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Dutch Road Infrastructure Planning and Justice – A Critical Perspective on Area-Based Approaches

The conflicting political philosophy within road infrastructure planning

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Preface

Jus-tice (jus'tis) /' dʒʌs.tɪs / *n.*: just behaviour, or treatment; the quality of being fair and reaonsable.

Jus-ti-fied (juhs-t*uh*-fahy) /' ˈdʒʌstɪfʌɪd / *adj.*: Having, done for, or marked by a good or legitimate reason.

Whereas the Research Master Spatial Sciences is all about how *justified* all sorts of choices in spatial sciences are, rarely are issues of *justice* involved: a problem statement has to be justified, but does the problem consist an injustice? A research question has to be justified, i.e. linked to the problem statement; but does the research question attempt to alleviate injustices? The selection of theory, empirical studies, results, and conclusion drawn, all have to be justified; but do these elements at all consider what is just or fair?

Throughout the course of the master programme, I have focussed increasingly on matters of spatial planning, especially transport planning. Building on the bachelor programme, the scope shifted from issues of physical spatial planning or *ruimtelijke ordening* towards institutional planning or *ruimtelijke planning*. Moreover, the Research Master adds another fundamental dynamic to this shift, which analogically arguably comprises the deep, global ocean conveyer belt of the reflection on the symbiosis of *ruimtelijke ordening* and *ruimtelijke planning*, i.e. *planologie*. Possibly, this layer is not a transport paradigm such as 'predict and provide', 'predict and prevent', nor is it a planning paradigm such as a 'technical rational' or a 'communicative rational'. Rather, it may be a deeper, philosophical layer, where powerful theories such as structural functionalism, symbolic interactionism, and critical realism cause a constant motion throughout our field of study. Whereas I felt that this field of study is especially well equipped to understand when various philosophical concepts are justified in *planologie*, i.e. when we legitimately categorise and differentiate, rarely have I felt that the actual *justice* of *planologie* is assessed in my personal interest; transport planning. Arguably, this line of reasoning has *justified justice* not only as research topic, but as an important point of departure for any type of reasoning.

The different meaning that the Oxford Dictionary has attributed to these two words is not one that was very apparent in planning practice, nor in is it homogeneously and uniformly apparent in all fields of life what 'just treatment' or 'the quality of being fair' means. Here, it as at least justified to express a few words of gratitude to those without whom I could not have completed this thesis. First, I would like to thank my thesis supervisor Jos Arts, who patiently discussed the many and most notably long earlier versions of this thesis. Without Jos I would probably still be exploring literature, the thesis would have been ten times as long, and the empirical and methodological work would maybe never be finished. Also, I would like to thank the interviewees for their time, insights, and openness, through which they helped to translate theory to practice. Next, my appreciation goes out to Jasper Homrighausen, who always manages to save some time to critically discuss any planning related topic while also enjoying time together as good friends. Moreover, Jorn van der Scheer and Esther Kok their contribution proved to be invaluable as the time constraint for the thesis kept on increasing. My final word of gratitude goes out to my family, who always encourage me to pursue my aspirations and dreams, regardless of how crazy and time consuming it may be.

0 Summary

Whereas the integration of road infrastructure planning with land-use has been extensively studied, research on the integration of transport planning with justice and related equity and ethics dimensions is gaining prominence more recently. Contemporary research on area-based approaches have shown that road infrastructure planning can add spatial quality by becoming further integrated with its environment rather than upholding a mere sectorally-oriented functional, spatial and institutional-organisational scope. However, it is unclear if transport justice issues such as transport-related social exclusion, transport deprivation, equalizanda and distributional principles are included in contemporary transport planning. Consequently, road infrastructure planners are left without significant procedural measures to address the rising concern on the unfair state-of-affairs of modern transport systems. In this thesis, I explore what the implications of the justice concept are for area-based approaches and how these notions of justice can be taken into account in Dutch transport planning practice. An extended case study method is employed to explore how notions of justice, area-based integration scopes and transport goals are mutually related in the development of the A2 Maastricht in the Netherlands. The results indicate that the inclusion of procedural transport justice with distributional transport justice generally requires a shift in road infrastructure planning's efficiency, environmental and equity goals from stressing especially efficiency towards a higher emphasis on equity has to occur. Alternatively, notions of transport justice can be build upon in area-based approaches to come to a more balanced infrastructure development of its efficiency, environment and equity dimensions. In both situations, the functional and spatial scope has to increase to incorporate notions of 1) the capability approach and its external environment and travel-related impairment characteristics, 2) sufficientarianism and its sufficiency threshold and voluntary exclusion concern, and 3) prioritarianism and its focus on 'the worst-off'. Finally, transport justice arguably does not require the organizational integration to further increase when concerns of transport justice are triggered as a consequence of the area-based approach rather than as a characteristic of the area-based approach.

Keywords: Transport Planning, Road Infrastructure Planning, Area-Based Approaches, Justice, Land-Use Transport Interactions, Equity, Transport-Related Social Exclusion

1 Introduction

1.1 Problem statement, societal and theoretical relevance: Tracking integration through area-based approaches and justice

1.1.1 Integration in road infrastructure planning

Debates on various types of integration in transport and infrastructure planning have flourished over the past two decades (Banister, 2008; Geerlings and Stead, 2003; Hull, 2008). Whereas the integration of (road) infrastructure planning with land-use has been extensively studied (Arts et al., 2016; Heeres et al., 2012a, 2012b, 2016; Lenferink et al., 2014; Struiksma et al., 2008; Te Brömmelstroet and Bertolini, 2010), research on the integration of transport planning with justice and related equity and ethics dimensions is only gaining prominence more recently (Beyazit, 2011; Ernste et al., 2012; Lucas et al., 2016; Martens, 2017a; Martens and Golub, 2012; Pereira et al., 2017; Thomopoulos et al., 2009; Wee and Geurs, 2011). The question rises whether (or how) the *Land Use and Transport Integration* (LUTI) concepts on the one hand integrate (or relate) with the transport and justice concepts on the other hand.

1.1.2 Road infrastructure planning, land use, area-based approaches, and global status quo

First, regarding LUTI, the approach builds strongly on the Land-Use Transport Feedback Cycle (Wegener and Fürst, 1999) that stresses the influence and interaction that the transport system has on land-use and vice versa over time. Internationally, LUTI has manifested itself in various ways, each application emphasising a specific LUTI characteristic. For example, on European level the EU's Horizon 2020 Vital Nodes programme stresses the integration of multi-modal transport infrastructure with land use planning thereby especially acknowledging the multi-scalar components (Arts et al., 2016). Moreover, Heeres et al. (2012b) provide LUTI examples from 1) America, 2) Canada, 3) Australia, 4) New Zealand and 5) the UK, emphasising respectively 1) strategic partnerships towards broader sectoral integration, 2) community planning to realise sustainable planning objectives, 3) place-based planning also to emphasise cross-sectoral linkages, 4) financial and cross-sectoral integration to both increase transport efficiencies and quality of life, and 5) development or integrated spatial planning to address vertical and horizontal integration.

However, the most progress on LUTI has arguably been made in The Netherlands, as "due to strong competition for space, interrelatedness of land uses and a fragmented spatial-institutional system, Dutch infrastructure planning policy and practice abounds with examples of planning approaches that integrate road infrastructure and surrounding land uses" (Heeres et al., 2016, p. 423). Therefore, assessing LUTI cases or so-called *area-based approaches* (ABAs) may be especially insightful. Elaborating, these approaches aim to find integrated, innovative combinations between road infrastructure and developments in other spatial policy sectors by combining various types of multi-scalar spatial-functional and institutional-organizational integration (Arts et al., 2016; Heeres et al., 2012b). Thereby ABAs intend to cope with multiple deficiencies of traditional road planning related to contemporary societal, political and financial economic developments, such as (Geerlings and Stead, 2003; Heeres et al., 2012b, 2012a; Hull, 2008):

- Increased environmental awareness since the 1970s (Heeres et al., 2012b);
- A general shift from government to governance, referring to policy development with an increasing and differentiating amount of actors of state, market and society rather than just top-down government steering, a new process of governing, including associated institutions and relationships in that process, and responding to both globalisation and greater centralisation of decision-making on the hand, and fragmentation and decentralisation on the other (Geerlings and Stead, 2003; Jordan et al., 2005; Loorbach, 2010; Rhodes, 1996; Zuidema, 2011);
- The former is reinforced following a neo-liberal turn in western societies as influenced by changing financial-economic arrangements (Busscher et al., 2014; Lucas, 2012);
- Increased European influence on infrastructure planning especially regarding its environmental issues (Heeres et al., 2012b; Struiksma et al., 2008);
- Increased (local) public resistance and more generally changed perceptions, needs and desires for spatial development based on the rise of the network society (Heeres et al., 2012b);
- Increased scarcity of space, demanding innovative spatial-functional combinations to cope with conflicting interests and to safeguard proper spatial quality Heeres et al., 2012b);

A best-practice area-based approach (Heeres et al., 2016) is the development of the Dutch motorway A2 Maastricht (e.g. Verhees 2013 p.160-187; Van Valkenburg et al., 2008; Lenferink 2013 chapters 3-7). The intended local area-based effects are 1) alleviating the barrier effect of the previous highway by making it able for inhabitants of the adjacent neighbourhoods and alleviating rat-run traffic, and 2) increasing safety for children and elderly crossing the highway by bike, and 3) an area-based improvement of local area quality (Ibid.). The project is considerd crucial for the city of Maastricht itself, not just the people travelling from Holland to Belgium and further on (De Graaf, 2016a). Moreover, the designer of the project stated an important part of the tender was the participatory process with inhabitants from the city of Maastricht (Vis, 2016). Furthermore, concerns of these inhabitants comprising air, noise and safety levels are taken into account, such as emphasised by action group Klaor Loch (De Graaf, 2016b). Finally, the project is conceived as successfully combining spatial functions through a process that properly incorporated local and (inter)national needs and desires (De Graaf, 2016a; Vis, 2016)(ANP, 2004; De Graaf, 2016b). As the Maastricht case can thus be considered as a best-practice ABA case, the question rises how it integrated notions of justice with infrastructure planning.

1.1.3 Road infrastructure planning, justice, and global status quo

Secondly, an increasing body of knowledge has emerged to address that the development of transport systems can potentially be considered as unfair (Lucas, 2012; Martens, 2017a; Rietveld, 2003), with fairness comprising "*a <u>just</u> distribution <u>justly</u> arrived at*" (Harvey, 1973). The premise of the justice concept is that systematic normative judgement or an explicit justice framework is required to assess when inequalities do lead to injustices and therefore unacceptable differences in accessibility levels (Martens, 2017a). Indeed, the justice literature has thus far been primarily occupied with determining how to assess what a *just distribution* comprises. Thereby, as is the case

with ABAs, the emergence of transport justice responds to deficiencies of traditional and contemporary road planning to cope with just distributions, such as:

- The existence of substantial disparities in accessibility and the consequences of not being able to accumulate economic and social capital, to participate in society, i.e. to live a life of dignity (Kaufmann et al., 2004; Lucas and Currie, 2012). For instance, affected key life enhancing opportunities are job search activities, job losses, missed health appointments, school truancies, lower post-16 educational participation and increased physical isolation in later life (Lucas, 2012). This *transport-related social exclusion* (TRSE) or transport deprivation emphasises inequalities in accessibility and its negative impacts for specific social groups such as low-income groups, handicapped, inhabitants of rural areas, and persons who lack access to certain traffic modes (Lucas, 2012; Lucas et al., 2016; Lucas and Currie, 2012; Martens, 2017a; Van Wee, 2011). Additionally, these specific groups can structurally deteriorate under transport externalities such as emissions (Hamersma, 2017).
- The way *formal* institutional arrangements assess distributions effects through *Cost-Benefit Analysis* (CBA). The distribution effects are often added as an addendum and are found too difficult to interpret or communicate. Consequently, the actual use of CBA does not contribute to addressing unjust accessibility distributions (Geurs and van Wee, 2004; Martens, 2017a; Van Wee, 2011).
- *Informal* institutions also perpetuate existing unjust distributions[1], since accessibility measures are often based on utilitarian and egalitarian tendencies (Pereira et al., 2017; Thomopoulos et al., 2009) such as infrastructure-based (travel speed), distance (as the crow flies) or utility-based measures (economic indicators)(Lucas et al., 2016; Martens and Golub, 2012; Rietveld et al., 2007; Wee and Geurs, 2011). As utilitarian and egalitarian concepts tend to neglect interpersonal differences regarding distributions (Roemer, 1996; Van Wee, 2011), the informal institution of using these measures contribute to unjust distributions of accessibility (Martens, 2017a).
- Both formal and informal institutions exercabate existing accessibility distributions over time: accessibility is improved in dense networks or areas as opposed to sparse networks or areas, since more demand is executed in these areas. In essence, LUTI effects incrementally disadvantage those affected by TRSE. Consequently, those who are unable to execute demand are excluded from accessibility improvements (Martens, 2017a).

A response to these issues may be expected globally since the political process affecting accessibility distributions is inherent to transport planning (Martens, 2017a). Numerous countries have started to set up policies to address transport justice or TRSE, such as 1) America, 2) Canada, 3) Australia, 4) New Zealand and 5) the UK, emphasising respectively accessibility distributions regarding 1) car ownership in the lowest quintile income, racial differences, and equity measures correcting for higher valuation of high income groups as compared to low income groups, 2) seniors, low income groups and single parent households on reduced car ownership, job accessibility and fast food rather than retail food accessibility, 3) *Forced Car Ownership* (FCO)

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[1] See also illustration of this phenomenon in Martens (2017a, p.31)

among young people, low income households and aboriginals, 4) FCO related to poverty, disabilities and challenges to creating a feasible public transport system, and 5) the full breadth of TRSE as the UK is the originating country of the Social Exclusion Unit's report on the existence of the phenomenon (Lucas, 2012; Martens, 2017a; Rose et al., 2009; Van Wee, 2011).

The degree to which the issues of transport justice exists in the Netherlands has not yet been fully explored (Bastiaanssen et al., 2013; Martens, 2017b). Building on the A2 Maastricht example, the newspapers 'Volkskrant' and 'NRC Handelsblad' adress primarily environmental distributional issues rather than accessibility deficits (e.g. De Graaf, 2016b). As the Maastricht can be considered as a best-practice ABA case, the question rises how it integrated notions of (transport) justice within infrastructure planning.

1.1.4 Integrating area-based approaches and justice: resolving constraints

On basis of the previous discussion it can be concluded that the integration of road infrastructure planning and justice addresses matters of *just distributions*, i.e. distributional justice. The planning process of integration of road infrastructure planning and land-use addresses, among others *what justly arrived at* comprises, i.e. procedural justice. The question rises why justice and ABA aren't integrated to fully come to an assessment of fairness of transport systems by assessing *just distributions justly arrived at* (Figure 1.1). Indeed, "theories of social justice (…) are often developed in a philosophical space somewhat isolated from actual processes of human development" (Nielsen and Axelsen, 2017). Justice and ABA have to be collectively assessed to assess fairness, as justice "cannot be judged in isolation from the process of which they (fair distributions) are an outcome" (Pereira et al., 2017)(p.186). However, several inhibitions for assessing either distributional, procedural or both justices may exist.

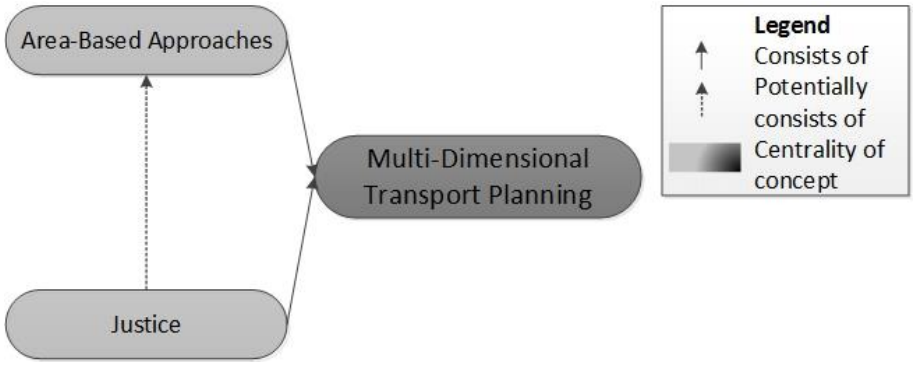

Figure 1.1: Basic Conceptual Model: Relating Area-Based Approaches and Justice in Transport Planning

Firstly, distributional issues in transport such as congestion, environmental nuisances, and public transport deficits are not easy to solve since effective policies are usually unpopular among strong interest groups (Rietveld, 2003). Secondly, procedural issues are difficult in itself because of both globalisation and fragmentation, centralisation and decentralisation, and an increasing emphasis on public participation (Geerlings & Stead 2003, p.187). Additionally, even though "complementarity of land uses have been on the Dutch policy agenda since 1998 (…) the institutional context of integrated planning has remained fragmented (Heeres et al 2016., p.427). Thirdly, "a major problem is that it is not at all easy to define the level of accessibility that people should have and below which implies that a problem exists legitimating or necessitating policy"

(Van Wee & Geurs, 2011, p.359). Consequently, combining distributional justice (level accessibility) with procedural justice (legitimating or necessitating policy) is challenging. Another inhibition of matching procedural and distributive justice is that "a particular decision may seem equitable when evaluated one way but inequitable when evaluated another" (Van Wee & Geurs, 2011, p.355).

Without matching procedural and distributive justice, the transport-related distributions that have been created, are created and will be created are not necessarily unfair, but are left to the domain of "unconscious (in)competence" (Flower, 1999), thereby making it unclear whether the merits and demerits of the transport sector are fairly distributed.

Goal

Therefore, the goal of this study is to *explore* what the implications of the justice concept are for area-based approaches and how these notions of justice can be taken into account in Dutch transport planning practice.

Research questions

The research questions are formulated as follows: what are the implications of the justice concept for area-based approaches in road infrastructure planning and how can area-based approaches take these notions of justice into account in Dutch road infrastructure planning practice? This question can be answered through the following sub questions:

- What characteristics differentiate area-based approaches from traditional road infrastructure planning?
- What are the main conceptions of justice in relation to transport?
- How can the justice conception be connected to the road infrastructure area-based approaches?

Chapter 2.1 elaborates on area-based approaches through various types of spatial-functional and institutional-organisational integration. Next, chapter 2.2 provides an overview of justice literature and its relevance to transport planning. Then, chapter 2.3 contrasts how traditional road infrastructure planning, area-based approaches and transport justice trade-off the traditional three characteristics of transport policy valuation comprising efficiency, environment and equity dimensions. Moreover, the various types of justice are compared with the various characteristics of area-based approaches, which provides the basis for the empirical analysis of the influence of justice on area-based approaches. Incremental conceptual models (Figure 1.1; Figure 2.1; Figure 2.6; Figure 2.9; Figure 2.10; Figure 2.17) are included to provide an overview of these steps. Thereafter, chapter 3 outlines the extended case study methodology to assess justice in the A2 Maastricht motorway case. Chapter 4 depicts the results in order to portray how the notions of justice can be taken into account in Dutch transport planning practice in chapter 5.

2 Theoretical Framework

2.1 Area-based approaches

2.1.1 Integration as prime characteristics of area-based approaches

Area-based approaches (ABAs) aim to find integrated, innovative combinations between road infrastructure and developments in other spatial policy sectors by combining various types of multi-scalar spatial-functional and institutional-organizational integration (Arts et al., 2016; Heeres et al., 2012b). ABAs are often contrasted with the sectorally oriented transport planning of the 1960s. Illustrating, ABAs emphasise the combination of technical, top-down with participatory, bottom-up approaches, whereas traditional infrastructure planning government agencies focussed on merely formal requirements for public consultation (Arts et al., 2016). *Prime characteristic* of ABAs are various types of *integration* (Arts et al., 2016; Heeres et al., 2012b). The two main dimensions that characterise ABAs are "(1) the functional-spatial plans and designs and (2) related institutional organization that provides structure to inter-actor collaboration and that has to assure that time and money constrains are realistic" (Heeres et al., 2012b, p.150). Table 2-1 summarises characteristics of ABAs as contrasted by traditional transport planning and is visualised in summarised form in Figure 2.1 and completely in Figure 2.6 on page 20. Both these figures are an elaboration of the section that is circled in Figure 2.2.

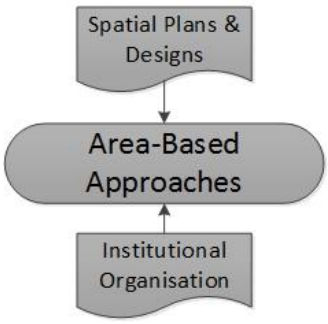

Figure 2.1: The dimensions of area-based approaches.

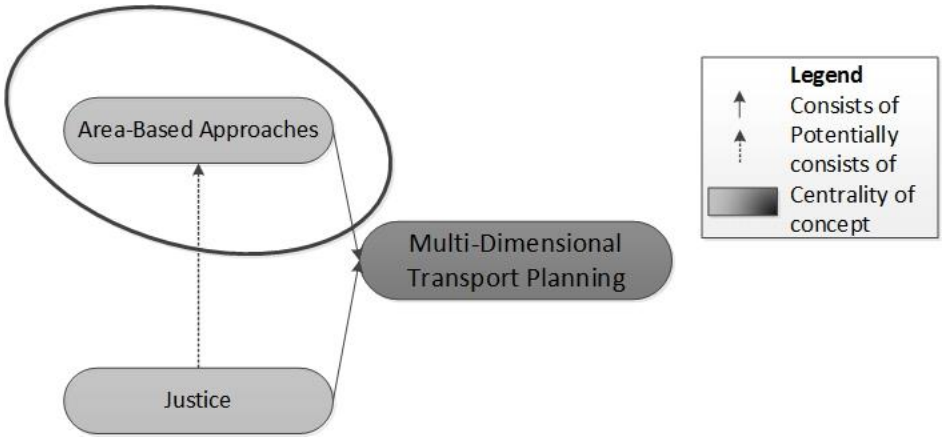

Figure 2.2: Basic Conceptual Model: Relating Area-Based Approaches and Justice in Transport Planning – Focusing on Area-Based Approaches

Table 2-1: Characteristics of area-based approaches structured by two dimensions and types of integration

	Traditional Transport Planning	**Area-Based Approaches**	**Source**
Goal	National motorway growth. Economically oriented segregation	Sustainable and integrated development, combining economic, social and ecological aspects. Enhance spatial quality and Quality of Life. Limit congestion, enhance reliability, reduce total travel time	Heeres et al. 2012a; Arts et al., 2016; Struiksma et al., 2008
Dimension 1: Spatial plans and designs			*Heeres et al. 2012a*
Spatial scope	Infrastructure, line-oriented, end-of-pipe, narrow corridors, *project-driven integration*	Broader, fuzzy spatial scope than traditional transport planning. Area surrounding the infrastructure projects, broader spatial system. *Plan-driven integration*	Heeres et al. 2012a,b, 2016; Struiksma et al., 2008 Arts et al., 2016
Functional Orientation / Scope	Sectoral, silos, road infrastructure component focussed, functional isolation	Integration with other spatial functions / sectors ; *inter-territorial and inter-sectoral integration*. Incorporates secondary transport infrastructure network. Requires network optimisation at various spatial scales. E.g. multi-modal corridors, transit oriented development	Heeres et al. 2012a, b, 2016; Struiksma et al., 2008; Arts et al., 2016; Geerlings & Stead, 2003
Dimension 2: Institutional organization			*Heeres et al. 2012a*
Time scope	Limited, project-based	Broadend but limited. Full life cycle of places and infrastructures (renewal, redevelopment, circular economy, asset management), changing paradigms (lifestyles and linkages to mobility), strategy development for transitions towards multi-modality and integration with land-use. *Paralell and serial integration*	Heeres et al. 2012a, b, 2016
Extent of Interaction, Policy Framework	Limited interaction, often central, sectoral, specific planning agencies	*Horizontally and vertically integrated* , between policy communities. Broad, multi actor, involving state, market and other civic, societal partners. Complementary actors who share the initiative for spatial intervention. Open planning instruments. *Organizational integration*	Heeres et al. 2012a, 2016; Arts et al., 2016; Hull 2008; Struiksma et al., 2008; Geerlings & Stead, 2003
Financial matters	Publically provided	Integrated investments of public and private actors. Early involvement of (local) stake-holders preventing inefficiencies. *Simultaneous integration*	Heeres et al. 2012a; Arts et al., 2016; Hull 2008
Remaining important concepts	Top-down hierarchical steering. Singly allocated responsibility / owernship, power and resource availibity	Allocation of responsibility, sense of ownership, power, resource availability. Ability to come to a shared goal and commitment; inter-personal skills to come to intersectoral integration (work in different cultures and languages)	Hull 2008 Arts et al., 2016 Te Brommelstoet & Bertolini, 2010; Heeres et al., 2012b

Goal

Area-based approaches intend to *integrate* and synergize infrastructure and land-use planning and thereby improve the merit of both (Heeres et al., 2012a), deal with interrelatedness and fragmentation (Heeres et al., 2016), and limit congestion, enhance reliability, and reduce total travelling time (Struiksma et al., 2008). “There is widespread acceptance that integrating decisions across these sectors is crucial for sustainable development” (Geerlings and Stead, 2003)(p.187), that integrated planning can lead to investment cost, social, and economic revenue improvements (Arts et al., 2016), and that integration can lead to synergies, added-value whether or not financial

that would not have been created without coordination (Heeres et al., 2012a) although it is still scarcely present (Te Brömmelstroet and Bertolini, 2010). Four general types of integration are distinguished (Geerlings and Stead, 2003; Heeres et al., 2016):

- Vertical integration – policy integration between different levels of government;
- Horizontal integration – policy integration between sectors or professions within one organisation (i.e. inter-sectoral);
- Inter-territorial integration – policy integration between neighbouring authorities or authorities with some shared interest in infrastructure and/or resources. Inter-territtorial integration therefore concerns *plan-* rather than *project-driven* integration;
- Inter-sectoral integration – policy integration between different sections or professions within one department.

A specific type of inter-sectoral integration is *internal integration*, "a process of convergence of policy-making and planning for several components within the traffic and transport policy sector" (Heeres et al., 2012a p.150) that started in the Netherlands in the 1970s. This type of integration considers the coherence of the main road network and underlying roads rather than networks in themself. Consequently, infrastructure mangers need to cooperate to allign these networks. Therefore, a focus on internal integration instigates horizontal integration.

Spatial and Functional Scope and Integration

First, the spatial scope of ABAs are inter-territorially integrated to an undetermined, fuzzy, context-dependent degree. The flexibility this provides is important for planning practice to be truly holistic (Heeres et al., 2012a). Second, the functional scope varies from functional isolation to internal and external integration (Heeres et al., 2012b, 2012a, 2016). Especially external integration is defining for ABAs, as proper external integration then requires that both the "road infrastructure should be adapted to its surroundings and vice versa" (Heeres et al. 2012b, p.152). External integration is "as a process of integration between road infrastructure and further spatial policy sectors" (Heeres et al. 2012b, p.150), which assesses needs, demands and opportunities within an area on the one hand, and the design of the transport infrastructure on the other (Struiksma et al., 2008). The mutual adaptation of area and road infrastructure is visualised as a shift from inside-out to outside-in thinking (Figure 2.3) and shows the strong interrelation of the functional and spatial scope.

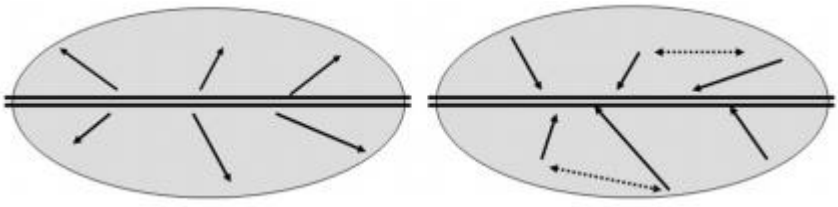

Figure 2.3: Area-based approaches require thinking from infrastructure elements to the area (inside-out, left) and from the area towards infrastructure elements (outside-in, right)(Heeres et al., 2012b).

Another spatial and functional integration aspect concerns the Land-Use Transport Feedback Cycle. This cycle is elaborated on in the section on institutional and organizational dimensions to emphasise its path-dependency and lock-in effects *over time.*

Institutional-Organizational Integration – Time Scope

Strategic and conceptual choices are made in early stages of the planning process regarding economic and social aspects rather than technical, implementation aspects (Heeres et al., 2016). Further temporal issues in a planning project can be divided in (Heeres et al. 2012b, p.2535):

- Parallel integration: doing activities that can be done at the same time simultaneously;
- Serial integration: doing activities in a logical order to get the most out of it;
- Simultaneous integration: sharing resource streams and integrated budgeting to keep the costs of planning, realization and management down through increasing the efficiency of investments.

Furthermore, effects on the land-use system that occur due to infrastructure projects over time are described by the Land-Use Transport Feedback Cycle (Figure 2.4)(Arts et al., 2016; Heeres et al., 2016; Wegener and Fürst, 1999). Land-use comprises spatial functions such as residential, industrial and commercial land use and thus determines activities. Activities concern the distribution of human activities requiring trips. The transport system shapes the opportunities for these trips and affect accessibility. Finally, accessibility is the measure of the transport system and co-determines location decisions, therefore ending up again at land-use. Concluding, the cycle stresses that the transport system thus influences land-use, and vice versa.

