recent articles in De Limburger are analysed, discussing the pains and gains of the Greenport development. *"Thousands of square meters have become prey to the cathedrals of 24-hour consumerism."* (De Limburger, 16-04-2019) For an insider view on the process, an interview was held with commercial director Heerings of the Greenport Venlo Development Company, of which Horst aan de Maas is a shareholder. Heerings: *"If Horst cancels the plan, it will also lose the profits and other benefits, such as space for local scale-up companies."*

Wijkevoort (Tilburg) is an 80ha development of logistics and industry near a motorway junction in an agricultural landscape. More than 500 protest letters were handed in during the approval process and for a year protesters waved banners in front of the city hall every day. Meanwhile, the municipality worries about the high demand for industrial sites and the construction of 25 thousand housing units, whose inhabitants need jobs. For this case, 28 articles from Brabants Dagblad are analysed, mentioning gains and pains of Wijkevoort. Alderwoman Lahlah in Brabants Dagblad (11-03-2022): *"Wijkevoort [...] is really, really, the last piece of rural land being transformed to an industrial estate. It was difficult, not for nothing the debate took 20 years. But you have to decide, the city also wants to grow."* For the paper, an interview was held with alderman Van der Pol, responsible for the adaptation and approval of the plan.

The persuasive arguments used in the media are organized in Table 1. Some of the articles present only gain or pain arguments, the latter usually from the side of citizens: *"Neighbouring inhabitants are not impressed. They feel like victims of the economy."* (De Limburger, 10-03-2020) *"Soon I'll be looking at incredibly high walls. The sheer scale annoys me. And for whom is all this logistics? The benefits are certainly not for the people living in this region."* (Brabants Dagblad, 2020-12-12) Many articles, however, (attempt to) reflect the trade-off that politicians need to make: *"I can't deny that Wijkevoort has opened up several lines of conflict. [...] What's more important is that the development of Wijkevoort makes the conservation of [the other proposed site] Zwaluwenbunders possible, as a green buffer [...]. That is a package deal."* (Alderwoman Lahlah in Brabants Dagblad 11-03-2022) Most gain arguments mention generation of employment and creation of space for either sustainable energy production or local scale-up companies. Most pain arguments emphasize loss of agricultural land and landscape quality, as well as nuisance in the form of pollution and congestion. In Brabants Dagblad, the frequency of gain and pain arguments is slightly more balanced than in De Limburger.

The city council reports containing municipal decisions and coordinative/justificatory statements regarding both developments are gathered in Table 2. These go back a few years until reaching a clear picture of the approval process in 2021. Expert reports play a role in the decision process, most importantly regarding the employment and environmental effects of the development. The decisions regarding Klaver 7 and Wijkevoort follow a similar overall path, leading from the approval of a preliminary masterplan or vision for the area, after which discussion arises and in 2021 a decision is made: Klaver 7 is postponed until the end of 2024 when higher standards can be met, while Wijkevoort is approved – also with increased standards. These elevated standards (higher spatial quality and local added value) are explicitly part of the political negotiations in the council meetings, influenced by the media debate. With regard to Wijkevoort, a remarkable decision was to not organize a solicited referendum, on procedural grounds, a decision that probably saved the coalition but increased the protests. Shortly before the decisive council meeting in November 2021, a talk show was planned with experts including the author of this paper. It was cancelled after complaints in Brabants Dagblad (2021-10-06) that key protest groups had not been personally invited. Alderman Van der Pol: *"The very people demanding openness of affairs around Wijkevoort ended up shutting down the debate."*

Table 1. Frequency of arguments used in regional media articles (n=56)

gains	Brabants Dagblad	De Limburger	total freq.
employment growth	7	7	14
space for sustainable solar and wind energy / energy hub / circular production	3	5	8
creating space for local scale-up companies or residential developments	6	1	7
economic development	5	1	6
enabling e-commerce	1	5	6
compensatory development of ecological corridors and recreational green structures	4	1	5
innovation, value-added logistics activities	3	2	5
municipal land sale profits	2	1	3
TOTAL arguments	31	23	54

pains	Brabants Dagblad	De Limburger	total freq.
transformation, disappearance and deterioration of agricultural landscape and biodiversity	17	16	33
noise and air pollution	5	3	8
lack of space for local small-medium enterprises	3	5	8
road congestion	1	6	7
competition over scarce personnel	1	5	6
jobs not suited for local employees, but rather attracting more migrant workers	1	5	6
heat stress	5	0	5
nitrogen emissions, damaging nearby nature areas	4	1	5
risk of economic monoculture of logistics / lack of economic diversity / low added value	4	1	5
blocking of view	2	3	5
housing issues regarding migrant workers	2	2	4
possible future vacancy of warehouses	2	1	3
loss of recreational area for nearby inhabitants	2	0	2
precedent for further developments	1	0	1
TOTAL arguments	50	48	98