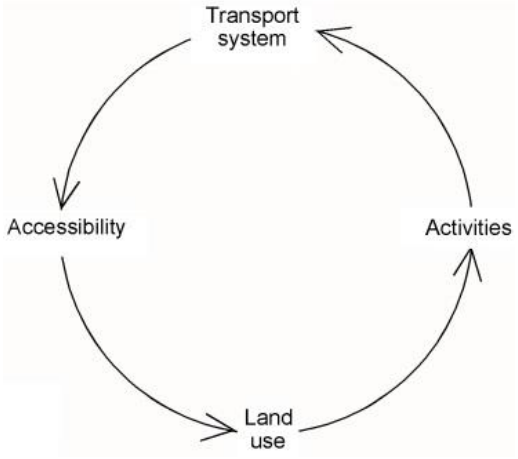

Figure 2.4: The Land-Use Transport Feedback Cycle, indicating how its component influence each other over time (Wegener and Fürst, 1999)

Consequently, the cycle requires assessing *plan*- rather than mere *project*-integration. Otherwise, a path-dependency of the incremental development of land-use and transport system developments might create a lock-in situation (Martens, 2017a; Van Wee, 2011)[2]. A lock-in is undesireable, first because people who are locked-in either spatially or mode wise aren't able to change their transport options and activities easily given the theory of constant travel time budgets[3] (Mokhtarian and Chen, 2004). Secondly, a lock-in situation is characterized by increasing spatially concentrated demands. This can be considered as unsustainable since the ongoing upgrading of the road network can trigger both environmental pollution (e.g. increasing pollution because of higher

[2] It is likely that this phenomenon will occur, as (1) the old infrastructure comprises huge sunk costs and will therefore not be quickly disbanded, (2) the situation is hard to counter due to an increasing degree of scarcity of space over time, and (3) because infrastructure and land-uses develop slowly take time to adapt (Wegener & Furst, 1999).

[3] On average, people spend a fixed amount of time on travel, regardless of income levels or culture

congestion levels), socially undesirable results (regarding distribution of employment) and inefficiencies (economic damage due to congestion) (Struiksma et al., 2008). Concluding, temporal integration in ABAs comprise plan-integration and assessment of land-use and transport effects.

Institutional-Organizational Integration –Extent of Interaction

Organizational integration comprises vertical and horizontal integration where ABAs concern broad actor constellations, involving actors from state, market and societal parties (Arts et al., 2016). The intensity of the collaboration can vary from no cooperation and central guidance, through coordinated action to actual co-production (Heeres et al., 2016). Arguably, a characteristic of organizational integration is an increasing number of actors. The motivation for organizational integration may differ, building on 1) sustainable, 2) financial, neo-liberal agendas, and 3) feasibility of the planning process (Heeres et al., 2012b).

An important sustainable development argument for organizational integration is (early) involvement to better align needs and land-uses. An important financial reason for including a broad actor constellation is to prevent disagreements in a later stage of infrastructure development (Struiksma et al., 2008). Finally, no actor is capable of tackling the complexity of the planning issues at hand alone (Heeres et al., 2012b).

Moreover, a relationship exists between the spatial, functional and organisational scope (Figure 2.5). Generally, as the functional and spatial scope increase, so should organizational integration (Heeres et al., 2012b)(p.153). Moreover, the figure makes clear that the increase of spatial and functional scope does not have to be linear. This relationship raises questions on when the degrees of organisational and spatial-functional integration can be regarded as 'fitting' (Zuidema, 2011), i.e. at what spatial and organisational scope justice should be integrated.

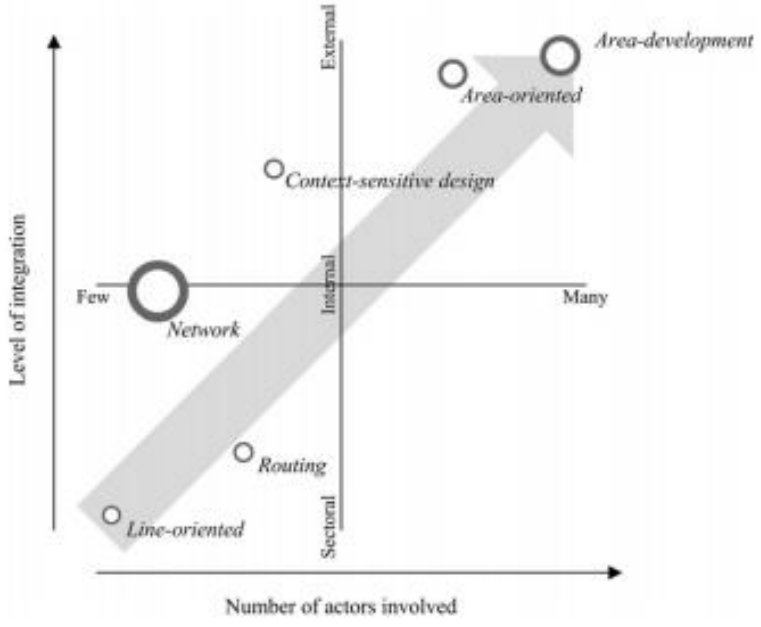

Figure 2.5: Schematising area-based approaches along axes of the level of integration, actor involvement and spatial dimensions. The size of the dots reflects the spatial focus (small: local focus; larger: regional focus)(Heeres et al., 2012b).

However, participation and a larger number of actors also poses problems. First, the larger the participation process, the higher the potential for time and cost overruns (Arts et al., 2016; Heeres et al., 2012b). Additionally, it is argued that as the differences between the representation of spatial entities differs more, collaboration becomes harder (Hull, 2008).

Institutional-Organizational Integration – Financial Matters

With transport planning no longer being able to finance itself through own sources of funding (Heeres et al., 2012b), an important barrier to successful policy integration concerns the division of costs and benefits, especially when the costs come to one party and the benefits to another (Geerlings and Stead, 2003). Then, in ABAs public investment can be combined with profit seeking private actors for related spatial developments for *efficient* task distrbution (Heeres et al., 2012b). Indeed, organizational integration or participation may well be employed for preventing cost overruns (Struiksma et al., 2008), and/or for inter-sectoral financiering abilities (Geerlings and Stead, 2003).

Concepts related to Integration

Finally, by incorporating further spatial-functional and institutional-organizational integration, numerous new concepts become relevant for ABAs. First, as transport professionals potentially have a different culture and language than other public sector officials (Hull, 2008), various types of integration require actors to 'talk different languages'. For example, when a professional talks about planning objects, they might differ in discussing places or networks which can inhibit successful integration (Te Brömmelstroet and Bertolini, 2010). Additionally, aspects of power, allocation of responsibility, sense of ownership, and willingness to cooperate require increasing attention when the extent of interaction increases (Heeres et al., 2012b; Hull, 2008), as otherwise the indicated disadvantages of larger participation (Arts et al., 2016) might occur. "The typical case is that a number of departments are responsible for one aspect of the problem or another but none is responsible for it in its entirety" (Geerlings and Stead, 2003)(p.194). Consequently, coordination of stakeholders and interdepartmental issues, departmental heads backing the policies, become important (Hull, 2008).

2.1.2 A conceptual model and barriers to integration in area-based approaches

A preliminary conclusion regarding the first sub question on the characteristics of area-based approaches may be that area-based approaches underscore the importance of integrating spatial-functional and institutional-organisational dimensions of transport, striving for balanced sustainable development of transport planning. The functional scope of ABAs comprises internal and external integration, and land-use and transport effects. The spatial scope of ABAs is inter-territorially integrated to a fuzzy, context-dependend degree. Organizational integration follows from the spatial-functional demarcation, comprising inter-sectoral, horizontal, and vertical integration. Compared to traditional transport planning, the scope of ABAs is widened regarding these spatial, functional, temporal, organisational, and financial elements. Consequently, ABAs incorporate multiple concepts such as power, responsibility, sense of ownership, and inter-personal skills to transport planning. Although ABAs have been gaining more attention, their

implementation in practice is scarcely present. However, ABAs are considered a promising approach to respond to deficiencies of traditional and contemporary road planning. Figure 2.6 visualises this chapter in a conceptual model. The aggregation of organizational integration is required for analytical purposes during the methodological and empirical parts of this thesis and will be argued for in those respective chapters. By contrasting traditional transport planning (TTP) with ABAs along their various characteristics and types of integration *on a spectrum* of fully segregated to fully integrated, an indication of the degree of integration is acquired. The question then rises why ABAs are not common practice if they are so promising, i.e. what are the barriers to integration?

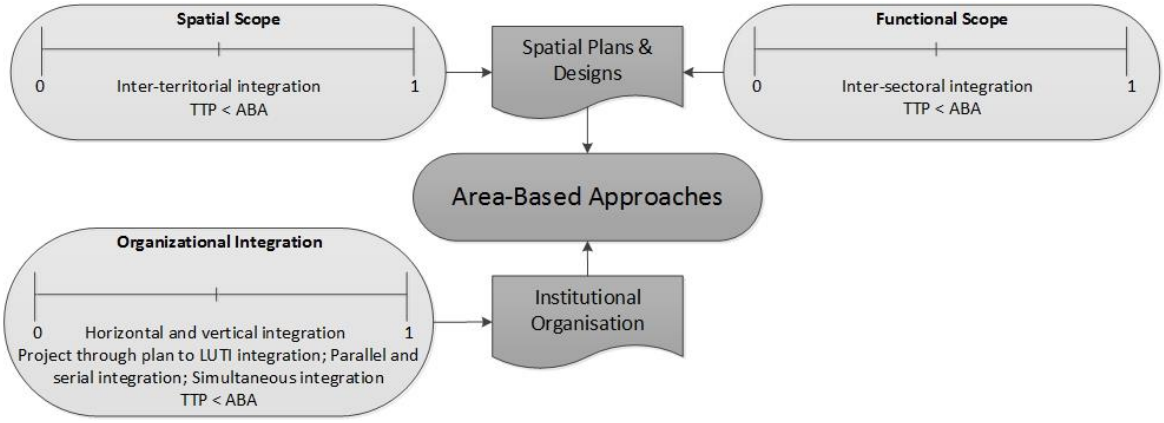

Figure 2.6: Conceptual model of the dimensions and characteristics of integration as related to Traditional Transport Planning (TTP), Area-Based Approaches (ABA).

Although integration can combine competing objectives while acknowledging heterogeneous characteristics of varying actors, integration is relatively understudied in road infrastructure planning. It is not self-evident that all actors involved in the policy process want policy integration (Hull, 2008). Important barriers comprise 1) the generally lower recognition for lower-key contributions to corporate goals, 2) the lack of rewards (financial, status, career) for promoting someone else's objectives, and 3) lacking mechanisms for reconciling conflicting priorities (Geerlings & Stead, 2003). Additionally, the often rigid spatial-administrative frameworks do not correspond to the more flexible demarcation of area-oriented projects (Arts et al., 2016; Heeres et al., 2012b). Moreover, integration attempts mainly address the environmental dimension of sustainability rather than holistic sustainability aims (Heeres et al., 2012a) which may additionally be argued to be important for the incorporation of justice.

2.2 Justice

2.2.1 Distinguishing justice: alternatives, equalizanda, and distributional principles

This section builds a foundation to compare justice with area-based approaches (ABAs). Figure 2.8 positions the section of Figure 1.1 that this section expands upon. First, I distinguish justice from other types of the equity dimension of transport planning valuation (cf. Rietveld, 2003). Then, key elements of justice are defined, comprising first the *equalizandum* i.e. that what is supposed to be equalized and addressed by concepts of justice. The equalizanda of all Rietveldian transport planning valuation are elaborated upon. Next, different theories of justice are elaborated upon to distinguish *distributional principles and characteristics* for these equalizanda. Figure 2.7 visualises these dimensions. I argue that a specific combination of these equalizanda and principles characterise transport justice.

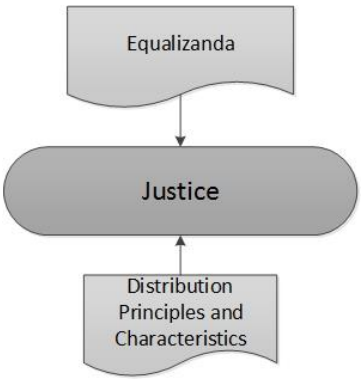

Figure 2.7: The dimensions of justice

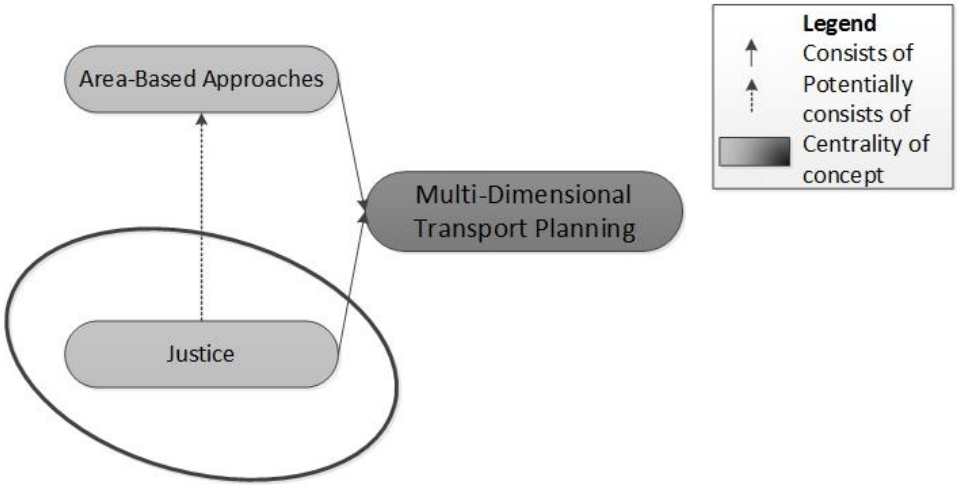

Figure 2.8: Relating Area-Based Approaches and Justice in Transport Planning – Focusing on Justice

Distinguishing Justice, Fairness and Equity

Often, equity, fairness, and justice are used interchangeably in the transport community (Thomopoulos et al., 2009). However, recent explorations in the political philosophy of justice (Martens, 2017a; Pereira et al., 2017) point out that the fairness of transport systems can be better understood by distinguishing these concepts. *For example, not all inequality is unfair, and differences in inequality have to be justified. Therefore, what is fair is based on different concepts of justice* (Ibid.). Then, to roughly distinguish the concepts:

- Fairness can be considered as an implicit and/or explicit context-specific assessment of equity or justice based on both procedural and distributional matters. A situation is fair when it can be characterised as a just distribution justly arrived at (Harvey, 1973).
- Equity implies general moral judgement about distribution effects emphasising people, groups of people and regions according to their abilities along various types and principles of equity such as horizontal, vertical and territorial equity (Thomopoulos et al., 2009; Wee and Geurs, 2011).

- "Justice can be understood as a broad moral and political idea that relates to 1) how benefits and burdens are distributed in society (distributive justice); 2) the fairness of processes and procedures of decision and distribution (procedural justice); 3) the rights and entitlements which should be recognised and enforced" (Pereira et al., 2017)(p.171). The study of justice emphasises (ethical) theories such as utilitarianism, egalitarianism, and sufficientarianism to distinguish equality from equity, with the equality relating to the distribution of a particular good irrespective of moral judgement and the latter implying moral judgement (Pereira et al., 2017; Wee and Geurs, 2011).

Distinguishing Economic, Environmental, Social and Transport Justice

I will stick to the notion of *justice*, which emphasises a distributional logic based on ethical theories, because "most policymakers remain largely oblivious to the underpinning ethical principles upon which their evaluation frameworks are based and so may overlook the inherent value biases within them" (Lucas et al., 2016)(p. 476). Although "there is hardly any explicit literature on the ethical dimensions of transport" (Van Wee 2011, p.2), there has been a growing interest on ethical principles to inform public policies as no policy is entirely value-free (Lucas et al., 2016), whereas application of these ethical dimensions to the transport domain is still in a phase of paradigm development (Martens, 2017a). The Stanford Encyclopedia of Philosophy describes justice as "the constant and perpetual will to render to each his due" (2017). Acknowledging the highly abstract description, it states "that no comprehensive theory of justice is available to us; we will have to make do with partial theories – theories about what justice requires in particular domains of human life" (Stanford Encyclopedia of Philosophy, 2017). Relevant partial theories to apply justice to transport planning are those that 1) elaborate on the dimensions of Rietveld's valuation (2003), 2) provide characteristics for the *equalizandum* or that what it is to be equalized (Martens & Golub, 2012)(e.g. income or accessibility), and 3) a certain *distributional logic*, discerning how and to what ends a just society distributes various benefits and burdens, as opposed to ethical concerns of right and wrong (Schlosberg, 2004; 2009). An example of 1 and 2 is the higher the relative weight on the equity dimension, the more likely it is that the chosen transport policy will emphasise the social impacts on particular groups of stakeholders of transport policies (Rietveld, 2003). Or, the higher the relative weight on the efficiency dimension, the more likely it is that the chosen transport policy will emphasise traffic flow or financial efficiency in general. Therefore, first the concept of justice is divided in economic justice, environmental justice, social justice, and is aggregated to transport justice.

2.2.2 Substantiating Justice: Partial Theories and Equalizanda

First, social justice is defined as "the objective of creating a fair and equal society in which each individual matters, their rights are recognized and protected, and decisions are made in ways that are fair and honest" (Park, 2015). Moreover, social justice concerns questions of "who gets what, who misses out, and where all this occurs" (Mayhew 2015, p.258). Therefore, the less a justice

ethical theory stresses the importance of interpersonal differences or equalities and priorities[4] the less it can be considered to put a heavy weight on the equity dimension (Lucas et al., 2016; Martens, 2017a; Van Wee, 2011), "as it is long recognized that the heavy weight attached to equity in political debates is not reflected by a similar weight on equity in ex ante policy studies" (Rietveld, 2003)(@p.). The equalizandum of social justice differs per theory of social justice, comprising liberties, opportunities, capabilities, and welfare (Pereira et al., 2017; Rawls, 1999; Sen, 2009; Axelsen & Nielsen, 2015). Translated to indicators in the field of transport, measures to reflect this understanding of justice are space-time measures *not* based on actual behaviour (Martens & Golub, 2012; Van Wee & Geurs, 2011; Geurs & van Wee, 2004)[5].

Secondly, environmental justice concerns "the question of the unequal distribution of harmful environments between people" (Hill & Boxley 2007, p.37). Environmental justice is met when 'the right to live in and enjoy a clean and healthful environment' is adhered to (Agyeman & Evans, 2004). Sometimes the definition is expanded to ecological justice, "the justice of the relationship between humans and the rest of the world" (ibid.). Also called environmental ethics, environmental justice emphasizes not committing to an anthropocentric or ecocentric perspective (Stanford Encyclopedia of Philosophy, 2015a). It assumes that the *value of nature is independent from the utility* that mankind assigns to it, unmeasurable by monetary values. Futhermore, key questions raised in environmental justice comprise the maintenance of possible uses of the environment in an undefined future rather than sacrificing biodiversity for social or economic ends now (Ibid.). Therefore, the equalizandum of environmental justice concern varying environmental indicators[6]. Additionally, Lucas (2006) suggests that over-reliance on car usage and more polluting second-hand cars also belong to environmental justice. Here, the equalizandum is considered as the flora and fauna and not as general surroundings in order to distinguish transport justice from environmental justice.

Thirdly, economic justice concerns normative issues on resource allocation and traditionally relies on *utility* for interpretation of inequality (Stanford Encyclopedia of Philosophy, 2016, 2014). Utility is used as a measurement for pleasure itself (Mill, 1863). Economic justice concerns itself with Pareto improvements[7] or compensation by the winners of a policy decision towards those worse off. The equalizandum of economic justice mainly concerns income inequality or welfare. Translated to the field of transport, measures to reflect this *efficiency* understanding of justice are infrastructure-based measures (e.g. travel speed), distance measures, and "welfare levels that persons derive from travel or combined travel and activity participation" (Martens & Golub, 2012, p.200).

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[4] Be it in needs, (dis)abilities, opportunities, perceptions, skills, preferences, experiences, constraints or other personal and cultural factors

[5] Not actual behavior because freedom of movement is considered crucial from social justice perspectives; actual behavior does not accurately reflect options or freedom of choice (Martens & Golub, 2012; Martens, 2017a).

[6] Such as lead contamination, pesticides, water and air pollution, workplace safety, but also sprawl (Agyeman & Evans, 2004).

[7] A Pareto optimum is reached when nobody can increase personal welfare, unless someone else's welfare decreases (Van Wee, 2011)

Finally, transport justice seeks to define what a fair transportation system is, taking accessibility as the equalizandum[8]. Although accessibility inequalities are strongly correlated with income inequalities[9], transport justice should be a separate sphere of justice (Martens, 2012) because of the substantial disparities in accessibility and its consequences of not being able to accumulate economic and social capital, to participate in society (Lucas, 2012; Kaufmann et al., 2004; Lucas and Currie, 2012). Moreover, transport justice stresses that accessibility distributions should be unbiased towards high income social economic groups, dense areas, or people who suffer mental and physical problems. Applicable transport justice indicators are cumulative opportunities measures, gravity-based measures, and doubly constrained accessibility measures (Lucas et al., 2016; Martens & Golub, 2012; Van Wee & Geurs, 2011)[10].

Summarising, partial theories of justice recognise different equalizanda: 1) social justice focusses on liberties, opportunities, capabilities, and welfare, 2) environmental justice focusses on varying environmental indicators, 3) economic justice focusses on resource allocation and utility, and 4) transport justice focusses on accessibility levels and accompanying biases towards high income groups, dense areas, or the mentally and physically challenged.

Next, to understand what distrubition of the equalizanda is considered as a fair situation, the *distributional principles and characteristics* that transport justice builds are expanded on (based on Pereira et al., 2017). Since the discussion of each distribution principle by itself would distract too much from the main message of the influence of justice in transport on area-based approaches as it is a too extensive literature review, this is moved to Appendix III. Therefore, here only the most basic description of these principles is provided so a basic understanding of transport justice can be formed.

1. The theory of *egalitarianism* (Rawls, 1999) states that everyone should have *equal* right to primary social goods, "things … a rational man wants whatever else he wants because with more primary goods men can generally be assured in carrying out their intentions and in advancing their ends, whatever these ends may be" (Martens 2017a, p.64). When inequalities occur due to morally arbitrary circumstances such as natural lotteries of conditions in which one is born (e.g. health, intelligence, family), then egalitarianism holds that these worst-off members of society are to be benefitted most which is called the *difference principle* or *maxmin criterion* (Pereira et al., 2017).
2. "*Sufficientarianism* assumes that everybody should be well-off up to a certain *minimum threshold*" (Van Wee 2011, p.83), "which is sufficient for fulfilling their basic needs and to guarantee their continued wellbeing" (Lucas et al. 2016, p.477), i.e. when everyone has enough (Axelsen & Nielsen, 2017; 2015; Casal, 2007). Sufficientarianists acknowledge that determining a sufficiency threshold is highly subjective and subjected to *issues of voluntary choice* through e.g. the development of constitutive interests (Kanschik, 2015).

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[8] Martens (2017a) extensively argues for taking accessibility rather than activity participation as the equalizandum. To repeat the analysis of this requires extensive discussion of political philosophy and is therefore considered out of scope. It suffices to say that accessibility best captures freedom of choice, voluntary choice or personal preferences and capabilities.

[9] Resource poverty, be it money, time or other capabilities will lower accessibility levels (Martens, 2017a).

3. *Prioritarianism* states that the worse-off one is, the more the benefits matter to that person without establishing a harsh sufficiency threshold (Arneson, 2000; Kanschik, 2015; Martens, 2017a; Parfit, 1991; Van Wee, 2011).
4. The *capability approach* (Sen, 2009) focusses on "what people are actually able to do" (Nielsen & Axelsen 2017, p.48) by focussing on *capabilities*, "sets of freedoms and opportunities available for individuals to choose and to act, resulting from (…) a combination of personal abilities and the political, scoal and economic environment" (Pereira et al., 2017 p.175, as based on Nussbaum, 2011).
5. *Contractarianism* states that "whether an action is right or wrong depends on whether it accords with or violates principles that would be the object of an agreement, contract or choice made under certain conditions by members of the moral community" (Darwall, 2003, as cited by Van Wee, 2011, p.39). It builds strongly on *intergenerational justice*, which emphasises that justice is met when considering interests of future generations (Hill & Boxley, 2007).
6. *Utilitarianism* is "the claim that an act is morally right if (…) that act maximizes the good, that is (…) the toal amount of good fo all, minus the total amount of the bad for all, is great than this net amount for any incompatible act available to the agendt on that occasion" (Martens, 2017a; Mill, 1863; Stanford Encyclopedia of Philosophy, 2014). Utilitarianism's aim is to maximise the total welfare of an entire society (Thomopolous, 2009).

Next, Table 2-2 summarises the distribution principles for transport justice as based on the literature review of Appendix III. The table is visualised and summarised in Figure 2.9.

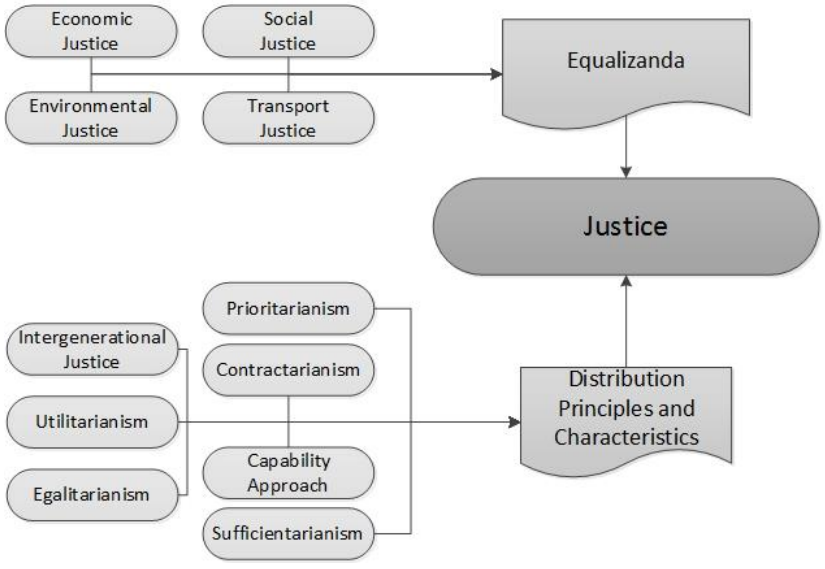

Figure 2.9: The dimensions and characteristics of justice as related to that what is supposed to be equalized or the equalizanda and the distributional mechanisms that can accompany these equalizanda.

2.2.3 Substantiating Transport Justice: Theories and Distribution Principles

Transport Justice[10] *– Understanding Social, Environmental, and Economic Justice in relation to Transport Justice*

Table 2-2: Justice characteristics – transport justice (own production)(for based-on sources, see Tables 2-2 through 2-7 in Appendix III)

Transport Justice	
Equalizandum	Transport Equalizandum = Accessibility through cumulative opportunities measures, gravity-based measures, and doubly constrained accessibility measures
Distribution principles Transport Justice	Adresses transport-related social exclusion (TRSE) and transport deprivation (TD)
	Focusses on certain social economic groups (SEGs) especially low-income groups, handicapped, inhabitants of rural areas and persons who lack access to certain traffic modes
	Responds to the shortcomings of utilitarianism especially regarding how it **structurally** and **incrementally** perpetuates TRSE and TD for these **SEGs** and **areas** over time through path-dependency and lock-in mechanisms
	In an ageing society, more resources should be set aside for travel
	In societies experiencing economic growth, more resources should be set aside for reducing accessibility disparities for persons with travel-related impairments
Distribution principles Egalitarianism	As with the social justice theory of egalitarianism, the difference principle & maxmin criterion, stating that inequalities are to be adressed to the people in the worst-off position. I.e., the proceeds from transport insurances are to be spent on eliminating accessibility insufficienies
	As with the social justice theory of egalitarianism, distribution fairness is based on 'honouration over an entire life'.
Distribution principles Contractarianism	As with the environmental justice theory of contractarianism, justice is met depending on whether actions adhere to principles of an agreement. I.e., Considers transport fair when brute bad luck is insured against or compensated for. It is a governments duty to do so
	The more citizens are struck by brute bad luck, the fairer it is to offer an alternative i.e. public transportation system
Distribution principles Sufficientarianism	Rejects argument of offensive and expensive tastes
	An injustice is done whenever a person experiences an insufficient level of accessibility. As with the social justice theory of sufficientarianism, a mininimum threshold to 'having enough'.
	Not all inequality is unfair
Distribution principles Capability approach	As with the social justice theory of the capability approach, the primary focus of justice is on capabilities that enable individuals to act, not income
	As with the social justice theory of the capability approach, the external environment (culture/ relative to local preferences) of people matters in determining capability thresholds and in enabling people their threshold
Distribution principles Prioritarianism	As with the social justice theory of prioritarianims, benefits matter increasingly more the worse-off someone is

Recently, transport justice is developed to respond to contemporary distributional mechanisms of road infrastructure planning. “Indeed, no philosopher has explicitly and systematically addressed justice in the domain of transportation” (Martens 2017a, p.37). Transport justice’ distribution principles adress transport-related social exclusion (TRSE) and transport deprivation (TD), which emphasises negative impacts for certain social economic groups (SEGs) such as low-income groups, handicapped, inhabitants of rural areas and persons who lack access to certain traffic modes (Lucas, 2012; Lucas et al., 2016; Lucas and Currie, 2012; Martens, 2017a; Van Wee, 2011). Indeed, transport justice primarily builds on theories of social justice.