Figure 2. Cartoon by Berend Vonk in De Limburger (2019-03-14). In regional dialect: "Nobody understands how beautiful our Limburg is."



Table 2. Municipal council decisions and statements

date	decision Horst aan de Maas
2019-07-03	Establish municipal right to purchase Klaver 7 land
2020-01-01	Consider put Klaver 7 on hold
2020-11-10	Take into account citizen view on Klaver 7 development, safeguarding aspects of traffic, nature compensation and accessibility; approve updated structuurvisie
2021-01-01	Agrofood and manufacturing aim for Klaver 7, instead of logistics services
2021-06-24	Make land use plan and impact study for Klaver 7
2021-08-09	Permit given for housing migrant workers
2021-11-23	Freeze logistics developments, not approving new sites including Klaver 7 for time being
2021-11-23	Municipality to keep strictly to discussed standards concerning spatial quality instead of quantity of land development, including nature and landscape development, measures to ensure livability of inhabitants. Synchronize policy with status of development, only then can development continue.
2022-01-02	No new permits given for housing of migrant workers, verification of quality of existing housing sites, freeze klaver 7 development until the various involved municipalities take responsibility in housing of migrant workers, landscape and traffic issues are solved, and accepted motions are executed
2022-03-25	Reassess land use plan for Klaver 7, to accommodate less XXL logistics and more space for local small-medium enterprises
2022-05-10	Freeze large logistics developments klaver 7, only approving a landuse plan for Klaver 7 focusing on innovative (high)tech firms, with maximum plot size of 3ha, with citizen participation in landscape integration plan
date	decision Tilburg
2018-02-05	Adopt the masterplan for development process of Wijkevoort
2021-01-01	Frame Wijkevoort development in context of knowledge intensive industry stimulation in Tilburg
2021-02-01	Allow smaller companies that do not meet the minimum space requirements of Wijkevoort, to pool together in the development
2021-05-01	Frame Wijkevoort development in context of growing freight traffic, industrial site developments, housing of migrant workers and inner city redevelopment.
2021-05-01	Frame Wijkevoort development in context of creating space for large and middle-size companies in Tilburg, in a sustainable setting
2021-06-14	Establish municipal preference to purchase the Wijkevoort land
2021-06-14	Propose land use plan 2020 for Wijkevoort
2021-08-03	Not organize referendum on Wijkevoort development, having evaluated 27 written protests and regarded these invalid
2021-08-03	Change in plan phases, decision to invest 0.5 million in green structure up front
2021-09-01	Budget decision to realize landscape park Pauwels, Stadsbos 013 and work landscape Wijkevoort, according to economic and landscape ambitions of Tilburg
2021-09-07	Participation in pilot Circulair Wijkevoort
2021-11-09	Establish development guidelines and evaluation process to guarantee the quality of the Wijkevoort development, in social economic, landscape and ecological terms.
2021-11-15	Change sustainable design standards (Breeam) to highest (outstanding), and if not possible the minimum is excellent; higher standards in several spatial quality aspects; minimum of 50% external experts in Quality Team
2021-11-15	Adopt the land use plan of Wijkevoort; declaring not valid the ca. 500 written protests
2021-11-15	Adopt: amendment to improve landscape integration and façade design standards of Wijkevoort; amendment to add health expertise to Quality Team; amendment to act on light pollution; motions to empower the council with procedures to control the developments when they start; motions to dedicate more parcels to local small-medium companies and allow pooling of small companies

Two factors may help explain the postponing of Klaver 7 vs the approval of Wijkevoort: skin in the game and path dependence. First, as Klaver 7 is part of the much greater development of Greenport Venlo, Horst aan de Maas owns merely 8.3% of the shares in the development company, which gives the council the opportunity to view the negative aspects of for instance the XXL warehouses and related migrant workers - as an outside threat. Tilburg on the other hand, has full skin in the game regarding Wijkevoort, with no one else to blame. The municipality had the difficult task to approve either this development or another one located in a delicate cultural landscape area, Park Pauwels.

Secondly, as often happens (Hein and Schubert, 2021) path dependence in both municipalities influenced the political discourse. Horst aan de Maas had entered the Greenport project with the aim of strengthening its local agri-food sector, while realizing nature areas at the same time (Nefs and Daamen, 2022). As it became clear that the Greenport did not attract the desired companies, but rather XXL distribution centres, the municipality became more critical when the development approached its territory. Tilburg feels the pressure of maintaining a logistics hotspot, from its former policies since 2000, employing many of its inhabitants. Another long-term policy choice, to realize Park Pauwels, conflicted with the development of the Zwaluwenbunders logistics site, making Wijkevoort the only available option left.

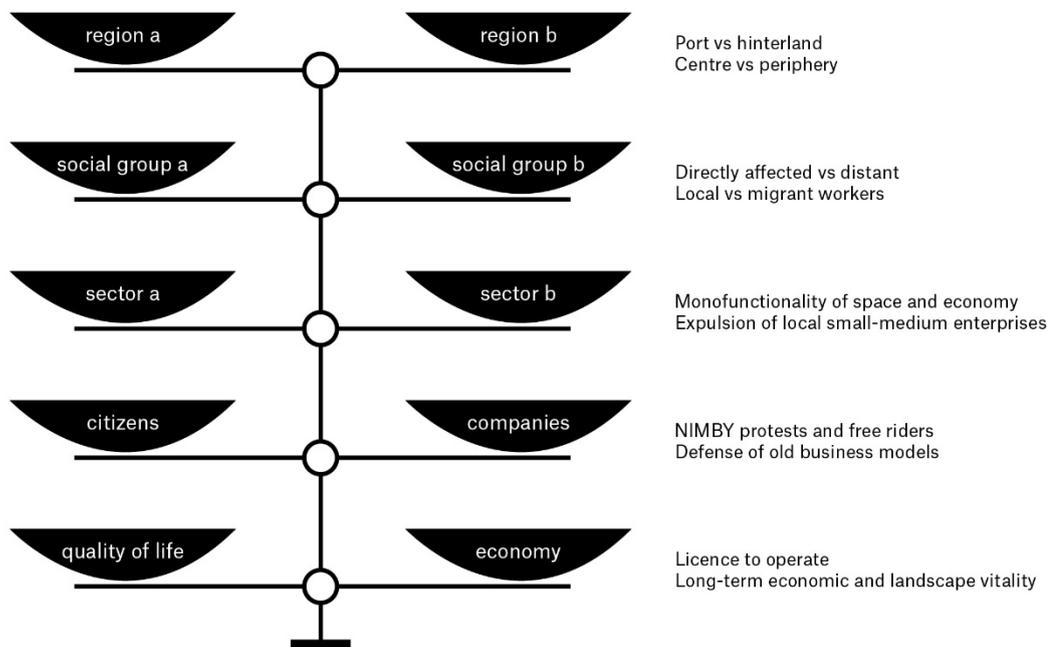
Conclusions on spatial justice in logistics planning

The two cases analysed above illustrate clearly that hinterland logistics in the Netherlands is an issue of distributive spatial justice. The media debate and the local decision-making process show the conflicts of interests between stakeholders as well as the constant trade-offs between gains and pains regarding varying areas and stakeholders, on various spatial scales. There is no evidence, however, of deliberate outsourcing of nuisance to vulnerable social groups in the hinterland, as is described in the case of Los Angeles (De Lara in Hall and Hesse, 2012; Yuan, 2019). Tilburg and Horst aan de Maas should by no means be seen as the periphery of the Port of Rotterdam, and rather as logistics growth poles with strategies and trade-offs of their own. Nevertheless, the debate shows the difficult trade-off between regional – or (inter)national - gains vs local pains. Nimbyism can easily be identified, for example inhabitants trying to avoid the blocking of their view or the arrival of a migrant worker facility near their house. Neither in the media reports nor in the decision making, however, nimbyism seems to dominate.