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[10] I do not elaborate on the vast literature on spatial justice, as transport justice explicitly incorporates the concern of spatial justice that ignoring space in justice is an overly simplifying assumption (Martens, 2017a; cf. Soja, 2009).

Moreover, transport justice *excludes utilitarianism* as fair distributive principle because it structurally and incrementally perpetuates TRSE and TD for aformentioned SEGs given the land-use and transport dynamics (Figure 2.4). Futhermore, matters of environmental justice are rarely connected to transport (justice) (Schweitzer & Valenzuela, 2004): although environmental distributional issues are raised in contemporary road infrastructure planning (e.g. Hamersma, 2017), trade-offs between environmental and transport justice are not the main focus of transport justice[11]. *Consequently, transport justice employs concepts of social justice to address shortcomings of economic justice while acknowledging but excluding considerations from environmental justice.*

Next, the distribution principles that transport justice *primarily* builds on are contractarianism, sufficientarianism, the capability approach, and prioritarianism (Martens, 2017a). Through a Dworkian treatment of contractarianism (Dworkin, 1981a, 1981b, 2000) in transport,these distribution principles are introduced to transport planning to shape transport justice (Martens, 2017a). The elaboration below is based on Martens 2017a. The consequent understanding of transport justice that is created in this chapter is visualized in Figure 2.10.

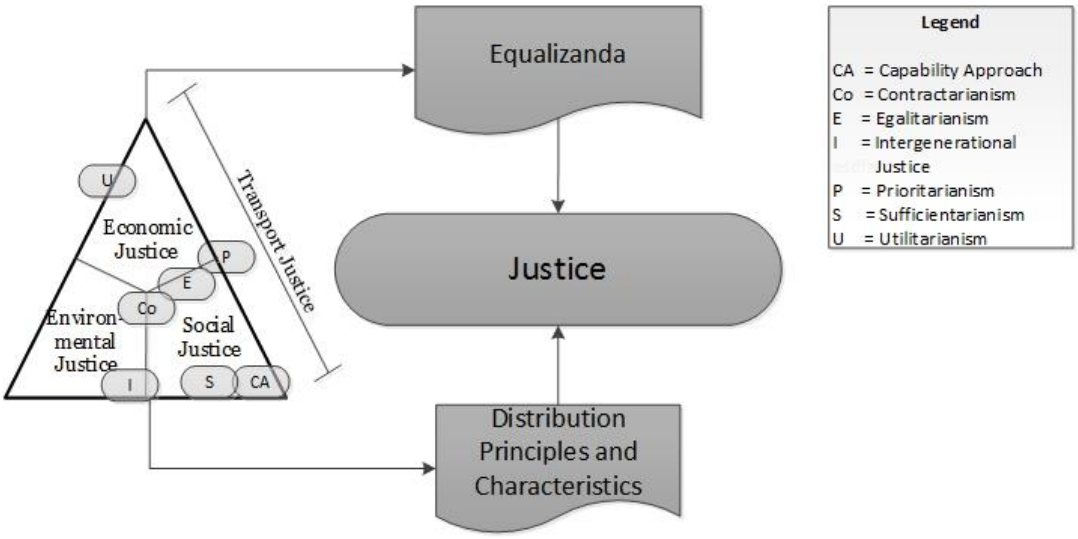

Figure 2.10: Positioning Transport Justice along the dimensions and characteristics of justice as related to the equalizanda and the distributional mechanisms that can accompany these equalizanda.

Transport Justice - Merging Contractarianism, Sufficientarianism, Capabilities, and Prioritarianism

In transport justice, Dworkian contractarianism, "a complex line of argumentation, invoking auctions and insurance schemes, to determine what it means to devote *an equal amount of resources* to each person's life" (Martens 2017a, p.84), shapes distributive mechanisms of transport justice. Dworkian contractarianism builds on four main distributive mechanisms.

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[11] It is however acknowledged that doing so might lead to different 'winners and losers' of transport decisions (Van Wee, 2011). For example, in the USA, reducing auto use might improve environmental quality, but may also affect low-income or minority residents more badly than high-income non-minority residents "given the socio-spatial concentration of both within cities across the United States" (Schweitzer & Valenzuela 2004, p.394).

First, a fair contract must be achieved, which is a contract that enables a society to have an equal amount of resources devoted to each person's life. Secondly, the division of resources is fair when the envy test is met: "none (…) would prefer someone else's bundle of resources to his own bundle" (Dworkin 1981b, p.285; Dworkin 2000, p.67)[12]. Third, insurance against brute bad luck (impairments, e.g. blindness) must be able. Brute luck refers to cases in which the person has no influence on the occurrence of a particular event" (Martens, 2017a, p.86). The insurance device "aims to make people equal in their ex ante risk of bad luck, but not in their ex post circumstances once bad luck strikes" (Dworkin 2000, p.108). Fourth, the difference principle is employed when brute bad luck strikes[13].

Next, specific justice principles for transport are derived based on eight contractarian scenarios (Appendix IV summarises all scenarios) (Martens, 2017a). The scenarios increase in complicatedness and invoke sufficientarianism, the capability approach, and prioritarianism. The scenarios start from a basic case with four assumptions: 1) inhabitants settle for an extensive period of time[14], 2) locations of desired destinations are known[15], 3) one mode of transport exists, and 4) all immigrants are able to use this system[16]. Consequently, the housing pattern of inhabitants is determined by preferences regarding out-of-home activity participation and the degree to which one dislikes travel. People with preferences for out-of-home activity live more centrally and pay more for housing, since their travel time and costs are reduced. The opposite holds for those with preferences for rural living. The resulting situation lives up to the envy test and is therefore fair.

Second, relaxing assumption 3, existence of multiple modes of transport will arguably develop transport systems in urbanised rather than peripheral areas given the lower economic viability[17] of rural transport. In essence, this means that the peripheral areas will become areas subject to Forced Car Ownership (FCO). Moreover, given utilitarian land-use and transport interactions, *over time*, an *insufficient* level of accessibility *can* occur for these rural areas. Moreover, capabilitarian concerns are raised *if* FCO is triggered and an agent is unable to be transported by car, then the situation is unfair. As these sufficientarian and capabilitarian concerns do not yet realised, this situation is still fair.

Third, relaxing only assumption 4, brute bad luck may now cause travel related impairments. Consequently, the difference principle commands an alternative transport system to be erected. However, this system will either be more expensive given the fewer users or deliver

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[12] This means that equal resources will lead to a different division of resources based on personal preferences. Preferences here are understood as those preferences elaborated under egalitarianism and sufficientarianism as well as talents, skills, welfare etc. Moreover, the arguments of offensive and expensive taste are avoided, since an auction ensures these tastes to be paid for and corrected for through the envy test.

[13] This does not mean that society *fully* compensates those struck by brute bad luck: equality of resources assumes fairness is met when everyone is equal regarding risk, not actual circumstance. Since 'honouration over an entire lifetime' under the 'veil of ignorance' ensures that prudent persons want to insure, society compensates those under brute bad luck to a degree that corresponds with the justice perception of that society (e.g. egalitarianism, sufficientarianism, etc.).

[14] This safeguards the 'honouration over an entire life' principle.

[15] This safeguards sufficientarian concerns of knowing whether one suffers sufficient accessibility.

[16] This safeguards capabilitarian concerns, and option value concerns.

[17] Based on "1) the distribution of immigrants' preferences regarding the transportation services; 2) the differences in cost structure between the transportation services; 3) the size of the economies of scale of each transportation service, in particular at substantial levels of use; and 4) population size" (Martens, 2017a, p.98).

lower accessibility levels which is especially disadvantageous for peripheral inhabitants. Moreover, the more often brute bad luck strikes, the higher the total costs for the alternative system. Consequently, more resources should be set aside for travel if the same set of preferences is to be maintained *in ageing societies,* as travel-related impairments increase with age. Concluding, transport justice demands that alternative transport systems exist for those who are impaired, and special attention should be directed for peripheral-impaired inhabitants.

Next, brute bad luck can also affect income to a minimum level. Whereas peripheral residing inhabitants 'simply' have to cut their expenditures, central residing inhabitants are forced to relocate[18] since their income will be insufficient to cover the high costs of the central location. However, the resulting situation is still fair[19] under minimum income levels from contractarian, sufficientarian, and capabilitarian perspectives, as 1) the situation lives up to the envy test since immigrants could have insured, 2) although differences are larger minimum levels are maintained, and 3) only to a limited degree affects human agency or choice options[20].

However, when brute bad luck pushes income *below* a minum i.e. insufficiency, inhabitants suffer either consumption poverty or financially-induced accessibility poverty. The difference principle requires these people to be compensated through earmarked housing or transportation subsidies, or by providing an alternative transportation system. Contractarianism and sufficientarianism consider both solutions as fair, whereas the capability approach requires the alternative transport system given its focus on human agency.

The final three scenarios reflect real-life situations where people cannot choose where they are born and raised and consequently develop constitutive interests there. Consequently, inhabitants are likely to have too much or too little accessibility regarding their preferences. However, inhabitants are unlikely to move given their constitutive interests. Therefore, insufficient accessibility can be addressed through changing the land-use system (e.g. schools, hospitals). However, as changes in land-use are rather slow to develop, expensive, and inefficient especially in peripheral areas, it is more likely that immigrants an insurance will not exist and thus reject their constitutive interests or live in hardship.

Seventhly, when inhabitants can also suffer travel-related impairments, insufficient accessibility could also occur when the alternative transportation system provides lower accessibility levels[21]. Consequently, again the only options are to either influence land-use, or employ aforementioned subsidies. Of these subsidies, the alternative transportation system may be too expensive when few people are struck by brute bad luck. Therefore, again immigrants either reject their constitutive interests or live in hardship.

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[18] This sorting effect will be stronger in societies when 1) lower floor income levels exist, because the housing stock will be more limited for those struck by brute bad luck, and 2) when preferences for high accessibility levels are dominant, as they will drive op location rent and push out lower income households.

[19] This is only fair under assumptions of this Dworkian framework. Martens (2017a) highlights that in practice, often this income and accessibility segregation is accompanied by other dimeninsions such as ethnicity.

[20] Harvey (1973) considers this situation of residential segregation based on income as unfair, as the solution from a Marxist path could only be through political engagement, and it is exactly the segregated groups that are less able to engage in these processes and thus cannot address their lower quality of life.

[21] Indeed, in practice this is often the case, where for car-users accessibility levels are sufficient, but aren't for non-car users.

Finally, a preference misfit can occur where the immigrant has massively higher levels of accessibility but suffers infinitively expensive housing costs. Although this can be solved through creating income through earmarked transportation subsidies, a scheme that links cause or a risk and protection is probably preferred, and thus earmarked housing subsidies are to be preferred. This final scenario is fair from contractarian, sufficientarian, and capabilitarian theories, even though an outcome may be to live in hardship.

Four results of this Dworkian analysis of transport justice stand out. First, insufficient accessibility causes people to either abandon their constitutive interests or live in hardship, which is fair from a contractarian perspective, but not from a sufficientarian or capabilitarian perspective. Therefore, it is a *governments' fundamental duty* to protect against TRSE. Second, this requires guaranteeing *sufficient* accessibility levels through alternative transport systems or services *as experienced by users*. Moreover, if people suffer financially-induced accessibility poverty and an alternative transport system cannot be offered, then a subsidy must be assigned to specifically this group. Finally, as changes in land-use may be inhibitively expensive, governments must strive to prevent exclusionary forces through lock-in (cf. land-use and transport interactions).

However, what is sufficient accessibility is has not yet been addressed. Given that one is excluded only when relative to that persons' societal standard one is excluded statistically significantly more than others, the search is not towards an operational definition. Rather, the process is best left to a process of *democratic deliberation*, or by building on prioritarianism to avoid the issues of establishing a strict threshold. Figure 2.11 visualises how these theories of justice inform the valuing of accessibility.

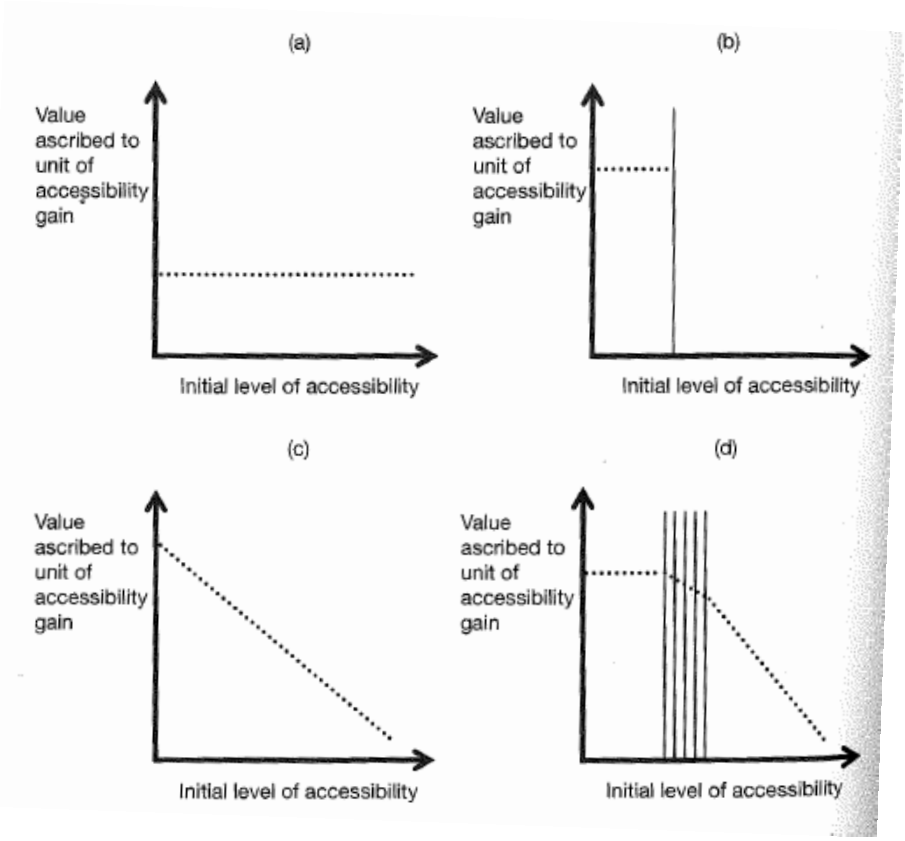

Figure 2.11: Valuing accessibility under a) utilitarianism, b) sufficientarianism, c) prioritarianism, and d) transport justice as based on the conractarian brute bad luck scenarios (Martens 2017a, p.172)

This chapter answered the second sub question, what are the main conceptions of justice in relation to transport. Concluding, transport justice employs concepts of social justice to address shortcomings of economic justice while acknowledging but excluding considerations from environmental justice to address issues of transport-related social exclusion and transport deprivation. Transport justice focusses on accessibility levels and accompanying biases towards high income groups, dense areas, or travel-related impaired. The equalizandum of transport justice is accessibility measured by cumulative opportunities measures, gravity-based measures, and doubly constrained accessibility measures. The distribution principles and characteristics of transport justice are based on contractarianism, sufficientarianism, the capability approach, and prioritarianism (Table 2-2).

2.3 Theoretical implication of the justice for area-based approaches

2.3.1 Discussing transport goals: Combining area-based approaches and justice in multi-dimensional transport planning

Next, the final sub question of how justice can be connected to area-based approaches rises. Figure 2.7 positions the section of Figure 1.1 that this chapter therefore expands upon. First, it may be argued that ABA and justice pursue a different transport goal set, although "transport policies generally aim to improve accessibility and reduce the negative impacts of motorised transport" (Lucas et al., 2016, p.474). Therefore, a collective framework for understanding transport policy goals is sought. The main criteria to assess transport policies comprise (the trade-off between) efficiency, equity, and environment (Rietveld, 2003)(Figure 2.13). Consequently, positioning justice and ABA requires understanding their goal set.

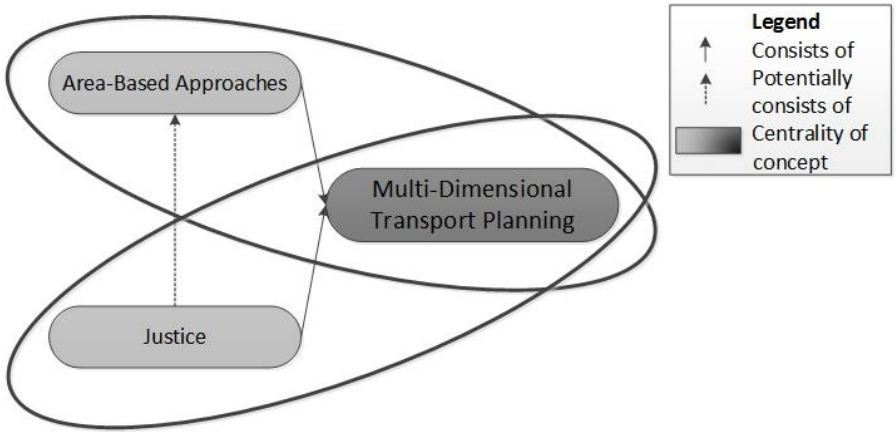

Figure 2.12: Relating Area-Based Approaches and Justice in Transport Planning – Focusing on Multi-Dimensional Transport Planning after understanding Area-Based Approaches

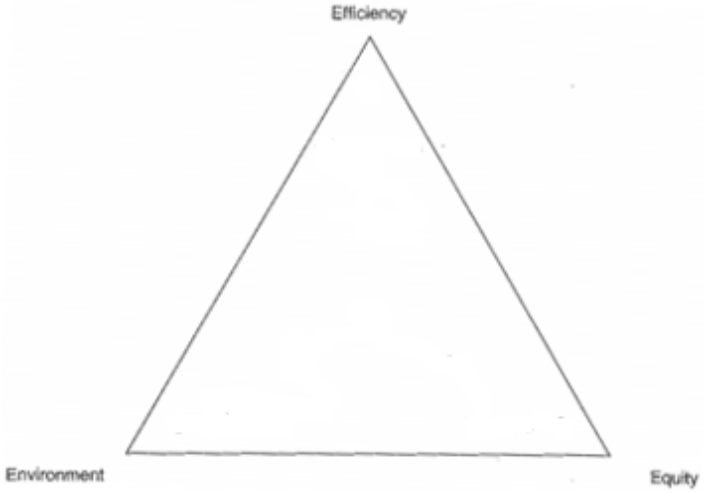

Figure 2.13: Dimensions of transport policy considerations (adapted from Rietveld, 2003)

First, ABAs argueably build on a sustainable mobility paradigm (cf. Banister, 2008) which emphasises the importance (of integration) of both the physical and social dimensions of transport[22] (Arts et al., 2016; Geerlings and Stead, 2003; Te Brömmelstroet and Bertolini, 2010).

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[22] 1) reducing the need to travel, 2) promoting liveability through reduction of levels of car use and promoting walking and cycling, 3) an explicit focus on land-use policy measures as interacting with transport and 4) explicit attention for technological innovation especially regarding environmental impacts of transport (Banister, 2008).

Central to the sustainable mobility paradigm is attractive and affordable spatial quality, broader than just a sectoral orientation and considering people central to transport policy, not traffic (Banister, 2008). Moreover, a sustainable transport system is one that focusses on the 'people, planet, profit' dimensions or the integration of social, environmental and economic values in the development of the system[23] (Hull, 2008). Arguably, the goal set is then best understood as balancing these three dimensions equally. Two objections may be made: 1) despite a shift towards a more balanced transport policy, prevailing policy and decision-making processes still favour efficient economic growth, and 2) ABAs emerged especially to respond to environmental deficiences (Lee, forthcoming; Struiksma et al., 2008).

Secondly, it may be argued that transport justice-based approaches (TJBAs) pursue a different goal set than traditional transport planning or area-based approaches. As explained, transport justice guides transport planning *towards reducing substantial inequalities* in primarily accessibility, especially sensitive for weaker social economic groups, rural areas, or towards the travel-related impaired. Consequently, TJBAs emphasise moral judgement about distributional issues and take equity rather than efficiency issues as a *start* (Appendix IV_B), and thus, potentially prioritise the equity dimensions[24]. Moreover, it may be argued that TJBAs do not emphasise the efficiency dimension, given the rejection of utilitarian distribution principles as guiding principle[25]. Furthermore, trade-offs between environmental and transport justice are not the main focus of transport justice[18]. Consequently, the environmental criterion is not valued highly.

Then, based on the previous argumentation, Figure 2.14 (next page) contrasts traditional transport planning (2.14.1) with ABAs (varying from 2.14.2, 2.14.3, and 2.14.4) and TJBAs (2.14.5) in a Rietveldian valuation. From this it may be derived that the implication of the justice conception on area-based approaches generally would be that *transport justice requires putting a (much) larger emphasis on the equity dimension, a much lower emphasis on the efficiency dimension, and a little less emphasis on the environment dimension.* Therefore, the question rises what the consequences are of this different trade-off between respectively equity and efficiency, and equity and environment, regarding transport decisions.

Although implicitly, Martens (2017a) does elucidate the implications of these tensions. First, on the relation efficiency-equity, he argues that any intervention that falls into the domain of insufficiency is to be prioritized in transport planning. For example, in a hypothetical road infrastructure project, alternatives must be chosen under limited resources. Alternative A increases overall accessibility by a higher relative or absolute degree than Alternative B. However, Alternative

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[23] More specifically, when 1) allows the basic access needs and development of individuals, companies and societies to be met safely and in a manner consistent with human and ecosystem health, and promotes equity within and between generations, 2) is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy, and regional development, and 3) limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and, uses non-renewable resources at or below the rates of development of renewable substitutes and minimizes the use of land and the generation of noise (Hull, 2008)(p.95).

[24] Given the emphasis on TRSE, TJBAs appear to be in line with a general move away from traditional systems-based approach to emphasise a subject-oriented or people focus rather than outputs measured in wealth (Lucas, 2012).

[25] Indeed, in transport justice "congestion is only a problem if it leads to an insufficient level of accessibility" (Martens 2017a, p.224).

A does exacerbate existing accessibility disparities, whereas Alternative B especially increases the accessibility of those under a sufficiency threshold. The TJBA would argue for Alternative B, whereas an approach that values efficiency higher in a Rietveldian sense would argue for Alternative A.

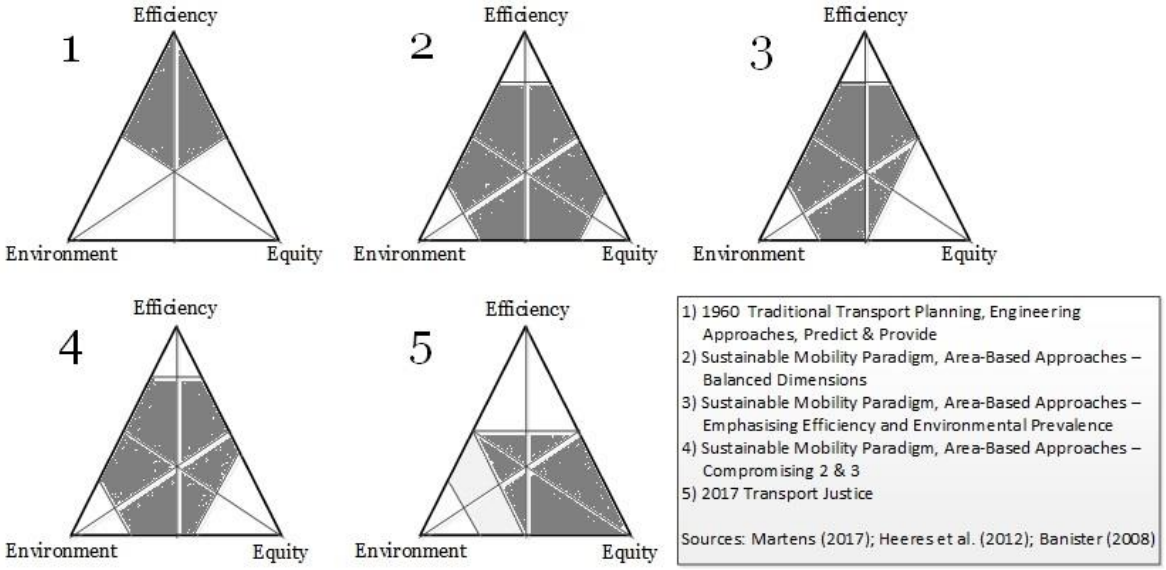


Figure 2.14: Schematizing transport planning approaches along the dimensions of the trade-off approach and the relative weights attached to those dimensions (own production)

Secondly, on the relation environment-equity, "if interventions only improve the accessibility provided to persons who already have sufficient accessibility (and do not generate other benefits, notably in terms of economic growth, health or road safety), then strong reasons for such interventions are lacking" (Martens 2017a, p.226). For example, in a hypothetical road infrastructure project, alternatives must be chosen under limited resources. Alternative A decreases accessibility insufficiencies but causes more environmental pollution than an Alternative B, which does not decrease accessibility insufficiencies. The TJBA would argue for Alternative A, whereas an approach that values environment higher in a Rietveldian sense would argue for Alternative B. These examples stress that justice in transport does affect transport policies.

2.3.2 Establishing the analytical framework

What remains to be answered is how area-based approaches can take these notions of justice into account in Dutch transport planning *practice*. This chapter builds the analytical framework to do so (Figure 2.15) This requires an understanding of how the equalizanda and distribution principles of justice (Figure 2.7) influence the various types of integration (Figure 2.1) as conditioned by their respective Rietveldian goal sets (Figure 2.14). The interaction model is visualized in Figure 2.16. Table 2-3 summarises this simple analytical framework.

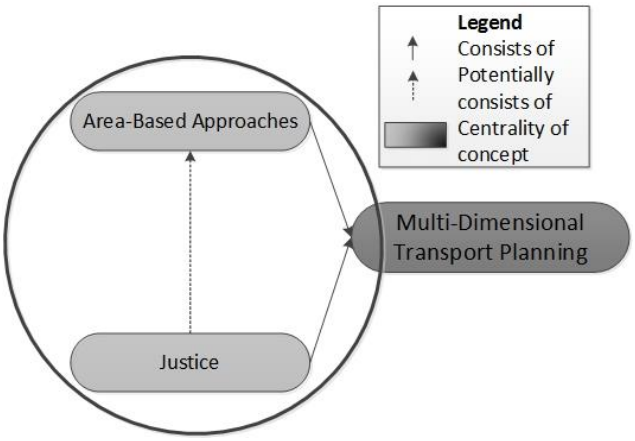


Figure 2.15: Relating Area-Based Approaches and Justice in Transport Planning

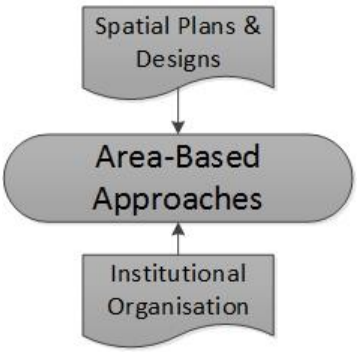
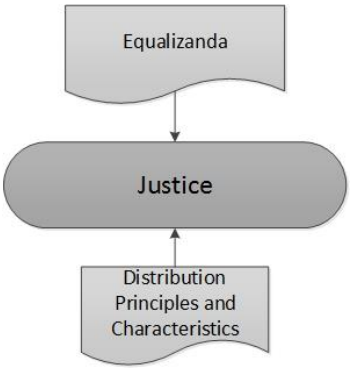


Figure 2.1 (repeated): The dimensions and characteristics of integration



(repeated): The dimensions and characteristics of justice

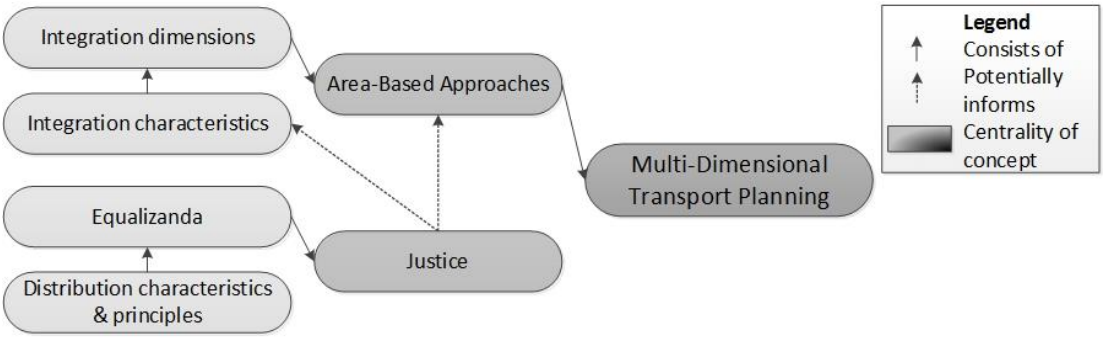


Figure 2.16: Interaction model of area-based approaches and justice based on Figure 2.17, Figure 2.1, Figure 2.7

Table 2-3: Analytical framework of influences of justice on area-based approaches, simple

Simplified comparison	**Integration Types**	
Justice Principles	**Spatial-Functional**	**Institutional-Organisational**
Equalizandum		
Distribution principle		

Whereas the analytical framework of Table 2-3 is too narrow to account for the full dynamics of justice and area-based approaches, a complete interaction of all the concepts on the left-hand side of Figure 2.16 (cf. Appendix V) would extend beyond the feasibility of this study. Then, by eliminating equalizanda other than transport justice, and by removing comparisons that would be illogical, Table 2-4 is the analytical framework that is employed to answer the final sub question of how justice can be related to area-based approaches (Appendix V contains the

argumentation for the elimination of specific comparisons). This final conceptual model is visualized in Figure 2.17.