The argumentation found in the cases allows a more detailed understanding of spatial justice trade-offs in hinterland logistics development, containing at least five distinct layers (Figure 3). The distribution of gains and pains among regions and social groups in a just equilibrium or problematic disbalance are part of the traditional spatial justice discourse. Even when there is no centre-periphery issue like in Los Angeles, the logistical hinterland regions do perform tasks (enabling e-commerce for example) for metropolitan centres and other regions. The question is whether hinterland regions can sufficiently capture the economic development and investments, in green areas and sustainable energy, in return.

The distribution of logistics gains and pains across social groups poses another challenge: a number of low-skilled workers in the area depends on logistics companies for their livelihood. The contracting of migrant workers from Eastern Europe, however, has diffculted the working conditions and unions in the sector as a whole (Bergeijk, 2019). E-commerce seems to be a non-transferable good from which everyone benefits (Moroni, 2020), yet groups with a high consumption pattern benefit more, while the environmental impacts (air pollution, noise, congestion) of distribution centres are felt more strongly by communities nearby. The discourse in both cases addresses the increasing dependence on a single sector (logistics) in the regional economy, demanding more personnel than the region can supply; as well as multinationals acquiring land for large distribution centres, while local small-medium enterprises struggle to find space to scale up their business. Especially this last aspect is taken very seriously by the media and politicians in both areas.

Figure 3. Concept of (distributive) spatial justice trade-offs applied to hinterland logistics



Beyond the interregional, groups and sectors trade-offs, there are also spatial justice trade-offs at play between citizens and companies. This is by far the most entrenched and at times even cynical part of the discussion, characterized by nimby protests - against developing companies or, more often, local governments allowing the development; by free riders - opponents of local logistics developments who eagerly use delivery services anyway; and by companies refusing to give up old business models or to reduce their impact significantly. A great annoyance for citizens and civil servants, mentioned in several of the analysed media and council reports as well as the interviews, are the backroom deals between local politicians and large corporations.

A broader and more productive discourse, sometimes enhanced by experts, concerns the trade-off between quality of life and economic development of a region. While these aspects do not necessarily contradict, there often exists a political tension and spatial conflict between them. It is in this realm that compromises can be found, for example companies increasing their 'license to operate' by realizing part of the ecological and recreational infrastructures in and around the developments. Or government strategies that attempt to strike a balance between the long-term economic development of the region and ecological/landscape vitality.

The analysis identified gain and pain arguments used in persuasive, coordinative and justificatory discourses (Healey, 1999) in the media and council reports of the cases. Even though decision-making has taken into account quantitative and qualitative research e.g. regarding employment and environmental effects, the final trade-off between all gains and pains was not directly supported by research and is rather the result of a media-influenced political debate, built on the five levels of trade-offs described above. Some trade-offs, however, can hardly be made on the local level alone, such as the gain of enabling e-commerce for a large region vs the local noise and air pollution. This paper's advice to planners dealing with hinterland logistics issues is therefore to address trade-offs in all relevant layers of spatial justice mentioned above, by creating a policy context of transparency (especially around lobby by local and foreign companies), deradicalizing nimby agents and stimulating an open critical debate supported by facts and expert opinions.