Table 2-4: Analytical framework of influences of justice on area-based approaches, final

Final comparison		**Integration Types**		
		Spatial-Functional		**Institutional-Organisational**
Justice Principles		Spatial	Functional	Organisational
Distribution principle	Contractarianism			
	Sufficientarianism			
	Capability Approach			
	Prioritarianism			
Net influence	Transport Justice			

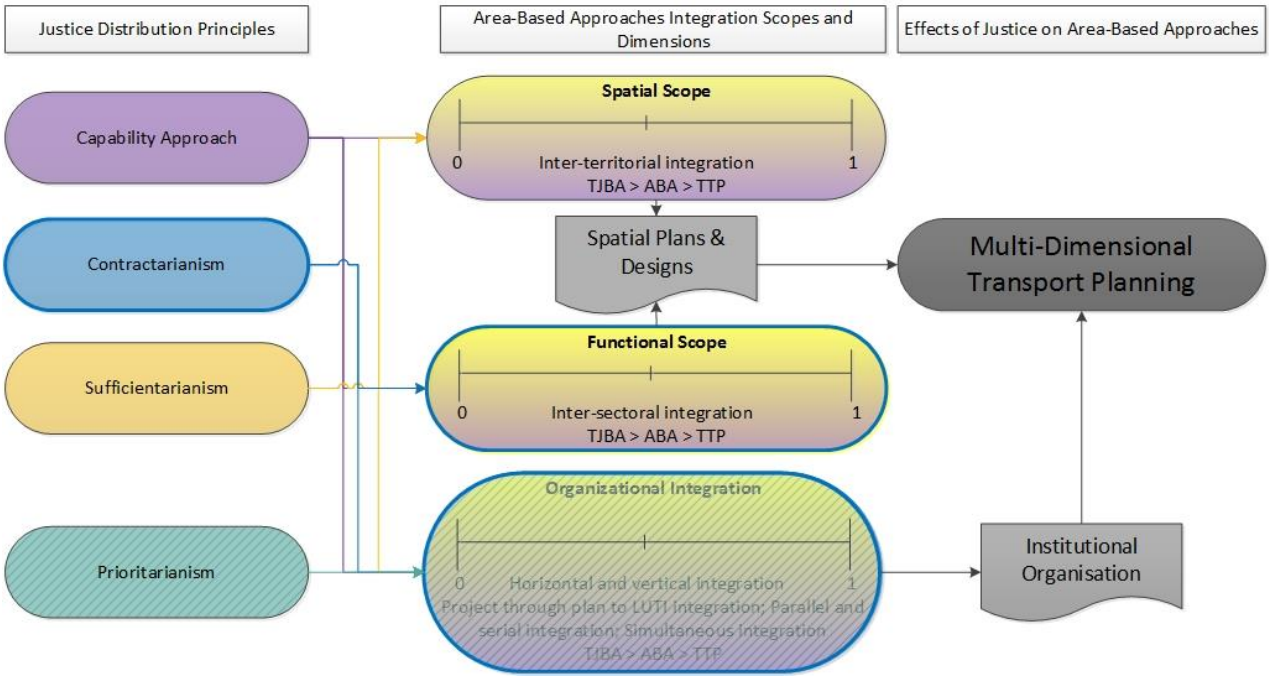


Figure 2.17: Conceptual model of justice on area-based approaches

3 Methods

3.1 Research setting – choosing methods

The nature of this study is *explorative* since it seeks to acquire an understanding of a rather new phenomenon that has rarely been studied (Babbie, 2013). Indeed, justice in road infrastructure planning practice has been so far rarely been studied (Martens, 2017a). Consequently, this study employs a *qualitative* research approach, because 1) it seeks an in-depth, comprehensive understanding of a phenomenon, 2) requires high validity[26] since general operational variables are unavailable, and 3) seeks quality of reasoning rather than representativeness (Hennink et al., 2011). Disadvantages to this approach are that generalizability and explanatory power of the conclusions will be limited (Longhurst, 2012). A quantative approach that would ensure these qualities would however be impossible given the lack of variables of justice in area-based approaches with proper *accuracy*[27] and related data availability. The results of this study may contribute to closing that gap and may thereby be a starting point for a representative and generelizable understanding of transport justice in area-based approaches.

Next, an explorative, qualitative research structure allows for both *deductive and inductive* research strategy (Saunders et al., 2009), where both previously established theories provide starting points for in this case various distribution principles of justice and their influences on various types of integration. Both types of reasoning are desirable since this study seeks *verstehen* i.e. not merely understanding perceptions from an own frame of reference (Hennink et al., 2011). Then, an *idiographic* description of a particular instance is arguably most appropriate (Babbie, 2013). Therefore, an *extended case study* is employed.

In general, case study research is "an empirical that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (Yin, 1984)(p.23). Indeed, the iterative and mutually reinforcing *reflexive* nature of this study, i.e. is planning practice and integration choices based on *tacit* conceptions of justice, or is justice based on these practices, especially allows for a case study research strategy. More specifically, extended case study builds on four extensions (Burawoy, 2009): 1) of observer and participants, 2) of observations over time and space, 3) from microprocesses to macroforces[28], and 4) of theory. Moreover, an extended case study seeks outlier, extreme or negative cases which potentially reveal in-depth insights as opposed to representative cases (Babbie, 2013; Patton, 1999), as it is more likely the results will be 'significant' the more 'special' the case is (Yin, 2014). Within this case, *triangulation* is employed to increase

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[26] Validity concerns that measurements actually measure what they are supposed to measure rather than something else (Babbie, 2013).

[27] More precisely, it is argued below that an extended case study explictely seeks that an inaccurate, i.e. inprecise and biased, case is sought to reveal its dynamics, cf. (Rice, 2012)

[28] Rather than seeking to repress a bias because of the relation macroforces and microprocesses, extended case study seeks to understand their mutually inforcing relation over time. Indeed, extended case study seeks to explore rather than to predict.

validity and to limit the possibility that rival explanations can co-exist. Four types of triangulation exist (Yin, 2013): 1) data source[29], 2) analyst, 3) theory, and 4) method.

Therefore, this study employs three types of triangulation. First, data source triangulation, namely documents, in-depth interviews, and newspaper articles. Documents that are important to gather are (O'Leary, 2004): are published policy documents, multimedia that reflect the then state of affairs of in this case integration and/or justice, and authoratiative sources that attempt to be unbiased. In-depth interviews identify individual perceptions and experiences on this matter (Hennink et al., 2011) and will help to elicit information regarding the interrelation of the research topic (Longhurst, 2012), in this case justice and integration. Next, analyst triangulation is impossible given the individuality of a master thesis. Third, theoretical triangulation increases the validity of the study given the many perspectives of justice and integration as summarised in Figure 3.1. Finally, methodological triangulation is applied by gathering and analysing text and visual components. The text originates from the data source triangulation. The visual component concerns entry of interviewees their Rietveldian position (Figure 3.2) and their perspective of integration (Figure 3.3).

Through this research setting, the objective of this exploratory research and the research questions connected through the methodology and thereafter the results. The next section elaborates on the specific research design, i.e. case selection and data operationalization.

3.2 Research design

3.2.1 Case selection

A case that meets the above outlined methodological criteria is the development of the Dutch motorway A2 Maastricht. First, it is an extreme case as it is often considered as a best-practice area-based approach based on its 1) elaborate land-use and transport integration or area development, and 2) organizational integration often specified to its early contractor involvement (Heeres et al., 2016; Lenferink, 2013; Van Valkenburg et al., 2008; Verhees, 2013). Second, triangulation is possible due to the vast availability of documents and the possibility to conduct in-depth interviews. Moreover, the case meets the area-based theoretical criteria[30] as it 1) pursues a broader goal set than mere transport-oriented goals, and 2) is a Dutch case in which possibly integrated planning characteristics manifests itself most explicitely (cf. section 1.1.3).

3.2.2 Data operationalization

Table 3-1 shows the operationalization of the conceptualization (cf. Babbie, 2013) of chapter 2, and will be the basis for the code book as argued for in chapter 3.4. Four elements require further elaboration because of their *visual* components before fully operationalized.

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[29] "When data from different sources are compared and cross-checked to see if individuals express the same views" (Westerlund et al., 2002)(p.68).

[30] Case selection cannot take place based on justice theoretical criteria because it is not an explicit issue in (documentation of) contemporary road infrastructure planning projects. Indeed, this research intends to reveal the manifestation and influence of justice on contemporary road infrastructure planning.

Table 3-1: Operationalization of conceptualization

Reality: Road Infrastructure Planning			
Concept	**Subcomponents**	**Variable**	**Attribute**
Area-Based Approaches	Spatial Scope	Inter-Territorial Integration	0 = A spatial demarcation as small as concerning only the road infrastructure itself 1 = A spatial demarcation as large as concerning all issues of an area
		Inside-Out, Outside-In Thinking	Respectively thinking from elements of infrastructure to the area, and from the area twoards infrastructure elements
	Functional Scope	Inter-Sectoral Integration	0 = A functional demarcation as small as con-cerning only transport issues 1 = A functional demarcation as large as concerning all issues in an area
		Internal Integration	A road is understood as part of a wider transportation network, including other roads and transport modes
		Land-Use and Transport Interactions	Lines of reasoning that emphasise effects of the land-use system on the transport system and vice versa that occur over time
		Targeted Audience	Specific groups of society, e.g. social-economic groups, travel-related impaired, regular user, or any other as defined by the interviewee
	Organizational Scope	Horizontal & vertical integration	0 = An organizational demarcation con-cerning the single actor responsible for that road-infrastructure's development, i.e. central guidance and no cooperation 1 = An organizatonal demarcation con-cerning all actors that are responsible for all functions in a demarcated area, with equal right of consent, i.e. actual co-production
		Participation	Involvement of other parties who voluntary contribute to the planning process
Transport Justice	Capability Approach	External Environment	An understanding of justice that assessing how the external environment enables or constrains capabilities, i.e. what people end up doing, is required
		Travel-Related Impaired	Considers whether consideration of travel-related impairments were taken into account and whether consequent transport-related decisions were made
	Contractarianism	Contract	Whether justice is met when actions adhere to principles of an agreement
	Sufficientarianism	Sufficiency Threshold	Whether the consideration of a minimum level of accessibility for those in the plan area has taken place
		Voluntary Exclusion / Inequality	The consideration whether inequality and insufficiency is acceptable when chosen voluntarily
	Prioritarianism	Difference Principle, Maxmin Criterion	Concerns whether those who are considered 'worst-off' from either a mobility perspective or general social economic perspective are benefitted most
	Rejection of Utilitarianism	Rejection of Utility	Rejection of (aggregated) utility as guiding principle
Multi-Dimensional Transport Planning	Transport Goals	Efficiency	Issues of resource allocation per increase in the object of transport, e.g. infrastructure-based measures (travel speed), distance measures, and welfare levels derived from travel or combined travel and activity participation
		Environment	Issues of a(n) (intrinsic) value of nature regarding both benefits and burdens of environmental issues of flora and fauna (e.g. water and air polution or added nature quality of a plan)
		Equity	Issues of liberties, opportunities, and capabilities stressing inequalities between groups or individuals, in transport translated to space-time measures *not* based on actual behaviour, cumulative opportunities measures, gravity-based measures, and doubly constrained accessibility measures

The first three elements are the variables inter-territorial integration, inter-sectoral integration, and horizontal and vertical integration (of the concept area-based approaches). As based on the conceptual models Figure 2.6 and Figure 2.17, these types of integration are visualised through literally being put on a spectrum varying from 0 to 1, i.e. entirely segregated toward

entirely integrated. This serves not as a final assessment of integration, rather it is an additional stimulus to be applied in the in-depth interviews to gain insight in the extent to which the interviewees consider the project as integrated, and what less or more integration would mean. This helps to assess what it means when justice-based approaches require less or more integration, and whether the interviewees consider it possible at all to, if applicable, further integrate the project.

The fourth element concerns all the variables of the transport goal subcomponent of multi-dimensional transport planning. As based on the conceptual models Figure 2.13 and Figure 2.14, these transport goals are visualised as blanc triangles and presented to the interviewees to fill them in according to their perception of the goal set of the project as a whole, and for the goal set of their own organization. This serves not as a final assessment of multi-dimensional transport planning, rather it is an additional stimulus to be applied in the in-depth interviews to gain insight in the extent to which the interviewees consider the overall project as largely adhering an area-based or transport justice-based approach, and what their own goal or influence was in moving the aggregated goal set towards that goal set.

Next, Appendix VI contains the exact semi-structured interviewguide erected as based on Table 3-1. The question list first treats the transport goals, then the area-based approach characteristics and finally justice. The reason is that the transport goals will probably be known to all interviewees, as are the area-based characteristics, but the concepts of justice might be a bit abstract. Therefore, treating justice last helps the interviewees to relate their answers to things stated earlier in the interview. Since two different interviewee categories were consulted, two different interviewlists are erected (argumentation in the data collection chapter). These differences are first, that the justice section is only asked exploratory to the area-based experts, because they did not get their PhD on justice in transport. Moreover, the consulted experts helped me to translate the conceptualization towards operationalization. Secondly, the interviewlist for practitioners also contains 'snowballing' questions.

Finally, the interviewguide is erected according to the demands of a proper interviewguide (Babbie, 2013; Hennink et al., 2011), which briefly are 1) items are clear and unambiguous, 2) no double-barreled questions, 3) respondents are competent to answer, 4) respondents are willing to answer, 5) questions are relevant, 6) short items are best, 7) avoid negative items, 8) avoid biased items and terms, 9) has all bizarre specifications accounted for, 10) has a general introduction, 11) has opening questions, 12) has key questions, and 13) has closing questions. Additionally, *verstehen* is especially sought in the visual dimensions of the area-based scopes and multi-dimensional transport planning. This is done by asking the interviewees what they consider as the ends of the spectra and triangle. For reasons of *internal consistency*, the attribute values as operationalized in Table 3-2 are thereafter presented to the interviewees.

3.3 Data collection

3.3.1 Theory selection[31]

The literature review was structured by first determining the topic and the key terms, searching key references, determining sub topics, and thereby including literature that kept appearing increasingly often (Babbie, 2013; Healey and Healey, 2012). First the concepts and

[31] The below listed amount of citations was last checked on 6th of February 2018.

subcomponents, of Table 3-1 were determined, thereafter literature was sought for the variables and attributes. First, for area-based approaches key authors are especially Heeres et al. (2012a; 2012b; 2016), Arts et al. (2016), Lenferink (2013), and Verhees (2013) since these authors have conducted extensive research on Dutch Land-Use and Transport Integration, including the A2 Maastricht case. Often cited research on interation (e.g. Hull, 2008 c = 199) helped to further explore the integration scopes.

Second, for justice this meant inclusion of especially often cited research (e.g. Lucas, 2012 on Transport-Related Social Exclusion, c = 415) in the earlier stages of the literature review. Moreover, as the issue of justice in transport is understudied, two research monographs were studied completely (Martens, 2017a; Van Wee, 2011)[32]. In later stages, also research that belonged to sub topics was included that was therefore was less cited, as it covered precisely the sought information and appeared frequently (e.g. Nielsen and Axelsen on Capabilitarian Sufficiency, c = 10). Finally, the Stanford Encyclopedia of Philosophy was extensively consulted to build an understanding of the equalizanda and distribution principles of justice.

Finally, for multi-dimensional transport planning the Handbook of Transport and the Environment (Hensher and Button, 2003), especially Rietveld (2003) was consulted, based on these authors their overall expertise in the field of transport planning and the amount of citations. Banister (2008) is added as a key reference for understanding the goals of area-based approaches next to the already identified key sources Heeres et al. (2012a), and Martens (2017a), given the amount of citations of this article (c = 1237).

3.3.2 Interviewees

Issues of Data Collection Prior to the Interview - Interviewee Selection

Two types of interviews are employed: *explorative pilot testing*, and actual in-depth interviews (Babbie, 2013; Hennink et al., 2011). First, the explorative pilot testing ensures quality of the actual in-depth interviews and adds to the study's results by interviewing experts, i.e. persons who got their PhD on area-based approaches in road infrastructure planning who also researched the A2 Maastricht. The goals of these interviews are 1) to reflect on theoretical understanding of multi-dimensional transport planning and area-based approaches, 2) to gather their experiences in researching the A2 Maastricht, and 3) to ensure applicability and connection to the experiences of the practitioners of the semi-structured interview guide's questions. Secondly, relevant practioners are those who 1) had influence on establishing the spatial, functional, and organizational scopes of A2 Maastricht, 2) can judge the underlying justice perceptions, and 3) were involved in the A2 Maastricht from varying organizations and especially those represented in steering committee (Dutch: stuurgroep). Additionally, the central agency who executes the EIA, Rijkswaterstaat, also played an influential role in establishing the project's goals. This led to the interviewee selection as visualised in Table 3-2. A strength of this selection is that the chosen practitioners were involved in the A2 Maastricht since at least 2004, and therefore can be considered as very knowledgeable.

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[32] Van Wee (2011) was read first, which lead to the focus of the research on transport justice instead of ethics in transport.

Table 3-2: Overview of interviewees (anonimised)

Nr.	Function	Organisation	Relevance	Date	Duration Interview
			Experts		
I-1	Obtained PhD on area-based approaches	University of Groningen; Sweco	Expert area-based approaches; Researcher on A2 Maastricht	December 2017	1h41m
I-2	Obtained PhD on area-based approaches	University of Groningen; Radbout University	Expert area-based approaches; Researcher on A2 Maastricht	December 2017	1h24m
			Practioners - Public Parties		
I-3	Liason officer	Rijkswaterstaat Southern Netherlands	Responsible for contact with environment. Involved in A2 Maastricht since 2004	December 2017	2h13m
I-4	Liason officer	Province of Limburg	Responsible for contact with environment. Involved in A2 Maastricht since 2004	January 2018	1h24m
I-5	Road infrastructure act / m.e.r. centre employee	Rijkswaterstaat directors staff	Involved in m.e.r. A2 Maastricht	January 2018	1h12m
I-6	Area-developer	Municipality of Maastricht	Responsible for area-development of A2 Maastricht. Involved in A2 Maastricht since 2004	January 2018	1h27m

Relevant actors that were not consulted include the director of the projectbureau A2-Maastricht, the contractor, and the chairmen of the interest groups that represent local neighbourhouds, and local businesses. The director indicated that he was too busy, and that the area-developer of the municipality of Maastricht would be as able as him to answer my questions. The latter three persons took too long to identify, and due to a time constraint for this thesis were unable to be consulted. Although the number of interviewees is limited, the in-depth nature of qualitative research requires few study participants, given its purpose of depth of information rather than breadth (Hennink et al., 2011). The long interviewee duration enabled this depth.

Finally, to refer to interview data in the results, discussion, and conclusion chapters, it will be indicated by an I and the interview number. E.g., the 'liason officer' (Dutch: omgevingsmanager) from Rijkswaterstaat Southern Netherlands will be referred to as I-3.

Issues of Data Collection During the Interview – Building Rapport

Rapport[33] with the interviewees is built through 1) dressing in a fashion similar to the people who are interviewd (Babbie, 2013), 2) being an attentive listener rather than a talker (Babbie, 2013), 3) conducting the interviews at places where the interviewees feel comfortable, i.e. their workplaces[34] (Madge, 2012), and 4) being introduced to the interviewees through a "gatekeeper", someone with a prominent and recognized role in the respective community (Hennink et al., 2011). The latter is ensured thanks to being introduced to interviewees through the thesis supervisor prof.dr. Jos Arts, and by snowballing. Moreover, through *probing* and by summarising and checking the interviewees statements regarding the subcomponents, incomplete answers are avoided as much as possible. Furthermore, the interviews were recorded with permission of the interviewees, and consequently transcribed to verbatims. Not all interviewees are

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[33] An open and mutually trusting relationship, essential for good contact with interviewees (Babbie, 2013; Hennink et al., 2011).

[34] This was not feasible in the case of I-2. Since we were already familiar, it is expected that rapport did not suffer consequently.

literally cited, as some explictely requested not to do so. The interview parts that were used in the thesis were send to the interviewee to check for redirection. The verbatims are not included in the Appendix due to possible sensitive information but are available through requesting the author when the interviewee agrees to sharing the verbatim.

3.3.3 Documents

Appendix VII shows an overview of the included documents in this study[35]. Documents are relevant when they provide insight into the elements of the operationalization table. The data sources contain the perspectives of multiple actors, namely 1) public parties responsible for the area-development primarily Projectbureau A2 Maastricht and the municipality of Maastricht, 2) private parties primarily of the designer and contractor of the A2, 3) local civil parties through official public participation procedure documents, 4) general public perception through newspaper articles, and 5) legal parties perspectives as incorporated in EIA, the road infrastructure act, the spatial planning act, and collaboration agreement of the A2 Maastricht. The documents were published varying from 2002 to 2017, and thereby account for potential changes during the process regarding justice, area-based approaches and multi-dimensional transport planning. The documents aid in triangulating information gathered through the in-depth interviews.

Finally, to refer to document data in the results, discussion, and conclusion chapters, it will be indicated by a D and the document number. E.g., the document 'een plan voor stad en snelweg' from Projectbureau A2 Maastricht will be referred to as D-4.

3.4 Data analysis

The unit of analysis are the selected interview verbatims and documents to assess the total case of Maastricht and consequently involves *case-oriented analysis* (Babbie, 2013). Table 3-1 is used as code book, where the description of the code is the attribute, and the variable is the code, and the subcomponents are the code families, and therefore employs *open coding*[36]. When issues emerge especially out of the questions informed by *verstehen* and do not yet have an applicable code, that element will be explictely mentioned in the results section as a pre-established code could not have been erected[37]. Whereas the interviews are coded completely given the complete relevance of the covered issues, the documents are not coded entirely as it is both unnecessary and inefficient to do so. The interpretation of the data is done through connecting categories and trying to search for reoccurring patterns. The use of qualitative data analysis software assists in doing so to attach codes to the verbatim, and to interlink the codes in families and groups. However, as the interlinking did not reveal patterns other than those suggested by the interviewguide's structure, the main advantage of computer software is attaching codes to the verbatim and employing descriptives that follow. An example of this is the frequent occurance of codes pointing towards contractarianism in the case of I-5.

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[35] Document names are in Dutch to prevent confusion about the source of the document.

[36] "These codes are suggested by the researchers' examination and questioning of the data" as based on theory (Babbie 2013 p.397).

[37] Further axial and selective coding based on grounded theory does not occur due to a time constraint (cf. Babbie 2013 p.398)

3.5 Ethics

3.5.1 Positionality[38]

Effects of positionality[39] on building rapport are not expected, because my race, nationality, gender and general social-economic status largely overlaps with the interviewees. Moreover, when it does differ (e.g. age) other issues of building rapport are expected to prevent research related problems. Second, philosophical positioning and paradigms[40] also affect colouring of research. Since I mainly reason from a realist ontology, a relativist epistemology, mainly through a structural functionalist's and symbolic interactionist's perspective[41], reasoning other than these perspectives might lead to different framing of the problem, selection of theory, methods, of interpretation of results. For example, a more dominant relativist ontology and symbolic interactionist's perspective potentially would have directed the focus of the research towards issues of identity and participation. However, I argue that the thesis as it is now, is scientifically, thereby not excluding that another approach can also add a broader or deeper understanding of the research topic.

3.5.2 Remaining ethical issues

An ethical inspired concern is that of *reactivity*, which potentially leads interviewees to 1) expel the researcher, 2) adapt speech and behavior to come across more socially desireable, 3) change the social process under study (Babbie, 2013). However, "it's simply inevitable" (Ibid., p.328) that some effects will occur. Then, a critical reflection will have to take place 1) if I am expelled, 2) whether speech and behaviour might have been adapted when data triangulation suggest so (cf. footnote 53), and 3) if my research might affect social processes. Since I did not interview civil parties who might have a direct interest in concluding that an injustice is done, and given that the dissemination of a master thesis is limited, I suspect the latter will not be a problem. Moreover chapter 3.2.2. described how research questions were adapted to issues of reactivity.

A second ethical concern is that of personal bias regarding justice, area-based approaches, and multi-dimensional transport planning. Given extensive theoretical triangulation, especially through positioning transport goals as an issue of *choice* based on various conceptions of justice, rather than as either being justified or not, I think I have prevented any potential bias to affecting results unscientifically

Third, as multiple interviewees requested to not be quoted in the report of the study, no citations of any interview are incorporated.

Finally, the principles of good scientific research as the association of universities in the Netherlands regarding carefulness, reliable, verifiable, independent and unbiased research practices are upheld throughout the entire research process (VSNU, 2012).

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[38] 'The recognition and declaration of one's own position in a piece of academic work' (Castree et al., 2013).

[39] 'It is crucial to consider how a researcher's positionality (in terms of race, nationality, age, gender, social and economic status, sexuality) may influence the data collected and thus the information that becomes coded as knowledge' (Rose, 1997)(p.308).

[40] In a non-Kuhnian sense (cf. (Kuhn, 1962), i.e. 'fundamental models or frames of reference we use to organize our observations' that underlie social theory and inquiry (Babbie, 2013, p.57 & p.58).

[41] Structural functionalism or social systems theory views human behaviour as fulfilling functions, moderated through societal structures, in which structures can perform multiple functions and the sum of all parts of society functional system parts is greater than the whole. Also, everyone and everything in society serves a function, regardless of the moral assessment of that function (Babbie, 2013).

4 Results & Discussion

4.1 Introduction

The results section is structured in five parts. In all sections, references to the interview and document sources are indicated respectively by an I-number (cf. Table 3-2) and D-number (cf. Appendix VII). The sub chapter 4.2 describes the case along time periods that illustrate decisions regarding area-based approaches, justice, and multi-dimensional transport planning regarding the elements indicated in Table 3-1. Consequently, these periods are:

1) 1960 – 1980: finished original construction and use A2;

2) 1990s: attempts to prioritise A2 redevelopment on the national transport agenda fail;

3) 2000 – 2002: report "Maastricht raakt de weg kwijt" broadens the A2 redevelopment goals to other than road infrastructure matters, and argues that realisation is feasible through a public-private partnership;

4) 2003 & 2004: Official notification of intent of Rijkswaterstaat Southern Netherlands for redevelopment of A2 is established, and early participation process of municipality of Maastricht to determine additional ambitions and desires is started;

5) 2005 & 2006: report "één plan voor stad & snelweg" establishes 1) the official collaboration between the four parties of Rijkswaterstaat, the Province of Limburg, and the municipalities Maastricht and Meerssen, and 2) the final goals of the redevelopment of A2 Maastricht. Moreover, the tunnel alternative is chosen as the to-be realised road infrastructure alternative. Finally, the tender process is started, the basis provided by the EIA demands and additionally established local area-development ambitions.

6) 2007 – 2009: In this tender period potential contractors themselves explore local ambitions and feasibility of the provided ambition document. Consortium Avenue2's 'De Groene Loper' wins the tender. Then end of this period initiates the start of the switch of infrastructure-led plan development towards area-led development and construction.

7.1) 2010 – March 2013: legal procedures (design infrastructure planning act and design zoning plan) mark the end of the participation process of the road infrastructure development.

7.2) 2010 – 2017: construction work.

8) 2012 – present: Further exploration of area development opportunities, through for example "één plan voor stad & spoor" and "Mijn Gezonde Groene Loper Maastricht 2030".

Next, chapter 4.3. addresses the first sub question "What characteristics differentiate area-based approaches from traditional road infrastructure planning?" and distinguishes how the involved administrates value integration differently. Thereafter, chapter 4.4 adresses the second sub question "What are the main conceptions of justice in relation to transport?" and indicates that different administrators build on different conceptions of justice. In chapter 4.5 the final sub question is addressed by assessing the different Rietveldian transport goal valuation of the different administrators. Finally, chapter 4.6 discusses influences of justice on the area-based integration scopes and goal set.

4.2 History of the A2 Maastricht

1) 1960 – 1980s: The A2 was constructed in the 1960s as part of the 'stadsboulevard' Maastricht. Since construction on the far-east side of the city was too expensive, the A2 was situated as illustrated in Figure 4.1 at the left purple area as opposed to the right purple arrows (Verhees, 2013; maastrichta2.nl/mijlpalen)

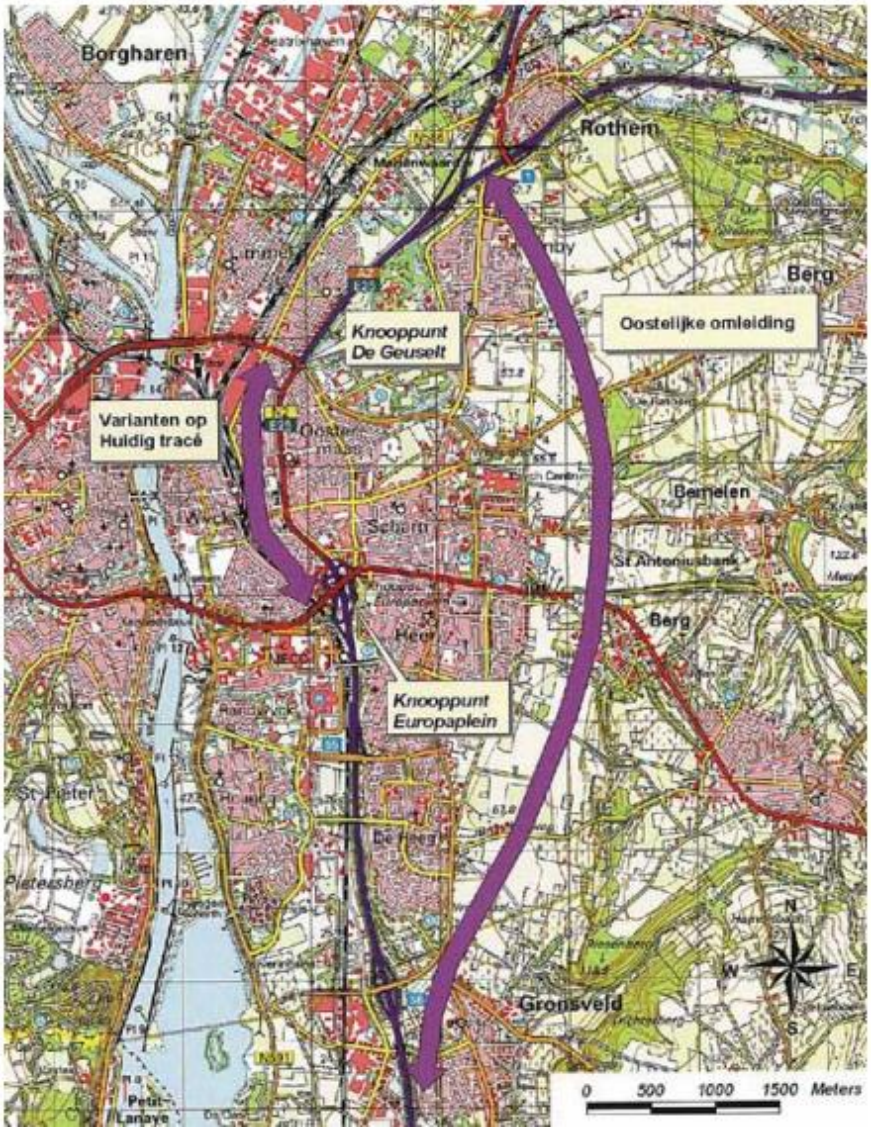

Figure 4.1: Situating the current position of the A2 Passage (left) as opposed to the intended road (right)(D-5)

2) 1990s: The Province of Limburg urges that the frequency and intensity of congestion on the A2 passage causes traffic to take detours through the neighbouring villages of Amby and Rothem in the municipality of Meerssen, but is already starting in the city of Valkensburg to the east of Maastricht (I-4). Consequently, a significant threat to the liveability in the area surrounding Maastricht is exerted. Therefore, the Province made plans for interweaving the A2 and A79 motorway. A tipping point for the project occurred in 1999. The then minister of transport (then, Verkeer & Waterstaat) Netelenbos[42] 'pulled the plug' on the project, since this specific congestion problem wasn't a transport priority in a reorganisation of transport projects in the 'Meerjaren Infrastructuur en Transportprogramma' (MIT). The interview data suggest that an additional

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[42] Although the interview source stated that it was minister Jorritsma, all other sources point towards minister Netelenbos.

important reason was that the accessibility gains weren't as efficient as in the Randstad region, and that therefore too few financial means were available for the A2 Maastricht project (I-3; I-6). If the region desired to continue the A2 project, the only condition that the national government left to do so was through a public-private partnership (PPS) construct (I-3; I-4; Verhees, 2013; maastrichta2.nl/mijlpalen).

3) 2000 - 2002: The municipality of Maastricht urged that this PPS coalition had to occur. To instigate this, the province of Limburg, the municipality of Maastricht and Meerssen, and Rijkswaterstaat directorate Limburg (now: Zuid-Nederland) collaborated to come to a PPS pilot project through the document 'Maastricht raakt de weg kwijt' or Maastricht loses its ways (D-11). The document urges that multiple infrastructural projects are to be combined to properly address issues of accessibility and traffic flow, as well as to enhance liveability, safety, and the way the A2 highway now functions as a spatial barrier. More specifically, D-11 argues that the most important locations in Maastricht are situated in the west of Maastricht, but the infrastructure is located in the east. Moreover, a mixture of local, regional and international traffic causes congestion to such a large degree, that the entire road system is congested. Given the lack of a regional road infrastructure system, the city suffers *5 key issues: 1) Traffic flow and accessibility; 2) urban development; 3) liveability; 4) economic perspectives, and 5) traffic safety.* In this document, the emphasis was more on road infrastructure than on environmental quality, and more on environmental quality than on area-development. However, area-development is mentioned as one of the four main results along with infrastructural measures, gentrification, and acquisition and demolition work. The potential for more profit that is created by this emphasis on infrastructure *and real estate* is what should attract, and indeed will attract, private parties to the A2 Maastricht project (I-3; I-4; I-5; I-6). Key here however is the conclusion of D-11 on page 28: "This regional exploration of the A-2 issues show that the A-2 project is a unique pilot in which all important policy arenas come together: traffic, safety, liveability, spatial quality, spatial concentration, spatial barrier alleviation, green corridors and environmental quality. *Naturally, the road-infrastructure aspect is dominant (…)*[43]*"*. This indicates that the area-based approach *in this phase* does compromise an integrated functional scope, but is still mainly infrastructure oriented.

4) 2003 & 2004: In 2003, the four parties Rijkswaterstaat, the province of Limburg and the municipalities of Maastricht and Meerssen agree to come to an integrated perspective on infrastructure and area-development, i.e. an area-based approach, through a PPS model (I-3). In 2004, the notification of intend (D-12) marks the official (re)start of the infrastructure planning act (Dutch: 'tracéwet'), the EIA and the participation trajectory with inhabitants, interest groups, governments and companies. This participation process is started by the municipality of Maastricht in December 2004 to help to establish the 'Programma van Eisen', and opportunities and desires for area-development[44] (D-18). The notification of intend marks the transformation of the 'Rijksweg 2' towards an A2-passage through Maastricht as highway. This plan officially marks that

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[43] Original sentence: "Deze regionale verkenning van de A2-problematiek laat zien dat het A-2 project een unieke pilot is, waarin alle belangrijke beleidsthema's samen komen: verkeer en Vervoer, veiligheid, leefbaarheid, ruimtelijke kwaliteit, intensivering ruimtegebruik, opheffen barriers, groene poorten en landschappelijke kwaliteit. Uiteraard is het wegverkeerskundige aspect dominant

[44] Called 'wensen', 'meekoppeling', or 'kansen' in the interviews I-3-I-6

the plan is to be integrated by having to increase the spatial quality of the city of Maastricht and its direct environment, next to improving traffic flow and accessibility. Figure 4.2 marks what then intuitively marks the plan area. Moreover, the plan indicates that a null-alternative and an 'environmental most friendly' alternative is to be studied. Incorporation of public transport alternatives is *explicitly excluded* from the tracéwet' and EIA, since the modal shift effect is thought to be too little. Furthermore, in this stage of the planning process, it is not yet clear what design the tunnel alternative is to be preferred (D-12; I-3; I-5). Finally, the EIA procedure is to follow a two-step approach, where first the traffic engineering alternatives effects are to be assessed, and thereafter the effects on the other key issues (infrastructure as spatial barrier, traffic safety, liveability and environmental quality, and spatial).

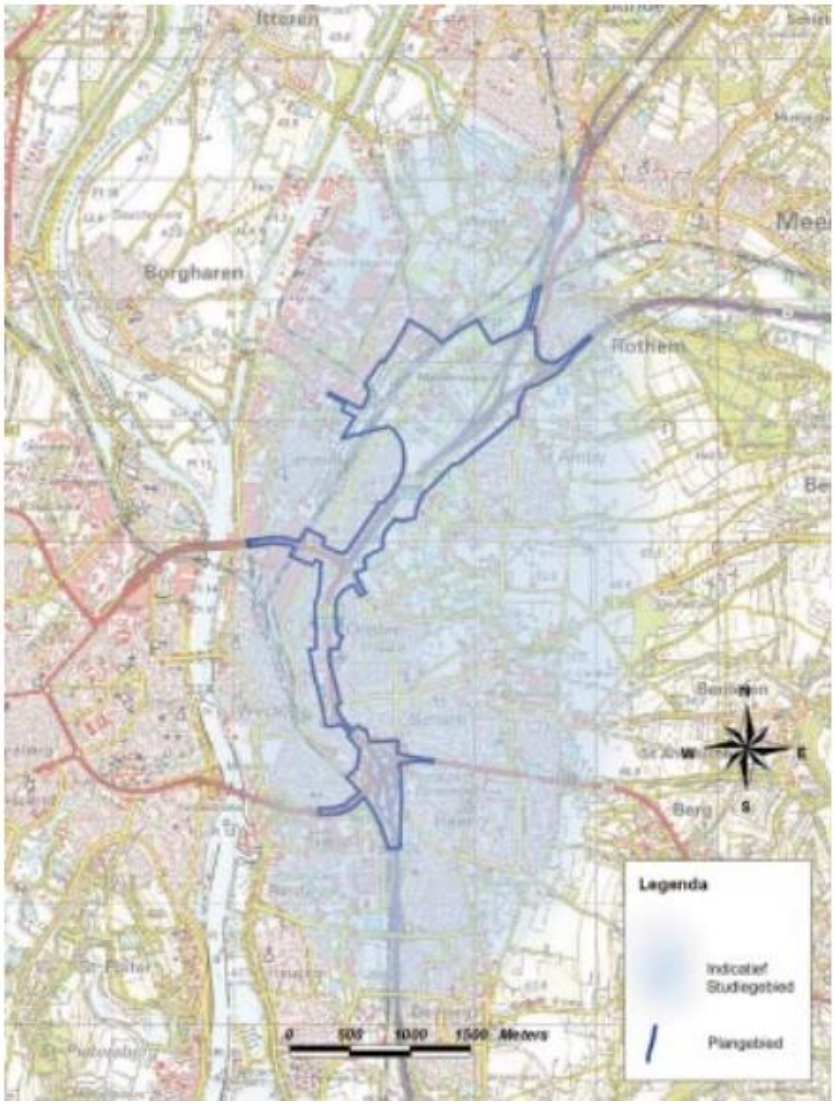

Figure 4.2: Intuitive plan area as indicated in 2004 (D-12)

5) 2005 & 2006: The research and consultation phase after the notification of intend is visualised in Appendix VIII_A. The participation process that was started with aforementioned D-18 discussion document was formalised in April 2005 (D-5). Then, the participation process was formalised through erecting the participation platforms for inhabitants and local businesses, respectively the A2-buurtenplatform (I-9)(informally since 2003, D-5) and the A2-bedrijvenplatform. These institutions are to add a list of desired developments additional to the

programme of demands before the project is procured. Consequently, in April 2006 in the report '*One plan for city and highway*' (D-19)[45] (Dutch: *Eén plan voor stad en snelweg*) assessed the various transport alternatives and project scope, indicating a combined plan for the A2 Maastricht project comprising road infrastructure primarily the responsibility of Rijkswaterstaat through the 'tracéwet' and the EIA and area-development primarily the responsibility of the Municipality of Maastricht (I-5; D-5)[46]. This results in the formal decision for the tunnel-alternative in June 2006 (D-5; D-21). Collectively, as the parties arranged themselves in the board of directors (Dutch: stuurgroep), the parties explore synergies and are to integrate all development relevant to the 5 key issues through the Collaboration agreement (D-21). The monetary commitment of €631.3 million is divided over these actors now manifested as 'projectbureau A2 Maastricht' as follows: State €499 million, Maastricht €87.7 million, Meerssen €1 million, and the Province €43.6 million (see Appendix VIII_C for actor constellation).

The resulting Amibition programme which embraces the EIA 'programme van eisen' and ambitions or desired area opportunities, (D-13; D-19; D-20, p. 61 summary) are offered in 2006 for tendering to market parties. The *final goals* indicate the area-based approach of the A2 Maastricht and are formulated as follows (D-20 p. 9):

1. Improving traffic flow of the A2-bound traffic to highway quality;
2. Improving accessibility of Maastricht and environment;
3. Improving liveability and traffic safety in the neighbourhoods surrounding the A-2 passage;
4. Alleviating the A2 as a spatial barrier;
5. Create opportunities for urban redevelopment in the neighbourhoods surrounding the A-2 passage.

A visual summary of the process here onwards is depicted in Figure 4.3:

Figure 4.3: Visual representation of timeline A2-Maastricht 2006 -2026 (D-32)

6) 2007 – 2009 : This period is marked by market involvement and procurement. Five parties are selected to develop plans for the A2-Maastricht project in 2007. They will be judged based on the degree to which they answer to the ambition document. The EIA demands are absolute necessities, although the exact spatial solution is to be decided by the market parties. The degree to which the desired area opportunities, e.g. real estate development and spatial quality, are seized is indicated by D-20, but left to the market parties. This is visualised in Figure 4.4.

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[45] Document not available online. This document is the summary of the original document

[46] The combination of the trace/MER procedure, the land-use and zoning plans, and the procurement procedure is called 'vervlechting' (D-5)

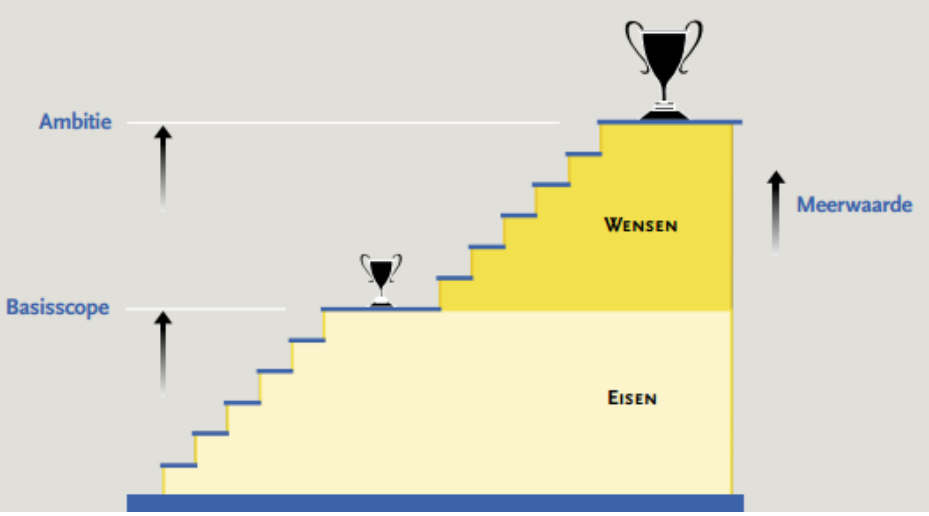

Figure 4.4: Indicating procurement selection, where the EIA demands (eisen, basisscope) are necessities and area development opportunities and spatial quality (ambitie, wensen), determine the total added value of the A-2 Maastricht project (Source: D-20).

In 2007, the tendering process started with 5 market parties through a 'competitive dialogue'[47], where the contracting authority invites candidates to develop one or more suitable alternatives, and is engaged through dialogue to find solutions for the complicatedness of technical, legal, and financial issues (Verhees, 2013). This resulted in five parties who started to develop plans in 2007, three parties who presented their plans from November 2008 to January 2009 and publicly displayed and presented their plans to stake- and shareholders (I-5), and three final plans that are submitted to the judging committee (Dutch: 'Gunningscommissie') in April 2009. This participation period had received approximately 3500 formal responses to the plan from general public and 21 interest groups. On the 25th of June 2009 the final decision is made by the minister of Transport on behalf of Projectbureau A2 that Consortium Avenue2 of Strukton and Ballast Nedam with their plan 'De Groene Loper' (D-17) is selected as the winning design. Figure 4.5 compares the Avenue2's Groene Loper tunnel and with the null-solution of Rijkswaterstaat. Further images illustrating the Groene Loper are included in Appendix VIII_D.

In the official announcement, it is emphasised that the chosen design is an integrated area-based solution for city and highway, for cyclists, pedestrians, car-users, inhabitants of Maastricht and for companies in Maastricht (D-22). Signing the final contract in October 2009 marks the end of the procurement and tender period, and starts the final period (cf. Appendix VIII_A) of the 'Ontwerp tracèbesluit' and 'Ontwerp bestemmingsplan' (D-5; D-14; D-15; D-16). This period therefore also marks the final determination of the plan area (Figure 4.5 below), and the switch from infrastructure-led development towards area-led development is starting (I-6). More specifically, this means that the exact following sequence of area-development is enacted: 1) 2009 – 2016: infrastructure development; 2) 2017 & 2018 further area-development of public area situated above the to-be developed infrastructure; 3) to-be determined area-development (D-2; I7). Figure 4.6 visualises this understanding of 'integrated area-development'.

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[47] Included in Appendix VIII_B

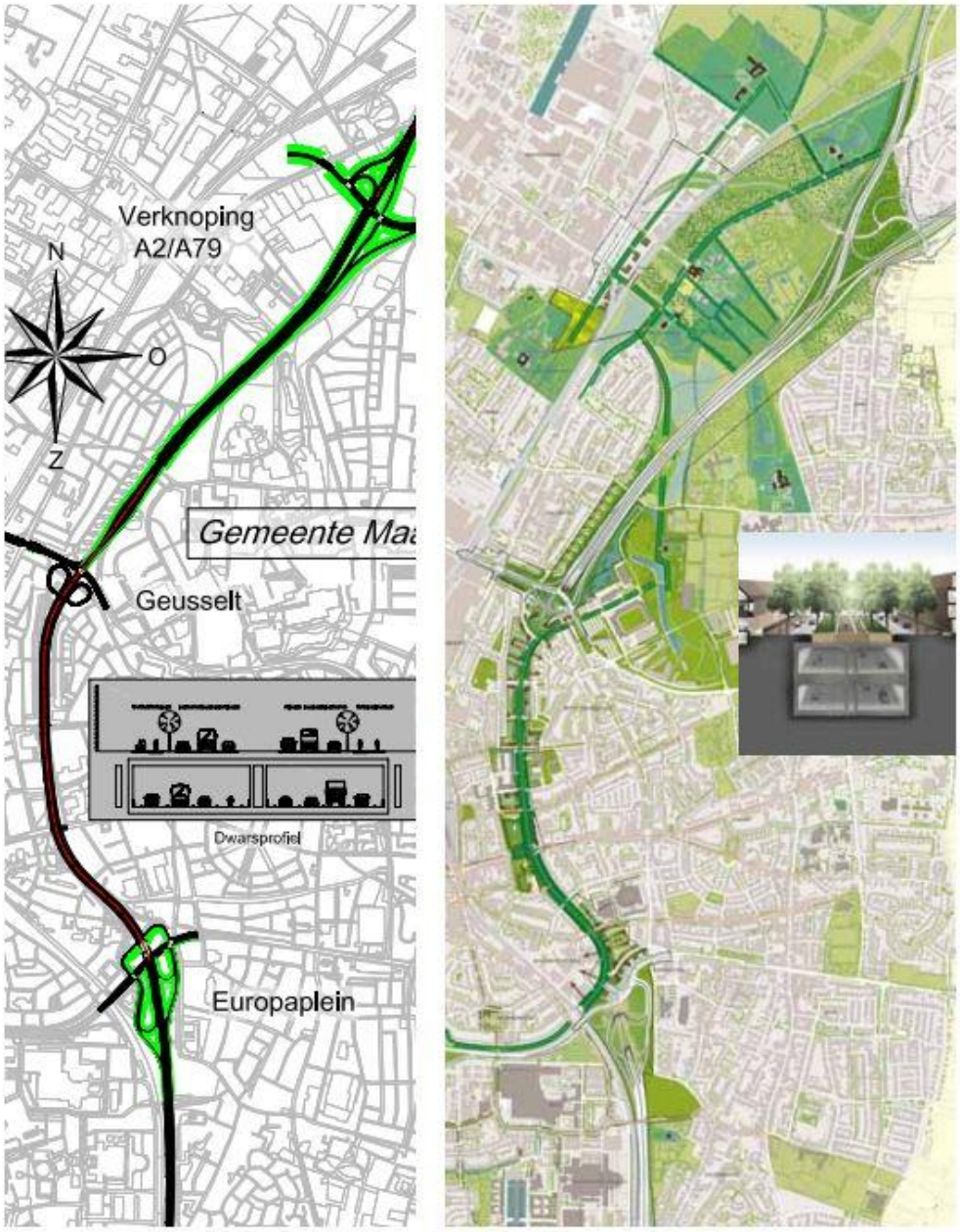

Figure 4.5: Global explorative tunnel design Rijkswaterstaat in 2006 (left) and final winning plan of market consortium Avenue 2 in 2009 (right)

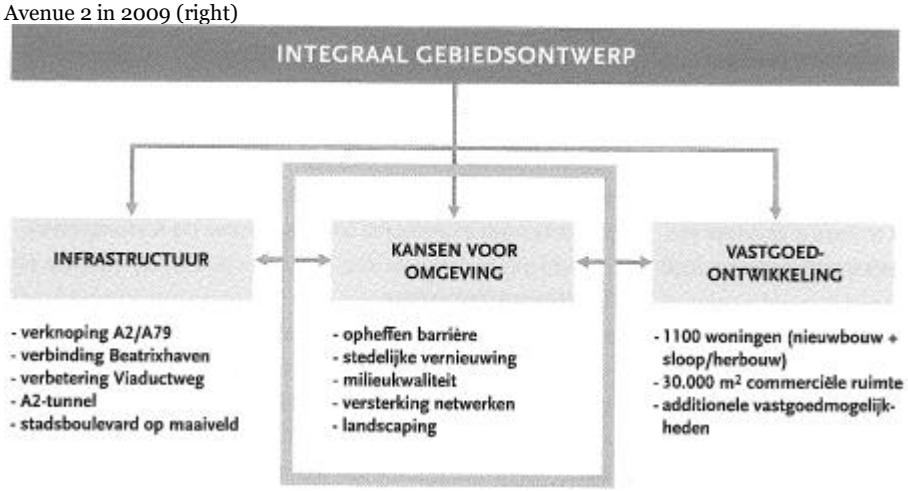

Figure 4.6: Defining integrated area-based design on infrastructure led development, area-opportunities and real estate development

7.1) 2010 & March 2013 – legal procedures: The formal public participation process for the 'ontwerp tracébesluit' (OTB) lasted from the 6th of July 2010 to the 16th of August 2010, and for the 'ontwerp bestemmingsplan' (OBP) for 'A2 Traverse' and 'A2 Mariënwaard' from the 6th of September 2010 to the 18th of October 2010 (as indicated by Appendix VIII_A). The OTB received 140 official reactions, largely comprising cases of individual concerns such as 'will my cellar not flood?' or 'how high will the noise barrier be?' (D-5; D-14; D-15). The OBP received 42 valid official reactions, comprising mainly traffic issues, accessibility and liveability during construction, and concerns regarding the precise real estate development. Most reactions came from inhabitants and organisations from Maastricht, some from Meerssen, and 2 individuals from The Hague and Amersfoort. The changes to the zoning plan were officially ratified on the 14th of December 2010 (D-23; D-24). The last opportunity to make objections to the plan were to be addressed to the Council of State (Raad van State) from the 9th of December 2010 to the 20th of January 2011 for the TB and the 27th of December 2010 to the 7th of February 2011 for the BP. This marks the end of the total participation process, where since 2004 there have been seven consultation periods. The former receives 21 notices of appeal, the latter 14. Finally, on the 30th of November 2011, the Council of State ratifies both the TB and BP rejecting all objections (D-25), thereby moving the A2 infrastructure towards construction. Consequently, the 'All-in-one Permit for Physical Aspects' (Dutch: omgevingsvergunning, OOV) was requested by Avenue2 to start building the tunnel. The design OOV was open for official reactions from 20 February to 3rd of April 2012 and after minor hassles regarding expropriation the initial permit was handed to Avenue2 on the 12th of April 2012 (D-26; D-30). The attempts for further appeal were unsuccessful and reject by the High Council on the 29th of March 2013 (D-27).

7.2) 2010 – 2017 – construction work: Simultaneously with the final legal procedures, prepatory work such as placement of temporary bridges is initiated[48]. After the legal procedures described above, the actual construction works such as woodcutting, demolition and tunnel construction is started. The concern Ballast Nedam of the consortium Avenue2 suffered severe financial issues and was consequently taken over by the Turkish company Renaissance. Consequently, Strukton continues with the infrastruce works, and Ballast Nedam will execute the above ground area development (D-33). In the night of December 15th to 16th 2017, the tunnel was officially opened (D-32).

8) 2012 – present – area development: From 2012 onwards especially the municipality of Maastricht starts to explore further chances for area-development, i.e. continuing the tradition of their discussion starters for ambitions added to the 'programma van eisen' (cf. Figure 4.4 & D-18). The area development manager of the municipality of Maastricht calls this area-development in broad sense (I-6), as it explores general opportunities for spatial development. In essence, it adheres to the general goal of the area-development process to integrate the east and the west part of Maastricht (I-6; cf. Appendix VIII_D; cf. http://www.a2maastricht.nl/nl/mijlpalen/page_nieuws.aspx?id=3058). It opposes narrow area-

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[48] An overview of the construction work is provided by http://www.a2maastricht.nl/nl/mijlpalen/page_nieuws.aspx?id=646.

development, which basically combines infrastructure planning with real estate development. For example, the spatial overlap of the construction work stadspark (part of TB) and the gemeenteflat (part of BP) are already alligned in the planning process. Further area-development in 2014 incorporated also redevelopment of the local Albert Heijn (Figure 4.7). A non-spatial example of area-development is the A2school, where a work-study programme for 75 students are realised every year from the 5th of February 2010 onwards (I-6; D-28; D-29). Essentially, the programme incorporates notions of social return and local economic issues.

Figure 4.7: Integrating area-development by emphasising spatial overlap (source: D-1)

Furthermore, the area-development is formalised in 2015 with initiation of the programme '*Mijn Gezonde Groene Loper Maastricht 2030'*, officially ratified 7th of October 2015 (D1; D-33) (Appendix VIII_E visualises the explored area-development opportunities). The general aim of the programme is to integrate Maastricht's east-west development as opposed to the north-south orientation of the tunnel. Indeed, the area development answers to the final *3 goals of liveability, spatial barrier alleviation, and urban redevelopment* as outlined in 2006. This is done through assessing the 'flows' mobility, water, energy, waste, health care, safety, education (D-1).

For example, the mobility flow is addressed through internal integration which is explicitly sought by integrating railroad development, as illustrated by the plan '*One plan for city and railway*' (Dutch: een plan voor stad & spoor)(D-4). This obviously continues the land-use integrated character of the report titled '*One plan for city and highway'* (Dutch: 'een plan voor stad & snelweg' in 2007)(D-19). The area-developer emphasises that now is the time to act, given the 'momentum' of the A-2 and the successful connotation that is attached to the project by the general public (I-6). Other examples comprise isolating existing real estate based on energy-conscious concerns, establishing an 'education boulevard', and finding temporary functions for vacant land (D-1; D-2; D-3; D-4; I-6). The process of establishing a masterplan is still in development and is executed by continuing the co-design tradition of the A2 with a broad actor constellation related to

all aforementioned flows. Indeed, 2017 is marked as the 'tipping year' from infrastructure to area-development (D-3)[49].

4.3 Characterizing A2 Maastricht as an area-based approach

4.3.1 Introduction

This chapter describes the integration scopes (cf. Figure 2.6). Figure 2.2 indicates the part of the conceptual model this chapter therefore elaborates upon. Most importantly, this sub chapter will answer the first sub question, *what integration characteristics differentiate area-based approaches from traditional road infrastructure planning?* The scopes are described per interviewee because determination of a scope influences the other scopes: a priori aggregation of the scopes would eliminate assessment of this contingency. Table 3-1 describes the below described scope's attributes.

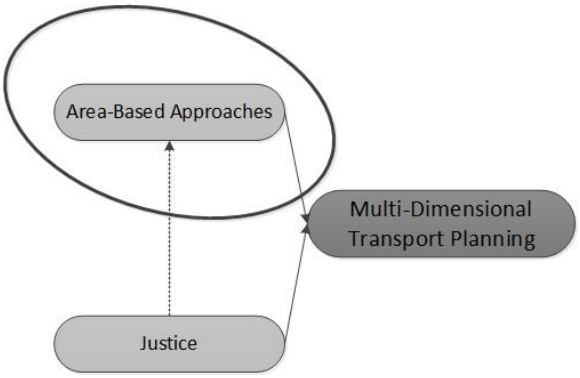

Figure 2.2 (repeated): A simple conceptual model emphasising area-based approaches

4.3.2 Experts on area-based approaches: critical perspectives

The interviewees (I-1; I-2) suggested 1) scrutinizing the contingent relation of functional and spatial integration, 2) the dynamics of spatial scope over time, 3) the potential absence of internal integration, 4) organizational integration, and 5) the result of an area-based approach.

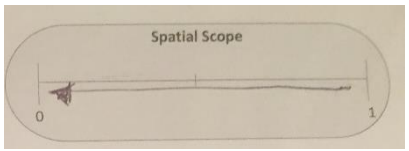

Figure 4.8: Spatial scope assesment in ABA over time (I-1)

Building on the complexicatedness of the spatial context raised in the previous section, as the functional scope increases, the local spatial scope *must* increase from being solely road infrastructure oriented towards being area-oriented (I-2). When the spatial context in which the road infrastructure project takes place is highly urbanized, the amount of interests or *functions* of the area is also high. Consequently, a high functional context is spatially contingent. However, they are not linearly contingent: even when the amount of functions increases significantly, the degree to which area-development takes place is still focused locally (I-2).