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References

- Bergeijk J van (2019) *Binnen Bij Bol.Com*. Amsterdam, Antwerpen: Querido Fosfor.
- Bret B (2018) Spatial Justice and Geographic Scales [La justice spatiale à l'épreuve des échelles géographiques, translation: Laurent Chauvet]. *Justice Spatiale / Spatial Justice* (12): 1–14. Available at: <http://www.jssj.org>.
- CRa, Rademacher & De Vries and Stec Groep (2019) *(X)XL-Verdozing [(X)XL Boxification]* (Board of government advisors). The Hague: CRa.
- Cronon W (1991) *Nature's Metropolis: Chicago and the Great West*. Chicago: WW Norton & Co.
- Hall P V. and Hesse M (eds) (2012) *Cities Regions and Flows*. Vancouver and Luxembourg: Routledge. DOI: 10.4324/9780203106143.
- Healey P (1996) The Communicative Turn in Planning Theory and its Implications for Spatial Strategy Formation. *Environment and Planning B: Planning and Design* 23(2). SAGE Publications Ltd STM: 217–234. DOI: 10.1068/b230217.
- Healey P (1999) Sites, jobs and portfolios: Economic development discourses in the planning system. *Urban Studies* 36(1): 27–42. DOI: 10.1080/0042098993718.
- Hein C and Schubert D (2021) Resilience and Path Dependence: A Comparative Study of the Port Cities of London, Hamburg, and Philadelphia. *Journal of Urban History* 47(2): 389–419. DOI: 10.1177/0096144220925098.
- Hickman R and Dean M (2018) Incomplete cost – incomplete benefit analysis in transport appraisal. *Transport Reviews* 38(6). Routledge: 689–709. DOI: 10.1080/01441647.2017.1407377.
- Kuipers B, Van der Lugt L, Jacobs W, et al. (2018) *Het Rotterdam Effect—De Impact van Mainport Rotterdam Op de Nederlandse Economie [The Impact of Mainport Rotterdam on the Dutch Economy]*. Rotterdam: Erasmus Centre for Urban, Port and Transport Economics.
- Michels AMB (2006) Citizen participation and democracy in the Netherlands. *Democratization* 13(2): 323–339. DOI: 10.1080/13510340500524067.
- Moroni S (2020) The just city. Three background issues: Institutional justice and spatial justice, social justice and distributive justice, concept of justice and conceptions of justice. *Planning Theory* 19(3): 251–267. DOI: 10.1177/1473095219877670.
- Nefs M (2022) Dutch Distribution Centres 2021 Geodata. Rotterdam: 4TU.ResearchData. DOI: 10.4121/19361018.v1.
- Nefs M and Daamen T (2022) Behind the big box: understanding the planning-development dialectic of large distribution centres in Europe. *European Planning Studies* (March): 1–22. DOI: 10.1080/09654313.2022.2057792.
- Nefs M, Zonneveld W and Gerretsen P (2022) The Dutch 'Gateway to Europe' Spatial Policy Narrative, 1980-2020: A Systematic Review. *Planning Perspectives* (March): 20. DOI: DOI:10.1080/02665433.2022.2053879.
- Onstein A (2021) Factors Influencing Physical Distribution Structure Design.
- Onstein ATC, Tavasszy LA and Van Damme DA (2019) Factors Determining Distribution Structure Decisions in Logistics: A Literature Review and Research Agenda. *Transport Reviews* 39(2). Taylor & Francis: 243–260. DOI: 10.1080/01441647.2018.1459929.
- Ostrom E (2015) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press. DOI: DOI: 10.1017/CBO9781316423936.
- Rawls J (1971) *A Theory of Justice*. Cambridge MA: Harvard University Press.

- Rocco R and Newton C (eds) (2020) *Cities for All - Manifesto for the Just City*. Delft: TU Delft Open.
- Salet W (ed.) (2018) *The Routledge Handbook of Institutions and Planning in Action*. Amsterdam: Routledge. DOI: 10.1192/bjp.111.479.1009-a.
- Santos M (2006) *A Natureza Do Espaço. Técnica e Tempo, Razão e Emoção*. São Paulo: edusp. DOI: 10.22409/geographia1999.v1i1.a13370.
- Soja E (2010) *Seeking Spatial Justice*. NV-1 onl. Globalization and community series. Minneapolis: University of Minnesota Press.
- Teo HC, Lechner AM, Walton GW, et al. (2019) Environmental impacts of infrastructure development under the belt and road initiative. *Environments - MDPI* 6(6). DOI: 10.3390/environments6060072.
- Verhoef ET and Nijkamp P (2005) Externalities in the Urban Economy. *SSRN Electronic Journal*. DOI: 10.2139/ssrn.457580.
- Yuan Q (2019) Planning Matters: Institutional Perspectives on Warehousing Development and Mitigating Its Negative Impacts. *Journal of the American Planning Association* 85(4). Routledge: 525–543. DOI: 10.1080/01944363.2019.1645614.

Websites

- <https://spatialjustice.blog/distributive-spatial-justice/>
- <https://mertennefs.eu/landscapes-of-trade/>
- <https://www.limburger.nl/>
- <https://www.bd.nl/>
- <https://www.greenportvenlo.nl/>
- <https://www.tilburg.nl/actueel/gebiedsontwikkeling/wijkevoort/>
- <https://horstaandemaas.raadsinformatie.nl>
- <https://tilburg.raadsinformatie.nl>