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[49] A topic that is not covered in this timeline is the potential issue of exploitation of foreign employees. Since this issue did not clearly emerge from the interview data, and in itself is not a matter of transport justice, it was excluded from this study. Two important points for information on this matter are accessible through http://www.a2maastricht.nl/nl/themas/inzet-buitenlandse-werknemers.aspx and http://www.a2maastricht.nl/nl/mijlpalen/page_nieuws.aspx?id=2701

Moreover, both interviewees (I-1; I-2) indicate that from the start towards realization of the project, the spatial scope of the project decreases (Figure 4.8). This account for the (inter)national spatial scope of determining the necessity of the project (given the total trajectory of the A2 Highway from Rotterdam to Genua (Figure 4.9), while also looking at the regional and local traffic in the province of Limburg and the city of Maastricht. Indeed, the latter concerns are adressed later in the project after its prioritization in the MIRT. Then, as the local scope becomes more important, the exact spatial embeddedness of the road infrastructure becomes more important, which is in itself more functionally interdepedent with local area functions. Concluding, the spatial scope starts off very large (international), with a very low functional integration (sectoral). Then, as the spatial scope moves towards 0, the functional scope increases. When the spatial scope is very little (municipal), the functional scope is very high (area-development).

Figure 4.9: International sectoral scope of A2 Maastricht (source D-19)

However, I-1 argues as the spatial and functional scopes move towards their middles (~0,5), internal integration *need not* take place. Indeed, the interviewees insist that it is scrutinized whether the function of the road is related to the function of its braoder position within the transportsystem of the region. In doing so, an important role is reserved for the province since they are responsible for the total regional transport system, whereas RWS is only responsible for traffic flow and safety on the national system. Consequently, internal integration is not the middle of sectoral and external integration, although Figure 2.5 suggests differently.

Fourthly, concerning organizational scopes, I-2 argued that the degree to which organisations work together and include other parties is important, but not defining. For example, when ProRail or NS are not formally included does *not* mean that issues of internal integration are neglected. Moreover, even if participatory processes may be initially organized for reasons of efficiency, this does not neccesarily mean that later in the process these cannot be employed to address equity related concerns. Concluding, even though organizational integration may be limited, this does not mean that area-based approaches make it impossible to address notions of internal integration or participation related equity concerns.

Finally, it is argued that a defining characteristic of area-based approaches is that the resulting spatial plan is different from a non-integrated planning product (I-1; I-2). These concerns are addressed in the conclusions of this section.

4.3.3 How practitioners enlarge Maastricht's area-based scopes

The national RWS' perspective

First, the RWS directors' staff member (I-5) indicates that the *functional integration* of the road infrastructure is not a distinct area-based characteristic, since the functional demands RWS attaches to the road infrastructure is no different in further area-oriented approaches than in less integrated area-oriented approaches, because all interventions in the main road infrastructure are indicated by the NMCA. This specific phrasing is used, since the interviewee stresses that *all* approaches of RWS are area-oriented. Moreover, it appears that internal integration does not occur from the perspective of the national RWS agency, since the interviewee indicates that the NMCA makes an inventory of the issues on the main road infrastructure network, not public or social transport networks. This conclusion is supported by the functional scope the interviewee indicated. Furthermore, the functional scope does not address a specific target group, rather, through the Integrated ProjectManagement' (IPM) role distribution it is ensured that all target groups are addressed. The last comment on the functional scope concerns LUTI effects. I-5 indicates that RWS as the executive office is responsible for the road capacity, not for area-development. However, RWS is interested in the amount of traffic that the to-be developed area will attract, as that will affect the demand on the road capacity. The collaboration with the parties in A2 Maastricht therefore helps, but otherwise RWS would still have informed on the development plans.

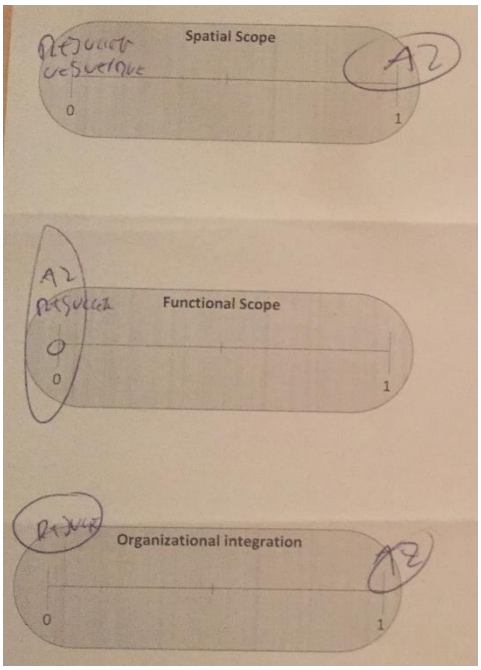

Figure 4.10: Integration scope assesment of RWS national (I-5)

Next, the *spatial scope* is valued as 1, since RWS always assesses the *national* road infrastructure programme. Since area-based approaches also incorporates areal lots other than infrastructure, the scope can also be valued as 1, since it is a *distinctive* characteristic of area-based approaches. It may be argued that RWS follows an inside-out rational, since the interviewee indicates that the only concern they have of development other than highway development is the development that enables or inhibits road infrastructure development, or the demand that that development may execture on road infrastructure capacity. Moreover, the interviewee argues that the entire area is represented through involvement of the municipalities of Maastricht and Meersen and the province of Limburg.

Consequently, and also because the IPM roles are adhered, the *organizational integration* is valued as 1. Moreover, the interviewee indicates that what also distinguishes the organizational scope is the so-called 'Maastrichtse Model' (cf. D-32), referring to the collaboration model of the A2 Maastricht as indicated by Appendix VIII_C. It is excpetional that four parties are each given the same vote, regardless of their organisational background. Moreover, the interaction between the (O)TB and (O)BP in both participation and decision-making is a defining characteristic for the A2

and for this area-based approach (I-5). The reason participation is organized this way, is because this is what was incorporated in the EIA, and is therefore not a defining characteristic.

The regional RWS' perspective

The regional agency has a different perspective on area-based approaches in general: 'we as RWS never do area-based, way too little' (I-3). Whereas the previous interviewee indicated that the scopes were a matter of 'a distintictive characteristic or not', this interviewee nuanced potential in-between values. First, the *functional scope* is *almost* 1 because of the fivefold goal set of A2 Maastricht as specified in the case description. Especially the focus on liveability and the examples provided to illustrate the equity goal set (A2 school, the tunnel that seperates on-going, regional, and local traffic, ambitions rather than strict judicial demands) are reason for the interviewee to value the functional scope as almost fully integrated. Even when issues were considered out-of the functional scope, such as a multi-national company considering locating either to the north or to the south of Maastricht, the potential LUTT effects were considered and advice was given by both the liason officer and communicated to the provincial liason officer to ensure that the traffic-wise best solution was informed. Furthermore, when asked if the functional scope of the A2 project was finetuned towards specific target groups, the interviewee indicated that strengthening east-west connections was the main aim of accessibility, safety and liveability issues, not specific target group areas. It may be argued that the social-economically weak neighbourhoods Wiekerpoort and Wittevrouweveld are to especially benefit from these better connections, but no specific target group. That is a municipal concern (I-3). When asked about the interal integration, the interviewee indicated that it stands to reason that for the user's accessibility not just the national highway infrastructure matters, but also the local and provincial roads, and that getting to any modality involves chain mobility. However, the project did not reason from 'accessiblity profiles for inhabitants', and that it might be an interesting perspective to try and integrate the project further. Therefore, it may be argued that internal integration did not occur from the RWS perspective in A2 Maastricht *as a characteristic* of the project.

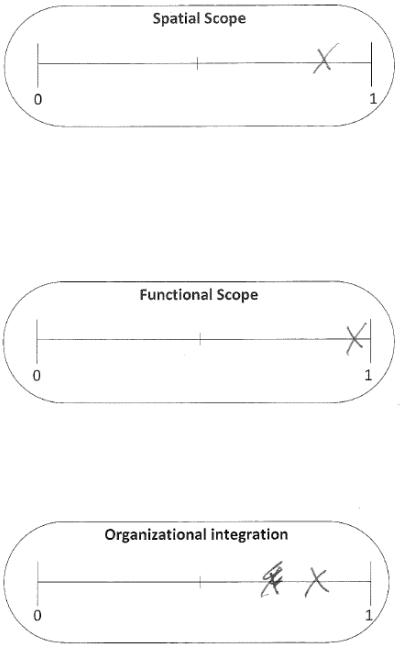

Figure 4.11: Integration scope assesment of RWS regional (I-3)

Next, the *spatial scope* is considered as very large, since the project addresses the spill-over effects of the infrastructure project on the local neighbourhoods (I-3). The interviewee indicated that this is the main reason the spatial scope is rather large, since in more line-oriented RWS projects the scope is limited to the road infrastructure. He indicated that the spatial scope could still be larger, as it did not extend further than the areas as represented by the municipalities. Consequently, this means that a local scope in the area-development phase is considerd as highly integrated. In that phase, the outside-in synergy thinking takes place. A multi-level understanding is mainly employed in the tunnel, as the interviewee focusses on the segregation of local and regional or international traffic.

Finally, the interviewee argues that the *organizational scope* is also integrated extensively, given the 'Maastrichtse model', and because the liason officer spoke to many stakeholders, including many housing corporations and the 'A2-buurten' and 'bedrijven' platform. This participation was not only a judicial demand that the liason officer adhered to; a lot of informal contact was maintained to monitor whether any proposed changes were acceptable or whether the participants had ideas to make the plans better. The integration could still be further integrated by including these parties *in* the Maastrichtse model by giving their vote the same weight as that of RWS (I-3).

The province's perspective

Although similar, the province's perspective on integration differs a little bit from the regional RWS' perception on the integration of the project, as it is indicated that all the scopes are integrated to a lower degree. The first reason for a large *functional integration* is the regional network scope that the province maintains. The province assesses the interconnectedness and robustness of the national, regional, and local traffic networks through scrutinizing potential substitutable connections. In Maastricht A2, the fly-over a Kerensheide ensured a proper interconnection of the A2 and A79 highway, which made the network more robust. Additionally, when a road infrastructure solution was unfeasible, the province insisted that the areas with less robust networks were offered a public transport alternative. Indeed, internal integration seems to occur from the province's perspective, although they argue that when the public transport alternative is worked out by another organisation (Maastricht Bereikbaar), and is indicated by the different focus of the province on accessibility rather than on RWS' focus on traffic flow (I-4). Moreover, given the A2 Maastricht's scope on spatial barrier alleviation and liveability, the functional scope of the project is even larger, even though this latter goal grows in importance as the project proceeds in time. Given these two goals, the target groups are especially those inhabitants who have to cross the A2 in east-west direction, the inhabitants of the 'Vogelaarbuurten Wiekerpoort & Wittevrouweveld', and the inhabitants of Hothem and Amby. Lastly, the interviewee indicates that LUTI effects are not prioritized by the province (I-4).

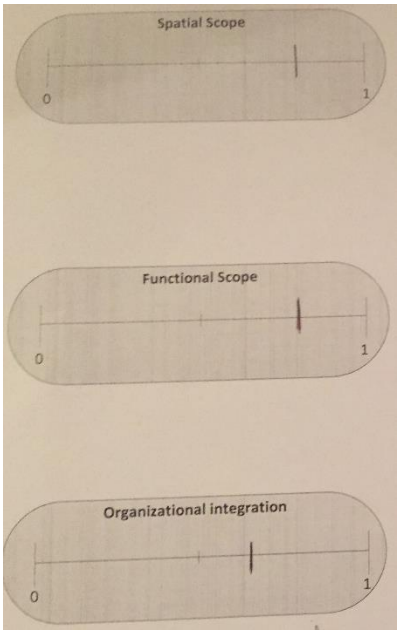

Figure 4.12: Integration scope assessment of the province of Limburg (I-4)

Next, the *spatial scope* follows from the functional scope and is consequently identical (I-4). The interviewee indicates that although the villages of Eijsden (south), Margraten (east) and Wittem (further east) could also be integrated in the project, but given the low remaining tapering effects of the A2 in these villages, and because they are therefore not addressed by the functional scope, these villages are excluded. The spatial scope could have been larger since these villages could have been integrated in the A2 project. However, the interviewee indicates that it is the province *responsibility* to make this assessment, since RWS' scope is too (inter)national (cf. Figure

4.9) and the municipality's scope is too local. It may be argued then that the province maints an outside-in and multi-level perspective traffic wise, and to a less degree for other sectoral concerns.

Finally, the *organizational scope* is regarded as *smaller* than the other two scopes, since although the 'Maastrichtse model' integrates the planning process further than line-oriented planning processes, matters of mobility management are excluded. An example I-4 provided is that severe accessibility deficits could occur for inhabitants of the city of Heerlen to the east of Maastricht during the construction period and thereby potentially also dupe businesses within the city of Maastricht. As explained, this city fell outside of the spatial and functional scope of the A2-project. However, the province felt that the situation was to be addressed even though it is not their responsibility. Consequently, outside of the A2-Maastricht project, the province informed the mobility agency Maastricht Bereikbaar whether they could adres the issue (cf. D-31). Subsequently, not only did internal integration considerations occur, also actions from another programme[50] were instigated *as a consequence rather than a characteristic* of the area-based approach. Arguably, the large organisational integration enabled this interaction. Furthermore, the interviewee indicates the organisational scope could be further integrated by incorporating these elements *within* the project, or increase the participation in the Maastrichtse model or the informal consultation with the villages that were excluded in the functional scope based on the diminishing tapering effects.

The municipality's perspective

The perspective of the municipality of *all integration scopes* is very similar to the province's. Moreover, the municipal area-developer adds that since the goals of the area-development become more important as the project proceeds, so does integration increas. Elucidating, the interviewee stressed that it is impossible to start with the furthest integrational aspects when the basics of the project given its initial infrastructural project scopes and goals are not taken care of. He calls the first ¾ of the integrational scopes the 'start engine' for the inventory and capture of the last ¼ the area-development opportunities, as was officially determined in 2009.

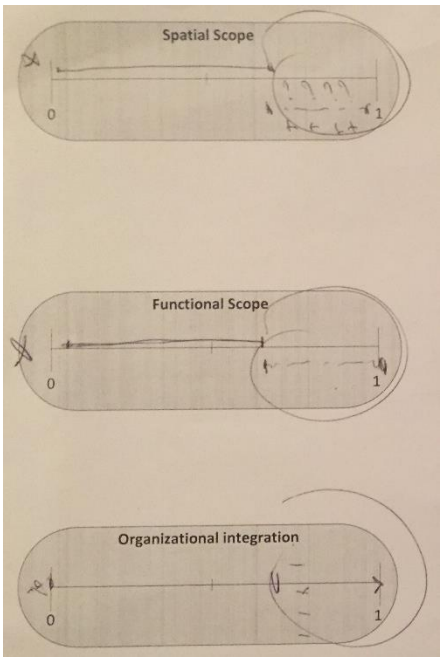

Figure 4.13: Integration scope assesment of municipality of Maastricht (I-6)

First, the *functional scope* is conceived as at least ¾ since the project goals next to traffic flow and accessibility leave a lot of space for area-development, especially regarding the liveability, spatial barrier alleviation, and urban redevelopment goals. For the area-developer (I-6) this especially means strengthening the Maastricht east-west interconnections (cf. AppendixVIII_D). The last ¼ is now being established[51], as this (cf. Figure 4.3). The interviewee emphasizes that this functional integration could be even

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[50] The employee-oriented accessibility approach of the then Ministery of Infrastructure and Environment's programme Beter Benutten (I-4)

[51] 'Inpassing' (I-6)

larger when area-development was seen in not a project but a programme perspective. Moreover, it may be argued that internal integration occurs as a consequence of the project. The interviewee indicates that based on the successful momentum of the A2 project, the opportunity to also improve the railway system and better connect it to the total transport system must not be left aside. He also indicates that this opportunity exploration is not primarily based on accessibility concerns. Therefore, although what is addressed concerns internal integration, it is *not based on* concerns of internal integration. Again, the area-based approach appears to *trigger* internal integration rather than that it is a *characteristic* of it. Indeed, the area-developer calls the A2-project a 'multiple power socket' (in Dutch: 'stekkerdoos') for other interests and actors. It is intriguing to see that although external integration is *a characteristic* of this area-based approach, whereas internal integration is *a consequence*, since this contrasts with Heeres et al. (2012b) their conception of functional integration (Figure 2.5). Furthermore, the municipality addresses the inhabitants of Maastricht and not neccesarily specific target groups. Lastly, the municipality appears to address LUTI issues, given their concentratation of the 'educational boulevard' as elaborated in the case description.

Next, the *spatial scope* in a narrow sense is the contractual line that contractor has to build within (I-6). However, that line is not interesting for proper east-west connections: the area-developer indicates that his spatial scope is the entire city of Maastricht, since that is what is required for proper east-west connections. Moreover, it can be argued that in area-development outside-in thinking takes place. I-6 argues that the all-in-one permit for the physical environment will help to address the different participation procedures for the OTB and OBP. Untill that time, the interviewee indicates that he considers it his role to make sure that not just the infrastructural interests are reflected in the participation procedures, but that the general area-interests shape the infrastructural solution. Indeed, the interviewee stated that the project is not a singular assignment, but a multiple, integrated areal assignment. The concerns of the area-developer are however local, and not multi-level.

Finally, the *organizational scope* for the first ¾ comprises the public cooperation of the A2 Maastricht that lasts until 2026. The last ¼ that is yet to be fully established, can also occur outside of the contract period and with different coalitions. However, it is *due to* the area-based approach that these coalitions are shaped. The interviewee indicates that given the spatial and functional scope, the organizational scope follows the same pattern. Moreover, he indicates that the area-development is developed in close collaboration with a large spectrum of stakeholders, as indicated by (D-1; D-2; D-3; D-4) and including the A2-buurten and -bedrijvenplatform.

4.3.4 Preliminary conclusions regarding area-based integration

Here, the first sub question '*what integration characteristics differentiate area-based approaches from traditional road infrastructure planning?*' will be answered. Arguably, the case study points out 1) specific characteristics regarding the functional, spatial, and organizational scopes as based on Table 3-1, and 2) general distintictive characteristics of ABAs.

Functional Scope

First, four conclusions may be connected to the functional scope:

1) Inter-sectoral integration: Although functional integration is considered as large, all interviewees stated that the primary goal of the project still is infrastructural improvement. This primary focus is not expected to change given the dominance of the NMCA in determining what a traffic problem is;

2) Internal integration: The case study appears to portray that internal integration *does not occur as characteristic to area-based approach*. Both the national and regional RWS interviewees argued that their focus is on the national highway system rather than an accessibility profile or chain mobility perspective. Contrasting, the province and municipality interviewees indicate that when they suspect that regional accessibility (rather than the A2-road infrastructure traffic flow) potentially suffers, that they address other actors to act on this concern. Consequently, it may be argued that internal integration *does occur as a consequence of area-based approaches*.

3) Land-use and transport interactions (LUTI): The results suggest that LUTI is considered in the ABA primarily due to the municipality given their responsibility for area-development. RWS indicates that they are interested in only those LUTI effects that affect traffic flow;

4) Targeted audience: The data suggest that the inhabitants of the city of Maastricht are considered as a targeted audience, especially inhabitants of the social-economically weaker neighbourhoods Wittevrouwenveld and Wiekerpoort, but not neccesarily specific target groups.

Concluding, the functional integration appears to be larger than traditional road infrastructure planning but allows for further enlargement. This statement will be further elaborated on when assessing the influences of justice in section 4.6.

Spatial Scope

Secondly, two conclusions may be connected to the spatial scope:

1) Inter-territorial integration: All interviewees consider the spatial integration as a large and distinctive characteristic, since it includes areas broader than the infrastructure itself, assesses east-west connections for local neighbourhoods, and incorporates surrounding cities Meerssen, Rothem, and Amby (also indicated in D-18; D-32). Moreover, the interviewees indicate that the spatial scope could be larger, but that the tapering effects of the A2 would not necessitate doing so.

2) Inside-out / outside-in thinking: It may be argued that the A2 project as a whole reasons from an outside-in rationale, as it incorporates *local* area demands, desires, and ambitions.

Concluding, spatial integration is arguably larger than traditional road infrastructure planning but allows for further enlargement. This statement will be further elaborated on when assessing the influences of justice in section 4.6.

Organizational Scope

Thirdly, two conclusions may be connected to the organizational scope:

1) Horizontal and vertical integration: All interviewees consider the organizational integration als large and distinctive based the collaboration "Maastrichtse Model"[52]. The interviewees indicate that integration could increase further by giving the participatory platforms (e.g. A2-buurten and -bedrijven) also an official vote, or by incorporating villages or other transport agencies that were excluded due to limitation of the functional scope.

2) Participation: Most interviewees indicate that participation occurred not merely out of judicial demands or for efficiency reasons, but also for actually increasing the quality of the yet to-be made plans. Especially the interviewees who were responsible for organizing the participation stated that informal consultation was often sought (I-6; I-3)[53]. Participation mainly originitated from inhabitants of the municipalities of Maastricht and Meerssen (cf. case description 2010 – March 2013, legal procedures).

Concluding, organizational integration appears to be larger than traditional road infrastructure planning, but allows for further enlargement. This statement will be further elaborated on when assessing the influences of justice in section 4.6.

General Area-Based Characteristics

Finally, regarding *general characteristics of ABAs*, a conflicted perception of the national and regional RWS agency exists, where the former states that *all RWS projects are area-based, whereas the latter stated that rarely any RWS project is area-based.* Furthermore, the RWS agencies valued the integration scopes as further integrated than the province and municipality did. Combined, it may be argued that the involvement of local governments, i.e. parties with local knowledge, leads to a more complete perspective on what is in- and excluded. This could mean that organizational integration is a precondition for spatial-functional integration, especially considering that RWS national does not consider area-development as its responsibility. Moreover, all interviewees mentioned that a defining characteristic of ABAs is that it leads to a different result (cf. Figure 4.5). Finally, a regional void may potentially occur within ABA. It may be argued that the area-based approach especially integrates local (area-development) and national (road infrastructure planning) concerns, but does not necessarily or explictely integrate regional (internal integration, robust regional network) concerns.

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[52] Case description year 2006, also see D-31 and Appendix VIII_C

[53] It may be argued that the 'critical perspective on ABA' (cf. I-2) could indicate differently, since early participation did lead to concrete scope identification early in the process and that this reduced uncertainties and enabled cost efficiency. Issues of reactivity (cf. chapter 3.5.2.) may have occurred.

4.4 Distinguishing justice perspectives in the A2 Maastricht

4.4.1 Introduction

This chapter describes the conceptions of justice in A2 Maastricht (cf. Figure 2.8). Most importantly, this section will answer the second sub question, *what are the main conceptions of justice in relation to transport?* The justice characteristics are described per interviewee as based on Table 3-1 described attributes. Here, no perspective from area-based experts is elaborated on, as the interview data provided mere speculation[54]. Since the practitioners were unfamiliar with the justice jargon, the phrases indicating the justice conception were not as explicit as was the case with the ABA assessment. However, as not all interviewees wanted to be cited, exact explictation of justice conception is sometimes apprehended. Negative effects on research quality are avoided as much as possible through thorough description.

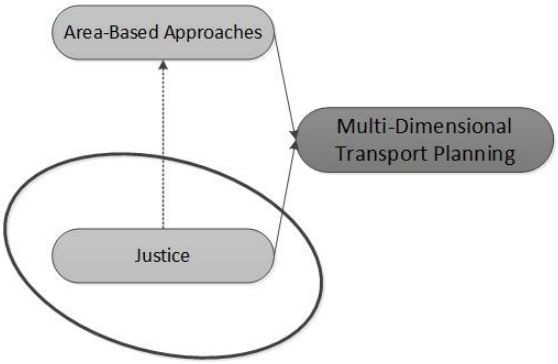

Figure 2.8 (repeated): A simple conceptual model emphasising justice

4.4.2 Recognizing the mixture of justice perspectives by practitioners

The national RWS' perspective

First, some general indications of justice stood out. For one, I-6 indicated that he found *the phrase* of justice heavily connoted, as all projects of RWS are *justified* because 1) all decisions are accepted by the 'Raad van State', the highest judge of the Netherlands, and 2) all decisions therefore adhere to the legal minimum. Secondly, the interviewee indicated that judging the *justification* of a planning process by its 'planning plus' would not make sense, as many other projects also achieve such an added value. Finally, I-6 indicated that justice is heavily depended on a national assessment, as every project be it in Maastricht, Den Helder, Zierikzee or Groningen must be mutually *fair*. The interviewee indicated no project is given an advantage over another.

Then, regarding specific justice principles, the capability approach, sufficientarianism and prioritarianism appear to be rejected as principles of justice in road infrastructure planning from I-6's perspective. I-6 indicated that although he recognizes discussions regarding the translation of for example sufficientarianism in the concept 'nabijheid'[55]. However, he also indicates that RWS is oriented towards traffic flow and bottlenecks, and that consequently an economic improvement can occur that can also relief sufficientarian concerns. Indeed, he rejects gravity-based accessibility measures as the agreed upon measure for road infrastructure planning. Moreover, I-6 *explictely* states that the goals of RWS are oriented towards that economic perspective. Arguably, this excludes the sufficientarian perspective. Consequently, no capabilitarian or prioritarian perceptions functioned as guiding principles of justice, as the former is not something RWS is accountable for, and the prioritarian concern would conflict with the earlier notions of nation wide mutual fairness.

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[54] One statement was made with certainty was that I-1 indicated that contemporary accentuation of MIRT and the NCMA is on economic justice en utilitarianism

[55] Cf. (Planbureau voor de Leefomgeving, 2014) chapter 5.

Additionally, utilitarianism appears *not* to be rejected, given the indicated economic and aggregated orientation.

The dominant perception of justice appears to be contractarianism. I-6 frequently employs the phrases 'contract', 'rule', 'norm', and 'law'. Often implictely and sometimes explictely, it appears that the notion is uphold that justice is met when the (judicial) agreements or standards are complied to.

The regional RWS' perspective

A general notion of justice that the interviewee indicated at the end of the interview was that issues of justice do occur and are treated in A2 Maastricht, but a different jargon is addressed to do so. An example the interviewee raised concerned the 'Vogelaarwijken', and how the spatial barrier alleviation should prevent a downward spiral there, where house prises go down due to air and sound polution, which in turn attracts underprivileged citizens whom may also have a negative effect on house prices. I-4 indicates that his position as liason officer puts him in an ideal position to notice these issues, and that as RWS employee he is in a position to adress the infrastructural issues that influence this downward spiral. However, RWS is not accountable for addressing these issues of social justice. Therefore, I-4 states that he considered himself responsible for putting these issues on the agenda in A2 Maastricht, but that the exact solution belonged to the domain of area-development and therefore the municipality was hold accountable.

Then, regarding specific justice principles, *none* of the identified justice principles appeared to function as *guiding* principle. Rather, sufficientarian concerns appear to be unadressed, whereas contractarian, capabilitarian and prioritarian concerns arose based on the context. First, the interviewee indicated that the overall accessibility increased, and that he didn't think that a minimum accessibility was met and that potentially for some inhabitants a below-threshold level of accessibility could still occur. However, I-4 argues that accessibility *did* increase for *all* parties, i.e. those below a threshold are now less below that threshold. Therefore, it may be argued that nor a negative nor a positive thesis of sufficientarianism is uphold, because the focus of the project is not on bringing people above a threshold.

Secondly, the capability approach and prioritarianism were probably also not a *primary* focus of justice, since the external environment and travel related impairments were not identified a priori to identify to-be prioritised social groups. I-4 does indicate that as traffic safety was an important goal which was monitored through a 'black spot' analysis, which led to 11 abilities to cross the A2 without encountering highway traffic. The interviewee explicated that this was motivated from traffic safety and accessibility concerns, but not by specifically identifying vunerable groups. It may be concluded that although capabilitarian concerns for the travel-related impaired are incorporated, these concerns were not the reasons for measures that benefit this group.

A similar line of reasoning holds for prioritarianism. I-4 indicates that especially east-west connections were important for weaker road users, and that the intersections were also removed so that the buses could cross quicker. If this is a measure to operationalise and prioritise the maxmin criterion, then prioritarianism appears to be applied on a local scale. Moreover, prioritarian concerns that emerged during construction for Rijkswaterstaat were mentioned to parties that

could help alleviate these issues, and these measures were sometimes paid by RWS. An example I-4 raised concerned application of a 'urgent cases situation' concerned a manically depressive man who could not cope with the construction works: RWS and a housing cooperation paid for temporary relocation of the man and assisted in finding more temporary housing. Concluding, the capability approach does not appear to be the primary focus of justice for RWS regional, and prioritarianism might be applied on a local scale.

Third, the interviewee indicates that contractarianism should not be uphold too tightly. Especially in Maastricht A2, the indication of non-binding ambitions over judicial demands breaks with a traditional mind-set of Rijkswaterstaat where simply adhering to judicial demands is sufficient[56]. Moreover, I-4 considers it his job as liason officer to build the demands the contractor has to adhere to as a basis, but to remain flexible when issues occur during construction, and to find additional opportunities when the area-development phase occurs[57]. Finally, sometimes sticking to agreements simply won't work. For example, I-4 indicates that some inhabitants felt that sticking to judicial agreements simply wasn't enough. Bringing legal or pollution experts to convince them that the measure did agree to the law, would not change their opions. Then, arguably, also contractarianism is not a dominant perspective of justice.

Finally, I-4 indicates that an important reason for starting A2 Maastricht was that the A2 could not facilitate the economic demand of the road, but that merely making the city more attractive or facilitate traffic flow better is not at all the intention of the project. Consequently, it may be argued that RWS regional rejects utility as guiding justice principle.

The province's perspective

A general notion of justice that arose was the difference between the bureaucracy and the political leaders within the Province (I-5). The interviewee indicated that he thought that matters of justice are primarly a 'bestuurlijk' concern, rather than an 'ambtelijk' concern. He considers it the responsibility of the bureaucracy to properly inform the political leadership, but the final justice call is for political leaders.

Then, regarding specific justice principles and building on the former statement, contractarianism was not considered as *guiding* justice principle. It is important that every decision is politically justifiable, but that does not mean that a guiding principle is that either 'Provinciale Staten' or the 'Raad van State' has to check every decision. I-5 considers it important to look beyond the minimum agreed upon targets. As argued under the chapter of functional and organizational integration from the province's perspective, the road infrastructure is only one component of a transport system. The interviewee provided the example that doing more than obliged for someone

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[56] "Binnen Rijkswaterstaat zijn wij gewend gewoon te zeggen nou joh als het maar aan de wet voldoet dan is het goed. Wij hebben letterlijkmeegekregen, geef in de aanbesteding, je moet sowieso aan de wet voldoen, dat was een eis, maar we hadden een ambitie die lag veel hoger.

[57] In de beginfase ben je als liason officer stel je een aantal eisen op die je dan meegeeft aan de aannemer, en daar baseert die zijn bieding op. Tijdens de uitvoering van het werk ben je ermee bezig dat die eisen ook daadwerkelijk ingevuld worden en nagekomen worden. He soms blijkt in de praktijk dat halverwege dat ze toch ergens last van hebben. En of je dat niet op een bepaalde manier kan oplossen. Nu, bij die gebiedsgerichte fase heb je dat veel minder (…) Alsof er een oplossing die wij in ik noem maar wat 2009 contract afgesloten, het is 2017, en ik wist in 2009 niet wat ik deed, hoe ik er in 2017 bij zou zitten, wat dan belangrijk was.

outside of the planning scope, e.g. the public transit discount, also contributes to the "total mobility task". Therefore, contractarianism does not appear to be the province's guiding justice concept.

Secondly, and consequently, sufficientarianism in the sense of a strict threshold does not appear to occur, but a positive thesis, i.e. it is important to assess when people suffer large accessibility deficits, seems to be uphold. Sufficientarianism does not explicitely manifest itself *within* the area-based approach, but does in the line of reasoning of the province. Illustrating, the interviewee indicated that the aforementioned public transit discount was necessary to ensure proper accessibility. This concern was not raised *within* Maastricht A2, but occurred from the total mobility management monitoring the province maintains. Moreover, I-5 indicates that other measures such as "the employee targeted approach" was also geared towards alleviating possible inconveniances during construction. Furthermore, the interviewee often indicated that the total robustness of the road infrastructure system is guarded in conjunction with the public transport system, to maintain *overall* accessibility. For example, the free public transport subscription should maintain accessibility levels on the road infrastructure, will also influencing a proper level of public transport through increased public transport demand. However, the interviewee indicates that they maintained a realistic perspective regarding accessibility levels in the rural areas of the province, as even in the Netherlands there is no unlimited source of money (I-5). Therefore, it may be concluded that the province does uphold sufficientarian concerns, without taking establishing a strict threshold. Moreover, it may be concluded that they could only do so by maintaining an internally integrated perspective.

Thirdly, the latter conclusion may be argued to comprise a prioritarian account of justice regarding its accessibility aspect. However, no specific social-economic groups are to be attributed prioritized. Illustrating, the interviewee brings up the issue of Cost Benefit Analysis (CBA), and states that it is smart to elucidate how the A2 Maastricht project serves not only accessibility issues, but also serves liveability issues in Rothem, Amby, Meerssen and Maastricht itself. If those entire cities are considered as social economic groups, then a prioritarian concern regarding liveability could also be uphold. However, the interviewee indicated that an individual perspective might even have to be strayed away from, since the aim is to increase entire cities. For example, the interviewee elucidated that some inhabitants have been living in appartements directly alongside the A2 since the early 60s. These apartments were quite cheap since the pollution on these living spaces is high. However, these inhabitants did not mind, as what they cared for was the price of the living space, not the pollution. I-5 indicated that it is the province's responsibility *not* to prioritise their concerns, even if this is an injustice from their perspective, and to look beyond their individual concerns. Probing the interviewee led to the answer that expert judgement determines when to change opions. The interview data does not reveal consequent tacit skill and knowledge involved in this judgement. Concluding, prioritarian justice principles may be involved from an accessibility perspective, but probably not from other perspectives.

Fourthly, the results did not indicate that the capability approach occurred as principle of justice, neither regarding its aspect of travel-related impairments, nor regarding its external environments.

Finally, utilitarianism seems to be rejected as *guiding* justice principle. In probing the interviewee regarding the CBA, he mentioned explictely that there is more to decision-making than

'yield' (Dutch: rendement). He provided the example that if at time of the construction and the potential afterward potential demolishment of the Eiffeltower a CBA would have been conducted, it would probably not have been built. Earlier statements regarding the smart phrasing of additional value of the A2 for not only inhabitants of Maastricht and concerns of accessibility but also liveability, arguably indicate that utilitarianism is indeed rejected as guiding justice principle.

The municipality's perspective

First, contractarianism does not appear to be a guiding principle of justice. For one, and especially regarding environmental issues, I-7 indicates that it stands by itself that the norms of Dutch parliament are adhered to, but that the exact spatial embedding is up to the parties involved in A2 Maastricht. Indeed, the goal of A2 Maastricht is to add spatial quality on top of the judicial EIA demands. I-7 states that the goal of the project explictely was to incorporate ambitions on top of demands (cf. Figure 4.4). The interviewee explicitely stresses that justice requires continuous reconsideration of solutions, and that fixing or forcing decisions, i.e. an agreement is an agreement (in Dutch: afspraak is afspraak), works too rigid in opportunity exploration. Therefore, it may be argued that contractarianism is not the guiding principle of justice for the municipality.

Secondly, sufficientarianism also does not appear to be the guiding principle of justice. The interviewee explictely indicated that employing the current successful momentum of the A2 as a window of opportunity for area development has been the prime consideration of the municipality. He elaborates that this is a perfect opportunity for also improving the total transport system of the city, including the slower and public modes of transport. However, when asked if this was based on certain mobility insufficiencies or thresholds, the interviewee indicated that it stands by itself that over time the train station would also develop as a barrier, and that the current momentum is an opportunity for improving accessibility. This would not require reasoning from accessibility insufficiencies. Consequently, it may be argued that sufficientarianism was not a principle of justice.

Next, the interviewdata is inconclusive on whether notions of prioritarianism are a dominant justice perspective. Sometimes, the interviewee stresses that it is important to "give the city back to the slower modes of transport". Whereas at other times he indicates that it was also important that different social-economic groups understood the perspective of the municipality, and that the concern of the A2 project was not just on the single street of the inhabitant, but on the interests of entire neighbourhoods[58]. However, it is unclear if this means the concerns of these inhabitants were prioritised, or whether were merely an important group to incorporate in the planning process. Moreover, on multiple occasions I-7 indicated that "a situation in which the city is optimally accessible, but the surrounding neighbourhoods suffer is unacceptable". Indeed, he indicated that he is responsible for the entire area, and that the focus on east-west connections is therefore most important. Given the aggregated nature of 'east-west connections' and 'neighbourhoods', prioritarianism probably is not a dominant justice notion.

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[58] The interviewee also indicated the importance of knowledge workers. However, since prioritarianism is concerned with those worst-off and this social-economic group is rather better of than national average, this group is considered under the functional scope section but not here.

Fourthly, the results did not indicate that the capability approach occurred as principle of justice, neither regarding its aspect of travel-related impairments, nor regarding its external environments. The phrase 'slow traffic' is mentioned on multiple occasions, and these could be considered as a precondition for taking care of those who are travel-related impaired. However, the set-up codes did not apply to these situations, and therefore, arguably the capability approach is not a guiding principle of justice.

Finally, a general notion that stood out elaborates on contractarianism. An interest group that especially opposed the potential environmental impacts of the A2 Maastricht was action group A2 Maastricht. The interviewee indicates that Klaor Loch said that A2 Maastricht was unjustified because they didn't adhere to the standards of the World Health Organisation. However, I-7 indicated that national standards were uphold. Apparently, within contractarianism there can be a conflict about what the contract upholds, which might consequently affect whether contractarianism can be considered as guiding justice principle. Moreover, the interviewee indicates that the 'Klaor Loch' discussion distracts from the aims of area-development. He recalls situations during the EIA participation in which people stated that the local fauna was better protected than the people which the project conerns. I-7 indicates that this emphasis on fauna should not confuse that the project is especially important for the people involved. Concluding, it may be argued that whether contractarianism is uphold depends on an actor's point of view, but that it should not distract that A2 Maastricht started for matters of social justice rather than environmental justice.

4.4.3 Preliminary conclusions regarding justice

Here, the second sub question '*what are the main conceptions of justice in relation to transport?*' will be answered. The case study appears to point out 1) specific characteristics regarding the various justice conceptions as based on Table 3-1, and 2) general justice characteristics.

The Capability Approach

First, two conclusions may be connected to the capability approach:

1) External environment: None of the actors appeart specifically investigate to investigate how external environment enables or constrains individual capabilities.

2) Travel-related impaired: Two observations may be related to travel-related impariments. First, the regional RWS agency assesses traffic safety through 'black spots', and in doing so identified spots that might be difficult to traverse for vulnerable travel audiences. Secondly, the municipality focusses on slower modes of travel, whom also may be more vulnerable travel audiences. However, the interview data suggests that both actors maintain an especially aggregated perspective, rather than determining specific travel-related impairment that should be taken into account when making transport decision. It may be argued that this perspective is only partially met.

Concluding, the capability approach is visible too a limited degree in the area-based approach, especially for RWS regional, and not dominant for the entire A2 project. This statement will be further elaborated on when assessing its influences on area-based approaches section 4.6.

Contractarianism

Second, two findings may be connected to contractarianism:

1) Contract: adhering to the principles of a contract appears especially important for the national RWS agency. The interviewee data suggests that for the other parties, established agreements best understood as a minimum, and something that has to remain flexible to optimally explore further opportunities, either within or outside of the A2 Maastricht project. Consequently, the justice perspective of contractarianism likely varies greatly between the involved parties.

2) Moreover, contractarian issues especially arose in the context of environmental issues.

Concluding, contractarianism is arguably not the dominant perspective in the total of the A2 Maastricht, but it *is* the dominant perspective for the national road infrastructure agency. This statement will be further elaborated on when assessing its influences on area-based approaches section 4.6.

Sufficientarianism

Third, two conclusions may be connected to sufficientarianism:

1) Sufficiency threshold: First, none of the parties appear to adhere to *strict* accessibility thresholds. Moreover, the national RWS agency explicitely rejects doing so and states that other rules were made than sufficientarian or 'nabijheids' concerns. The regional RWS agency indicated that it is an interesting concern, but not one that manifested itself in A2 Maastricht. The interview data neither suggest that sufficientarianism is a concern of the municipality. However, although not explictely mentioned by phrases such as thresholds or minima, the province appears to maintain an overall, regional sufficiency perspective. Therefore, this may suggest that sufficientarian concerns do not manifest *in* the area-based approach, but the concerns were present both by supporting the A2 redevelopment and *as a consequence* of the A2 by instigating other mobility measures where accessibility deficits could occur.

2) Voluntary exclusion / inequality: The issue of voluntary exclusion or inequality emerged only once. The national RWS agency indicated that if lower accessibility levels occur because people chose to live in a place somewhere where accessibility is lower, then it is not to be perceived as an injustice. The issue did not emerge on other occasions.

Concluding, sufficientarianism is probably not the dominant perspective in total A2 Maastricht but is a visible concern of the province. This statement will be further elaborated on when assessing its influences on area-based approaches section 4.6.

Prioritarianism

Fourth, two conclusions may be connected to prioritarianism:

1) Difference principle / maxmin criterion: the national RWS agency explictely rejects prioritarianism by stating that all projects are valued equally. Moreover, prioritarianism probably isn't *dominantly* uphold by the regional RWS agency, given the aggregated nature of the black-spots and 'east-west connections', and the incidental, local nature of the prioritarian inspired measures. For the province and the municipality, the data is less clear whether prioritarian justice principles are involved. Both actors indicate the importance of adhering to the needs of deprived

neighbourhoods and villages, as well as making the inhabitants look beyond their personal concerns. However, the interview data does not clearly suggest that these groups are to be given absolute priority. Therefore, the aggregated perspectives of east-west connections and neighbourhoods lead to rejection of prioritarianism as uphold principle of justice.

2) Operationalization of prioritarianism proved to be difficult, since the exact involved aggregation of the to-be prioritized group naturally differs per actor, as they differ in their own spatial scopes. Moreover, the results suggest that prioritarianism may be a concern that occurs *during* construction, and not a priori or in harsh maxmin criterions.

Concluding, prioritarianism does not appear to be a dominant justice perspective, but is visible to a minor degree for the non-national actors. This statement will be further elaborated on when assessing its influences on area-based approaches section 4.6.

Rejection of Utilitarianism

Fifth, two conclusions may be connected to the (rejection of) utilitarianism:

1) Rejection of utility: the interviewee data suggest that RWS national *does not reject* utilitarianism as a guiding principle. Rather, it appears that utilitarianism is understood as a principle to serve the concerns that other principles of justice address. Especially the section emphasizing the prioritization based on the NMCA indicated the front-end utilitarian influence. However, the other interviewees indicated that more concerns than utility matter, be it based on a valuation through a 'plus structure' (municipality), that a CBA only captures part of reality and predictability (province), or that the utility-based concerns were especially important upfront, but not in later stages of the process (RWS regional).

2) Aggregation: An important characterstic of the utility code is its aggregated nature. The interview data suggest that every actor aggregates especially to the level of its own territorial demarcation, i.e. the municipal within the municipal boundaries, the province within the provincial boundaries etc. Although it may be argued that this is rather self-explanatory, it will have important implications for justice in transport.

Concluding, rejection of utilitarianism is arguably *not* visible on a national level and in front-end planning stages, but utilitarianism appears to be rejected on lower spatial scales and in later planning stages. This statement will be further elaborated on when assessing its influences on area-based approaches section 4.6.

General Remarks Regarding Justice

Based on these conclusions, four final remarks regarding justice are in order. First, if indeed utilitarianism is a stronger justice conception on a national level and in front-end phases of the planning process, than other-than utilitarianism perceptions of justice, than other-than utilitarianism perceptions of justice may be traded-off. This would have serious implications for the possibility of transport justice, as this requires among others sufficientarian concerns to be assessed up-front, rather than in end-phases.

Secondly, it stands out that the conception of justice from the perspective of the national RWS agency appears to differ more from the other interviewees perspectives of justice. Moreover, the national agency appears to adress a concern that other interviewees didn't: justice for I-6 also

includes that no project within the Netherlands is to be advantaged over another, which may indicate notions of egalitarianism.

Thirdly, all interviewees indicate that justice was not a matter that was discussed *explictely* at any point in the process. Addittionally, all interviewees indicated that they were very curious towards the meaning of the 'justice'. One interviewees had a reserved attitude towards the topic, as it might insinuate that some elements of the might be injustified. It may indicate that 1) justice is a sensitive topic, 2) that the phrase is rather 'attending' or' connoted' and may trigger issues of reactivity, or 3) that justice is not a matter of bureaucracy (ambtelijk) but a decision to be made by politics (bestuur) or legal agencies (e.g. Raad van State). Indeed, all these suggestions were raised by interviewees.

Finally, both the national and regional RWS interviewees indicated that they are not respectively not primarily accountable for the social justice conceptions. Below, this will be related to issues of organizational integration and multi-dimensional transport planning.

4.5 Uniting area-based and justice perspectives through Maastricht's transport goals

4.5.1 Introduction

This chapter describes the results regarding the Rietveldian transport valuation approach (cf. Figure 2.13). Figure 2.12 indicates the part of the conceptual model this chapter therefore elaborates upon. Most importantly, this sub chapter will provide a preliminary answer to the third sub question *"how can the justice conception be connected to the road infrastructure area-based approaches?"* The answer is preliminary since effects of justice may also be attributed to influences on the integration scopes, which is discussed in chapter 4.6. Here, the results of the area-based experts are described first to describe general features of the goal set of area-based approaches. Thereafter, the results of the practitioners are described. Finally, conclusions are ascribed to the results. The latter two sub chapters are structured along the transport gaol variables as indicated in Table 3-1.

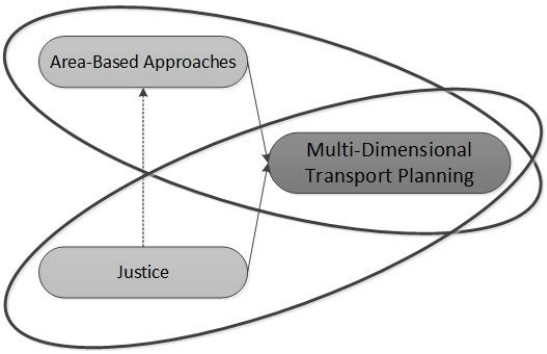

Figure 2.12 (repeated): A simple conceptual model emphasising multi-dimensional transport planning

4.5.2 Describing area-based approach experts' critical perspectives and dynamics

First, interviewees I-1 & I-2 pointed out that in interpreting the goals of ABAs explicit attention must be directed to 1) the 'critical perspective' on area-based approaches, 2) the spatial context of the transport project, and 3) dynamics of goals of ABAs over time.

The critical perspective on ABAs (I-2) comprises a critical perspective on what is to be understood as efficiency and an equity goal. The interviewee points out that although the goal set of ABA is potentially best understood as an equally valued triangle, the reason might actually be an interpretation as depicted in Figure 4.14. The reason is that equitable goals are shaped through participation and therefore may seem to adress concerns of the equity dimension, while the reason is to limit obstructive/hindrance power of the local population. Therefore, although it may seem that concerns of the equity dimension are addressed through various participation schemes, the underlying rational may be addressing concerns of efficiency by preventing emergence of obstructive/hindrance power of the local population in later, legal parts of the planning process.

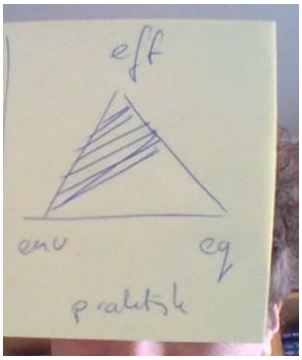

Figure 4.14: A 'critical' perspective on area-based approaches' goal set (I-2)

Secondly, interviewee I-2 argues that it is a necessity under complex or complexicated situation (cf. Lenferink, 2013 p.160), there is no alternative than to conduct the planning process as an area-based approach. The reason is that the limited understanding and predictability of the spatial embedding of the road infrastructure in this context inhibits a linear, top-down planning

process. Therefore, participation may not be employed for equitable reasons, but for feasibility reaons.

Thirdly, the dynamics of goals of ABAs over time potentially requires the shifiting of the goal set during each of the described time periods in section 4.1 (I-1). The interviewee points out that although the total planning project may best be illustrated by an equally valued triangle and even by a larger emphasis on equity from the area-development phase of 2012 and onwards, the original motivation of the project was provided by the MIRT[59]. Consequently, since the MIRT is primarily efficiency driven (I-1), this may have consequences for the degree to which the equity dimensions can be valued in a transport justice sense.

4.5.3 A heterogeneous landscape of practitioners' transport goals

All the interviewees indicated that *the project as a whole* is best understood as a balancely filled triangle: efficiency, environmental, and equity concerns are all valued as equally important throughout the entire A2 Maastricht project. However, their reasoning to do so differs significantly.

The national RWS' perspective

First, the RWS directors' staff member (I-5) indicates that *any* project of RWS is *always* balanced from the perspective of this valuation because of the 'Integrated ProjectManagement' (IPM) organization. In this model, five roles are recognized, comprising 1) a projectmanager, 2) risk manager, 3) liason officer, 4) technical manager, and 5) contract manager. Efficiency concerns are addressed by 1 and 5, environmental concerns are addressed by 4, and the equity concerns are addressed by 3 and 4. Consequently, the interviewee argues that although not without healthy tensions, none of the dimensions are given a higher relative weight nor is there any legitimation to do so as it would not adhere to the 'rules of the game'. Later, the interviewee elaborates that by rules of the game he means the combination of the 'National Market and Capacity Analysis' (NMCA), the MIRT and the infrastructure planning act. The NMCA determines the largest bottlenecks; the MIRT and infrastructure act are the implementation programme and law that translate these bottlenecks into actual infrastructure projects. Given the emphasis of the NMCA on the largest bottlenecks, it may be argued that even though the interviewee argues that the triangle is fully balanced, there might be a small bias towards efficiency conerns. When confronted with this observation (again, later in the interview), the interviewee responds that although it may be possible to arrange a different prioitisation in the NMCA, that is not what is democratically agreed upon. He argues that national road infrastructure planning and RWS is organized around bottlenecks and traffic flow, and that addressing those

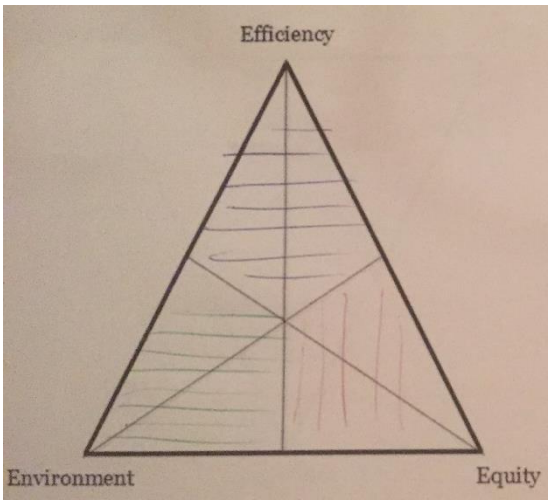

Figure 4.15: Rietveldian assessment of A2 for RWS national by I-5

[59] Dutch: Meerjarenprogramma Infrastructuur, Ruimte en Transport

concerns enhances economic accessibility of cities, and consequently enhances local economic climate, and that this is an economic perspective. Consequently, it may be argued that projects as a whole are balanced, but that they start of with an economic rationale. Furthermore, an important equity concern was raised. The interviewee indicated that the national bureau of RWS is especially concerned with issues of equality between projects.

The regional RWS' perspective

Secondly, the RWS regional liason officer indicated that RWS' goal set regarding the A2 was *distinctly* different from the balanced set of the A2 as a project, and different from the municipalities and province (I-3). He indicated that the RWS perspective is best visualized by Figure 4.16 (also Appendix IX_C). Due to the emphasis that the municipality and the province put on the equity dimensions instead of the efficiency dimensions, he considers the total project to be balanced. An example where equity concerns were prioritized over efficiency concerns regard the matter of the Portugese immigrants who supposedly worked illegaly on the project (cf. D-29). I-3 argues that the situation as depicted in the media did not reflect the actual situation. However, if this would have been the case, then he would have increased spending i.e. reduce emphasis on the efficiency goal to become more equitable. Furthermore, the interviewee emphasizes that in this project, his role was not only conditioning (e.g. areal acquisition, making an inventory of the underground infrastructure inventory) and guiding the tender process, but especially communication with surrounding stake- and shareholders. Collectively, the liason officer was responsible for establishing the demands for the infrastructure object (cf. Figure 4.4 regarding demands and ambitions). In doing so, he underlines the large degree to which this has taken place. Given the more explicit role of the area-developer of the municipality, he states that it is that organization that was more responsible for the equity dimension than Rijkswaterstaat was, although he certainly took into account issues of equity concerns and made sure that they were put on the agenda of the area-developer.

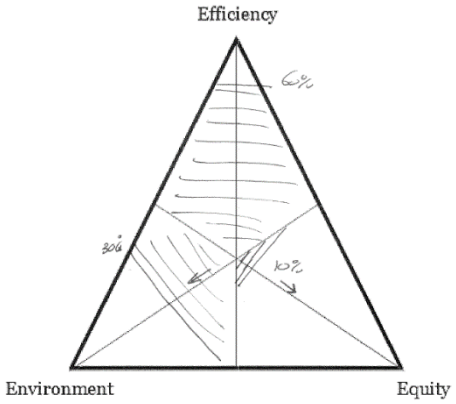

Figure 4.16: Rietveldian assesment of A2 for Regional RWS by I-3

The province's perspective

Thirdly, the provincial liason officer (I-4) indicated that the provincial goal set is distinctive by putting an especially big emphasis on the equity dimension, rather than on efficiency or environment. Equity meant for I-4 ensuring liveability issues *around* Maastricht, especially in de neighbouring villages of Amby and Rothem. Moreover, concerns of cities further away from Maastricht such as Eijsden, Wittum, and Margraten

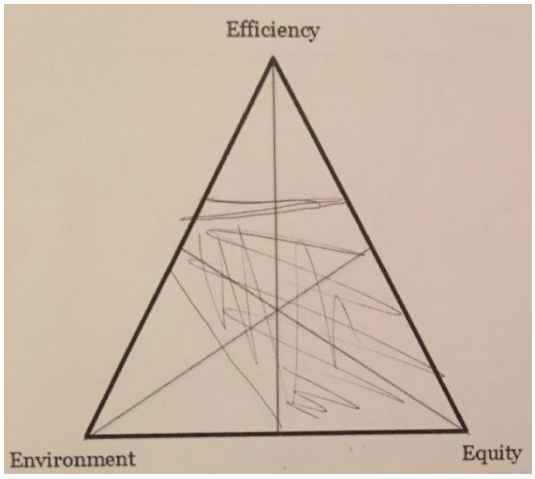

Figure 4.17: Rietveldian assesment of A2 for the province of Limburg by I-4

were also assessed by the province but given the distance the tapering effect was too little to incorporate liveability concerns of those cities also under the *equity* dimension goals of Maastricht. The cutthrough traffic of the A79 to the A2 highway put severe stress on the traffic safety within Amby and Rothem. However, I-4 argued that there was no viable road infrastructure alternative for this traffic: the road system was not properly robust[60]. Consequently, I-4 indicated that the province maintend a focus on the regional area rather than on the road infrastructure, although the object of the project mainly concerned road infrastructure. Another example of an equity goal was a cyclingtunnel that the province insisted that would be erected even though this was not in the ratified plan of the Avenue2 (cf http://www.a2maastricht.nl/nl/mijlpalen/page_nieuws.aspx?id=2527). Indeed, the province contributed additional financial means to this tunnel and is therefore not regarded as an efficiency goal (I-4). Besides, I-4 argued that RWS primarily maintained focus on the efficiency dimension; the municipality of Maastricht primarily mainted focus on environmental issues.

The municipality's perspective

Finally, the municipal area-developer (I-6) indicated that the goal set of the project shifted over time, and that especially the municipal goal set was represented in these later stages of the project. Whereas the *project orginally* focussed on efficiency and environmental dimensions, the project *shifts towards equity* valuations as the project moves towards the phase of area-development. He regards the work of creating opportunities for the environment and also the embedding of the park as these equity goals. However, he insisted that it is impossible to start the project with a dominant weight on equity if the traffic problem is not addressed first because of the contracter that has a private concern to make money. Then, I-6 indicates that concerns for the environment are embedded in a two-step method. First, there are the legal, protective standards and the environmental legal demands regarding the buildingplan. That was a bare minimum that any contractor must uphold. However, it was up to the contractors to design how they are going to do so. When they came up with innovative ideas to do so in a more innovative way, they were able to get a higher valuation of their plan alternative. For example, between a set of flats and the highway a sound barrier was to be erected. A contractor however suggested that if the flats that were already nearing the end of their depreciation period were demolished, replaced, and a nice park completed with a pond would function as a tapering effect zone to diminish the noise effects, then the overall spatial quality would increase. In doing so, I-6 argued that the valuation scheme he contributed to erecting, was especially sensitive for environmental concerns. An example of the

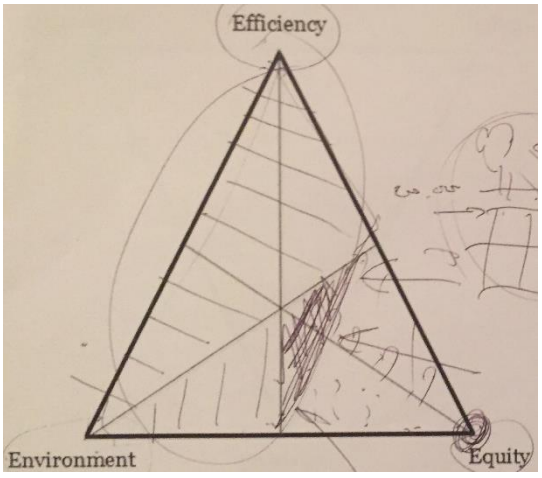

Figure 4.18: Rietveldian assesment of A2 for the municipality of Maastricht by I-6

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[60] I-4 indicated that robustness meant a triangle structure of highways, in this case the A2, A76 and A79. Since the A2 project also comprised better adjustment of the A2 and A79 interconnection, the robustness of the network increased.

equity dimension is the spatial integration as indicated in the previous section regarding the alignment of redevelopment of the Albert Heijn, the municipal flat and the to be created park to stimulate the east-west interconnections of the area. Another important equity example is the A2-school, as mentioned already in the case-description. The collaboration of the municipality with RWS made this programme possible. The regional RWS agency insists that this was made explictely possible due to the municipality (I-3; http://www.a2maastricht.nl/nl/mijlpalen/page_nieuws.aspx?id=638). Finally, I-6 indicated that the more efficient the project is contracted, the more opportunities can be created for the area. Indeed, it seems that although efficiency is dominant before the area-development takes place, the municipality stresses the importance of the equity dimension: 'The A2 has never been a project with a tunnel als ultimate goal, but a tunnel as *a means* to increase liveability within the area of Maastricht'[61].

4.5.4 Preliminary conclusions regarding transport goals

Here, the second sub question '*how can the justice conception be connected to the road infrastructure area-based approaches"* will be answered from the perspective of transport goals. Arguably, the case study points out 1) specific characteristics regarding the various transport goals as based on Table 3-1, and 2) general goal remarks.

Efficiency

First, three conclusions may be connected to the efficiency goals of A2 Maastricht:

1) Efficiency goals appear to be especially dominant in front-end stages of the planning process. The National Market and Capacity Analysis especially ensures so.

2) Efficiency goals are considered to have to be the most dominant in front-end phases to ensure achievement of other goals (cf. I-5 & I-6).

3) Efficiency goals appear to be the most important goal for the RWS actors.

Environment

Second, three conclusions may be connected to environmental goals of A2 Maastricht:

1) Environmental goals appear to be an especial concern of the RWS national agency and for the municipality, but from different perspectives. The RWS national agency seems to be especially concerned with the living up to legal environmental standards according; the municipality seems to be especially concerned with the spatial quality that environmental goals add

2) Environmental goals are ascribed to the municipality: both RWS regional and the province stated that especially the municipality assessed environmental concerns.

3) Environmental goals appear to be self-explanatory: the interview data points out that for all actors' environmental goals' minima are set in stone and are just something that has to be done.

[61] In Dutch: is nooit een project geweest met de tunnel als ultieme doel, maar de tunnel als middel om de leefbaarheid van het gebied te verbeterne.

Equity

Third, three conclusions may be connected to equity goals of A2 Maastricht:

1) Equity goals appear to be especially important for the province and the municipality. The exact meaning of equity is however quite different, which seems to follow from the administrative boundaries of the respective actors' spatial demarcation.

2) Equity goals appear to become increasingly important *over time*, at least for the municipality. According to the municipal area-developer, the reason is that the efficiency and environment goals provide the opportunities for the equity goals and not the other way around.

3) Equity goals are differently interpreted by RWS national than other actors. For them, equity means that no project is given an unfair advantage over another.

General Remarks Regarding Transport Goals

Based on these conclusions, four final remarks regarding transport goals are in order. First, although the goal set of all actors are different, all actors consider *the project as a whole* as adhering to a goal set in which all goals are valued equally. Second, although the critical perspective on area-based approaches and the spatial context of the area-based approaches may cause participation solely based on efficiency reasons, the heavy weight attached to the equity dimension by especially provincial and municipal parties suggest that the equity goal does not solely serve the efficiency dimension. Third, the reason that the national RWS actor considers the project to be balanced is different from all other actors, as he reasons from a perspective of organizational role division (the Integrated ProjectManagement model). Potentially, this style of reasoning is highly interrelated with the earlier argued for contractarian perception of justice. Finally, regarding temporal dynamics and in concordance with the notion of I-1 regarding goal shifts over time, it indeed seems that whereas the efficiency goal is especially important in front-end phases of the planning process, the equity goal is especially important in later phases of the planning process.

4.6 Discussing Integrating Area-Based Approaches, Justice, and Multi-Dimensional Transport Planning: the Maastricht Case

4.6.1 Introduction

This section discusses the influence of justice on area-based approaches through its integration scopes and transport goals (cf. Figure 2.17). Most importantly, this sub chapter will answer the main research question "*what are the implications of the justice concept for area-based approaches in road infrastructure planning and how can area-based approaches take these notions of justice into account in Dutch road infrastructure planning practice?*" Therefore, first the relation between justice and the transport goals will be discussed. Then, the relation between justice and the integration scopes will be discussed (cf. the analytical framework Table 2-4).

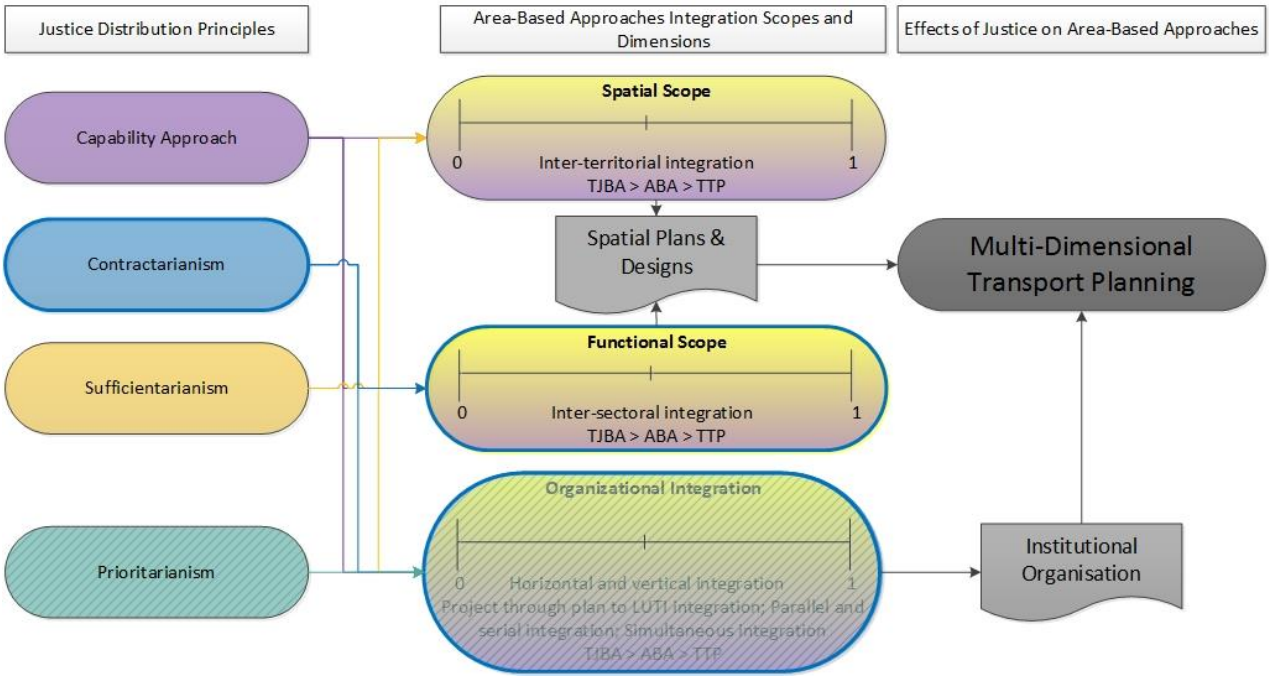

Figure 2.17: Conceptual model of justice on area-based approaches

4.6.2 Integrating justice and transport goals in Maastricht

In this sub section, first the results on transport goals are restated. The results were reached by comparing the goals of the actors with their respective justice perspectives. The results with a clear relation between the two are presented.

Transport Goals

The interviewdata suggest that the practitioners all together consider Figure 4.19.2 to best reflect the goals of A2 Maastricht. The goal set further differs throughout time, as before the planning project started in 1999, it was best valued as not being sufficiently economically important, i.e. Figure 2.14.1. Whereas in earlier stages of the project, the goal set had yet to start to adress equity concerns, i.e. Figure 2.14.3. The question then rises whether an appropriate reflection of area-based approaches is then not best provided by Figure 2.14.4.

Moreover, what stands out is that the justice perspective of the goal set, visualised by 2.14.5, does not occur within that goal set transition. However, the goal set as understood by the province does resemble this situation. The question rises whether their perceptions of justice also most closely resemble the concept of transport justice.

Furthermore, if transport justice indeed requires a goal set similar as 2.14.5, then the focus on efficiency should shift towards equity, i.e. utilitarianism must be rejected more explictely.

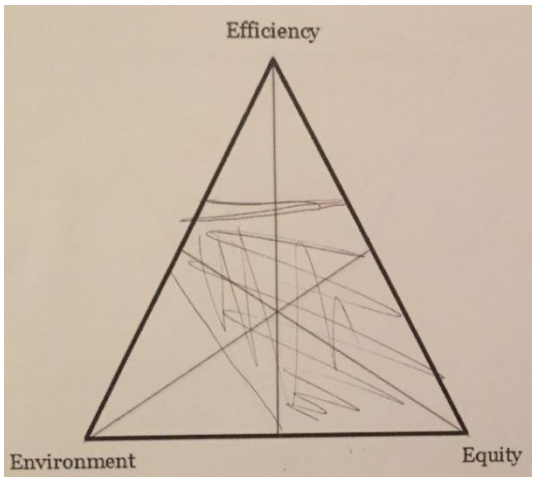

Figure 4.17 (repeated): Rietveldian assesment of A2 for the province of Limburg by I-4

Justice

Six comparisons on transport goals and justice showed clear relations (cf. Table 3-1). The interviewdata suggest that the practitioners all together consider all concepts of justice, albeit with varying prevelance. First, contractarianism and the non-rejection of utilitarianism are especially discernible with the national RWS agency and their efficiency goal. This can be problematic for matters of social or transport justice, because this potentially reinvigorates the goal set as visualed in Figure 2.14.1 in front-end phases of road infrastructure planning: a valuation of an efficiency perspective is what the NMCA does (I-5), and is thus strengthend by contractarianism. Moreover, utilitarianism views this perspective as the most justified perspective. Consequently, it may be argued that the justice perceptions of RWS reinvigorate a non-transport justice goal set.

Furthermore, a non-transport justice goal set might be hard to change due to the temporal distribution of the goal set and the justice perception of the dominant actor involved in changing this goal set. As argued in section 2.2.3, transport justice requires equity concerns at the front-end of the planning process instead of efficiency concercs (cf. Appendix IV_B). However, as the interview data suggest that efficiency concerns are indeed the main goals at the front end of the planning process, and arguably those concerns are judged from a contractarian perspective, the goal set might be even harder to change towards a transport justice perspective.

Next, it is interesting to discuss the relation of the province's goal set and their perspective of justice given the overlap of the theorised transport justice's goal set and the province's goal set. The interviewee data suggested that the province might adhere to sufficientarian and prioritarian concerns, but it didn't' reveal contractarian, capabilitarian or utilitarian concerns. Then, the resemblance is striking as transport justice *primarily* builds on sufficientarian, prioritarian and capabilitarian approaches. Consequently, a sense of wonder occurs whether this means if the province is the most appropriate organisation to bring issues of transport justice in contemporary road infrastructure planning. Two arguments may be made in this regard.

First, the province may indeed be the best given their spatial scope. Since accessibility deficits, transport deprivation or transport-related social exclusion occur on larger scales, than the province is a more appropriate organisation to incorporate these concerns than a municipality. Indeed, the data suggests that the municipality of Maastricht does not adhere to sufficientarian concerns. Moreover, the larger scale alternative of RWS is not feasible given their contractarian perspective. Secondly, the province may not be the perfect organisation for addressing transport, as the data did not suggest that capabilitarian concerns were adhered to.

Moreover, if equity goals are indeed adhered to in the final stages of the planning project, it could potentially mean that justice issues related to the capability approach and prioritarianism *also* could occur in later stages of the planning process. The interviewdata however does not support this statement.

Finally, the codes for contractarianism and the environmental goal were often found together. This may suggest that environment builds strongly on contractarianism. The interview data adds that this is indeed the basis for spatial quality as informed by environmental standards, but that a higher spatial quality is intended (cf. Figure 4.4).

4.6.3 Uniting justice and area-based approaches in Maastricht

In this sub section, the influences of the justice distribution principles on the types of integration are elaborated upon (cf. Table 2-4). Again, the variables and attributes of Table 3-1 are discussed. Finally, some general remarks on justice and area-based approaches are mentioned.

Table 2-4 (repeated): Analytical framework of influences of justice on area-based approaches, final

Final comparison		**Integration Types**		
		Spatial-Functional		**Institutional-Organizational**
Justice Principles		Spatial	Functional	Organizational
Distribution principle	Contractarianism			
	Sufficientarianism			
	Capability Approach			
	Prioritarianism			
Net influence	Transport Justice			

Functional Scope

First, the interviewdata suggest that the functional scope of the entire project has increased due to the lower focus on contractarianism: in the paragraph of the municipality's integration scopes (chapter 4.3), it is indicated that the strict responsibility of the municipality and RWS is limited to, but that the focus of the project is on area-development broadens the functions of the

project to a yet-to-be determined degree. However, transport justice seems to require an even further increase in functional scope.

The reason is that the interviewdata suggest that sufficientarianism does not strongly manifest itself in the entire project (except for the province, which is elaborated under the organizational scope). Sufficientarianism would require person-based accessibility measures, whereas it is argued that due to the NMCA the focus of A2 Maastricht is still very much on traffic flow, i.e. place-based accessibility measures. Moreover, person-based measures are difficult to implement in A2 Maastricht as it would they require internal integration, whereas it has been indicated that internal integration only occurs as a consequence of the project rather than as a characteristic of the project. Additionally, the interviewdata does not suggest that sufficientarian issues of voluntary exclusion are considered. This would be required from a transport justice perspective to further interpret whether insufficiency of person-based measures are indeed to be understood as insufficiencies. Therefore, it may be argued that to incorporate notions of sufficientarianism in A2 Maastricht, the functional scope has to increase[62].

Next, the results suggest that the capability approach was visible only to a limited degree, since thinking of vulnerable travel audiences did occur through black spot analyses and slower modes of travel, but not explictely by assessing external environments or specific travel-related impairments. This would coincide with prioritarian concerns on those worst-off. Consequently, it may be argued that transport justice would require a larger functional scope from capabilitarian and prioritarian perspectives.

Finally, since the goal set of the A2 appears to put a lot of emphasis on efficiency in the front-end stages, the above concerns of broadening the functional scope are hampered. Consequently, although transport justice would require a broadening of the functional scope, the goal set and prevailing concepts of justice do not require so.

Spatial Scope

The interviewdata suggest that spatial integration in A2 Maastricht is already larger then traditional road infrastructure planning, but a transport justice perspective would require further enlargement. The first reason is that to meet the increase in the functional scope based on sufficientarian concerns, the spatial scope has to increase consequently. The reason is that the sufficientarian threshold would stretch further than the plan demarcation of the involved municipalities, as the person-based accessibility measures would be subject to the Theory of Fixed Travel Time Budgets (cf. chapter 2.1) which spans larger than intra-municipal boundaries. Indeed, *it may be argued that the spatial scope of area-development is too local for sufficientarian concerns to be incorporated*, even though the lowered contractarian focus has already increased the plan's spatial scope.

Secondly, the capability approach requires assessing external environments, for example carpool communities (cf. Table 3-1). Since the sub chapter on a transport justice-informed

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[62] Moreover, the interviewdata suggest that RWS national agency is not especially concerned with the LUTI effects other than the demand it might execute on the capacity of the to be constructed road infrastructure. Since a transport justice perspective would require so (cf. chapter 2.2.3), the functional scope of RWS national would have to increase as well

functional scope would incorporate these concerns, arguably the spatial scope has to increase even further. If these communities' their gravity-based accessibility measures overlap with the enlarged spatial demarcation, a transport justice perspective would mean that these groups would become stakeholders in the area-based project: their accessibility might be affected by the project. Consequently, an assessment of participatory inclusion based on a capabilitarian informed spatial scope would incorporate these communities, as it not the case now.

Moreover, a remaining aspect of the spatial scope comprises the inside-out or outside-in thinking. For transport justice to be met, the outside-in perspective has to not only occur on the local scale (as is the case now based on the results) but also on this larger spatial scope. Especially capabilitarian and prioritarian concerns will have to be considered on this larger scale for the functional scope to also adhere to a transport justice perspective, since the interviewdata now suggests that capabilitarian and prioritarian concerns are not explicitely discernible in the planning process. Therefore, a transport justice inspired perspective on area-based approaches would require further enlargement of the spatial scope. This will also have consequences for responsibilities under organizational integration.

Organizational Scope

First, it was concluded in chapter 4.3 that the organizational scope comprises a large degree of horizontal and vertical integration i.e. Maastrichtse Model, and participation, i.e. many stake- and shareholders were often consulted both formally and informally. Then, based on the perspective whether transport justice should occur *as a characteristic or as a consequence* of area-based approaches, the organizational scope could either respectively increase or remain the same. The reason is that earlier it was concluded that sufficientarianism does not occur as a characteristic of A2 Maastricht, but potentially as a consequence of the A2 because the further communicates potential accessibility deficits to for example Maastricht Bereikbaar. Consequently, if sufficientarian concerns are included in the functional scope, i.e. transport justice sufficientarianism as characteristic, it would stand to reason to include parties involved in internal integration such as Maastricht Bereikbaar in the organizational scope, i.e. Maastrichtse Model, so that this function is also structurally embedded[63]. However, because the organizational integration in A2 Maastricht already consists of an actor with a regional focus, it may be argued that this concern is already embedded. Therefore, it can then be considered that because of the current organizational integration, sufficientarian concerns are already embedded. Concluding, based on the perception of whether transport justice should occur as a characteristic or as a consequence of the area-based approach, organizational integration has to respectively increase or remain the same in the case of A2 Maastricht.

Moreover, the interviewdata suggest that a contractarian perspective on organizational integration requires an especially large role for the province, as they can assess and are accountable for matters of internal integration. The reason this probably does not apply to the regional RWS agency is that this organization is not responsible for accessibility other than on the main road infrastructure. Consequently, organizational integration does not have to increase, but transport

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[63] Cf. (Zuidema, 2011) on matching structure and function

justice could imply that a shift in relative weight of the vote of the province in the Maastrichtse Model than the other involved actors. Furthermore, a shift in temporal dynamics of organizational integration could also occur in giving a higher relative weight of the vote favouring the province. The reason is that the interviewdata suggests that especially efficiency concerns are dominant in the front-end phases, and because equity concerns are especially discernible for the province. Therefore, front-end sufficientarian concerns could become more powerful in the process by favouring the relative vote of the province over RWS national or the NMCA.

Next, the interviewdata suggests that the capability approach was visible only to a limited degree, since thinking of vulnerable travel audiences did occur through black spot analyses and slower modes of travel, but not explictely by assessing external environments or specific travel-related impairments. Potentially, these external environments could then be included in the organizational integration (either formally or informally) to meet transport justice. Therefore, including a transport justice perspective on area-based approaches would require a larger organizational integration. Alternatively, the organizational integration could remain the same under transport justice when actors able to assess external environments integrate these concerns in their spatial scope. It may be noted that above conclusions apply especially to the case of Maastricht, as it is not necessary that a province upholds these justice or integration perspectives.

General Remarks of Influences of Justice on Area-Based Approaches

First, the interview data regarding the integration scopes (cf. Figure 4.10, Figure 4.11) suggest that it might be a major difference for the RWS actors to increase the spatial and functional integration. The reason is that both the regional and national agencies position the integration scopes at the further ends of the spectra. Moreover, the elaborated-on dynamics reveal that the transport justice alternatives potentially require a shift in front-end phases and main perceptions of justice. Consequently, implementing concerns from transport justice might require major effort and therefore might be extremely difficult.

Second, although the results suggest that in order to include notions of transport justice in area-based approaches, the means to do so are rather limited. Indeed, in Appendix III it is argued that an especially large weakness of sufficientarianism and the capability approach are issues on data availability: it is rather difficult for public bodies to know whether car pool communities exist, or whether people are voluntarily excluded or not. Consequently, the feasibility of including the notions of transport justice is rather limited.

4.6.4 Preliminary conclusions regarding justice and area-based approaches

Based on the results, the main research question "*what are the implications of the justice concept for area-based approaches in road infrastructure planning and how can area-based approaches take these notions of justice into account in Dutch road infrastructure planning practice?"* can be answered.

First, it appears that conceptions of justice differ extensively between the various involved planning practitoners.

Second, it appears that justice concepts of sufficientarianism, the capability approach and prioritarianism are not clearly discernible in contemporary area-based approaches, whereas the concept of transport justice would require so.

Third, to incorporate these concerns, probably a shift in the goal set of area-based approaches from efficiency towards equity should occur. In essence, this would require shifting the prioritization based on the NMCA towards a to be determined accessibility minimum or threshold.

Fourth, to take these notions into account, the analysis of the interviewdata suggest that the spatial and functional scopes should increase to also integrate issues of internal integration, land-use and transport interactions, a more disaggregated definition of the targeted audience (e.g. specific travel-related impaired persons), external environments of those in the planning area (e.g. carpool communities), and arguably and indication of whether people voluntarily chose for lower accessibility levels.

Fifth, the organizational integration only has to change accountability structures or increase only if it is desired that transport justice is met as a characteristic of area-based approaches instead of as a consequence of area-based approaches. Moreover, especially the role of the province is relevant when changing organizational accountability rather than further integrating organizations horizontally or vertically, given 1) the overlap of their goal set with the theorized transport justice's goal set, 2) their regional spatial scope, and 3) their perceptions of justice which partially coincide with those of transport justice.

5 Conclusions

In this chapter the research questions are answered. In doing so, this chapter elaborates on the problems this study intended to further explore and thereby, indications are provided for points of departure of justice in area-based approaches. Mainly, these comprises concerns raised by transport justice regarding road infrastructure planning's utilitarian tendencies and formal and informal institutions that exercabate existing accessibility distributions. Indeed, the conclusions that followed from the goal of exploring the implications of the justice concept for area-based approaches and how these notions of justice can be taken into account in Dutch transport planning practice are outlined below along the lines of first the sub question and then the main question.

5.1 Characteristics of road infrastructure area-based approaches

Sub question 1: *What characteristics differentiate area-based approaches from traditional road infrastructure planning?*

Short sub answer 1: *Distinctive characteristics for area-based approaches are the further degree of integration of functional, spatial, and organizational scopes (Table 2-1).*

Elaboration: First, theoretically the *functional scope* integrates all types of transport, i.e. internal integration and other-than infrastructure-oriented goals by assessing land-use and transport interactions (LUTI). However, in practice internal integration and the exact interaction of to-be developed land-uses interact appear to not necessarily occur, as different actors value the importance of these elements differently. In the case of A2 Maastricht, the results suggest that especially the national RWS agency is concerned with sectorally oriented monofunctionality, whereas the regional RWS agency, province and municipality appear to increasingly integrate the functional scope. Moreover, whereas external integration, i.e. area-development, appears to occur locally *as a characteristic* of the area-based approach, internal integration appears to occur *as a consequence* of the area-based approach, because the province agendizes issues of internal integration to respective agencies. Concluding, the functional integration is arguably larger than traditional road infrastructure planning but allows for further enlargement.

Second, theoretically the *spatial scope* integrates various spatial authorities to a fuzzy, context-dependend degree. Additionally, the spatial scope combines both an inside-out reasoning i.e. thinking from elements of infrastructure to the area, and outside-in reasoning i.e. from the area twoards infrastructure elements is employed. In the A2 Maastricht, it appears that spatial integration is larger than in traditional road infrastructure planning, since it incorporates *local* area demands, desires, and ambitions. However, it does not include *regional* demands, desires, and ambitions. Therefore, the spatial integration appears to be larger than traditional road infrastructure planning but allows for further enlargement.

Third, theoretically the *organizational scope* integrates actors horizontally and vertically, and various process of participation occur. Indeed, in the A2 Maastricht case organizational integration is larger than traditional road infrastructure planning, since the State, the executive office of the Ministery of Infrastructure and Waterworks (formerly Infrastructure & Environment)

Rijkswaterstaat, the Province of Limburg, and the municipalities of Maastricht and Meerssen are united in a collective steering committee where each party regardless of their financial contribution has an equal vote in decision-making processes. This is the so-called "Maastrichtse Model". Moreover, many participatory platforms were consulted, such as A2-neighbourhoods and -company platforms during the process. Additonally, the private parties that were included in the tender process and subsequently made the final design for the A2, were also a crucial enlargement of the organizational scope. Indeed, an important effect of including this parties was enlargement of the spatial scope (cf. Figure 4.5). However, the organizational integration could be even larger by giving the participatory platforms an official vote, by increasing more villages or by including agencies that were excluded due to limitation of the functional scope. Concluding, organizational integration is larger than traditional road infrastructure planning but allows for further enlargement.

Therefore, all three integration scopes are larger in the A2 project than in traditional road infrastructure planning, but all can be further integrated. The implication of this further enlargement is provided when the influences of justice on this enlargement are outlined in section 5.3 and 5.4.

Finally, two *general area-based characteristics* emerged from the interview data, namely 1) all actors indicated that area-based approaches do lead to other spatial infrastructure developments than traditional infrastructure planning, and 2) RWS valued the integration scopes as further integrated than the province and municipality did. Combined, it may be argued that the involvement of local governments, i.e. parties with local knowledge, leads to a more complete perspective on what is in- and excluded in all scopes.

5.2 Main concepts of justice

Sub question 2: *What are the main conceptions of justice in relation to transport?*

Short sub answer 2: *In theory, multiple equalizanda and distribution principles are recognized without distinction regarding dominance or visibility of these principles in various phases of the planning process. In practice especially contractarianism is visible, and utilitarianism is dominant in front-end phases of the planning process which consequently limits the prevelance of other transport justice distribution principles of other actors.*

Elaboration: Distinctive conceptions of justice are their *equalizanda*, i.e. that what is supposed to be equalized and addressed by concepts of justice, and the *distribution principles*, a certain *distributional logic*, discerning how and to what ends a just society distributes various benefits and burdens.

Partial theories of justice recognise different *equalizanda*: 1) social justice focusses on liberties, opportunities, capabilities, and welfare, 2) environmental justice focusses on varying environmental indicators, 3) economic justice focusses on resource allocation and utility, and 4) transport justice focusses on accessibility levels and accompanying biases towards high income groups, dense areas, or the mentally and physically challenged. This study explored *transport justice, which employs concepts of social justice to address shortcomings of economic justice while acknowledging but excluding considerations from environmental justice to address issues of*

transport-related social exclusion and transport deprivation. Transport justice focusses on accessibility levels and accompanying biases towards high income groups, dense areas, or travel-related impaired. The equalizandum of transport justice is accessibility measured by cumulative opportunities measures, gravity-based measures, and doubly constrained accessibility measures. The literature study suggested that transport justice primarily builds on the *distribution principles* (Table 2-2) of sufficientarianism, prioritarianism, the capability approach and contractarianism, and rejects utilitarianism as guiding principle (see chapter 2.2 for elaboration of these principles). However, in practice a *mixture* of conceptions of justice are uphold which *varies over actors and in different phases* of the planning process.

First, *sufficientarianism* does *not* seem to be the *dominant* perspective *in the total* A2 Maastricht project but *is a visible* concern of the *province*. The results do not suggest that either a strict sufficiency threshold is established, or that issues of voluntary lower levels of accessibility are explictely scrutinized in the A2 Maastricht. However, although not explictely mentioned by phrases such as thresholds or minima, the province appears to maintain an overall, regional sufficiency perspective. It appears that sufficientarian concerns do not manifest *in* the area-based approach, but the concerns were present both by supporting the A2 redevelopment and *as a consequence* of involving the province in the A2.

Second, *prioritarianism* is does *not* seem to be the *dominant* conception *in the total* A2 Maastricht project, but *visible to a minor degree for the non-national actors*. The results suggest that prioritarianism may be a concern that occurs *during* construction, rather than a priori or in harsh maxmin criterions. Therefore, the aggregated perspectives of east-west connections and neighbourhoods appear to lead to rejection of prioritarianism as uphold principle of justice.

Third, the *capability approach is visible* to a limited degree in the area-based approach, especially for RWS regional, and *not dominant for the entire A2 project*. The reason is that it does not appear to be the case that external environment's enabling or constraining effects on capabilities are assessed. Moreover, rather than determining specific travel-related impairment that should be taken into account when making transport decision, general traffic safety is assessed through black spot monitors and slower traffic modes.

Fourth, *contractarianism* is probably *not the dominant* perspective in the *total* of the A2 Maastricht, but it *is the dominant perspective for the national road infrastructure agency*. The national RWS agency stressed the importance of meeting various types of agreements, whereas the other involved parties rather saw this as a minimum.

Fifth, whereas transport justice would require rejection of *utilitarianism* as guiding principle of justice, in practice it appears that utilitarian concerns, i.e. traffic flow instead of social justice concerns, *are especially dominant in front-end stages* through the National Market and Capacity Analysis (NMCA) *on a national level* of the planning process. However, the province of Limburg and municipality of Maastricht do appear to reject utilitarianism as guiding justice principle. However, as these parties come into play after the road infrastructure projects have been chosen, *issues of social justice appear to be a corrective rather than prioritizing measure.*

Concluding, in practice a mixture of all perspectives of justice occur. These perspectives vary over actors and phases of the planning process. Especially contractarianism is visible, and utilitarianism is dominant in front-end phases of the planning process. Sufficientarianism,

prioritarianism and the capability approach are visible to a limited degree after the NMCA-inspired front-end phases of the planning process for the regional RWS agency, the province of Limburg and the municipality of Maastricht.

Finally, a general remark that may be attached to justice is that all interviewees indicated that justice was not a matter that was discussed *explictely* at any point in the process. Indeed, all interviewees indicated that they were very curious towards the meaning of 'justice'. One interviewee had a reserved attitude towards the topic, as justice might insinuate that contemporary road infrastructure planning could be injustified. This may indicate that 1) justice is a sensitive topic, 2) that because of this, what the interviewees called 'attending' or 'connotated' status, justice may trigger issues of reactivity, or 3) that justice is not a matter of bureaucracy (Dutch: ambtelijk) but a decision to be made by politics (Dutch: bestuur) or legal agencies (e.g. Council of State). Indeed, all these suggestions were raised by interviewees.

5.3 How transport justice alters area-based approaches

Sub question 3: *How can the justice conception be connected to the road infrastructure area-based approaches?*

Short sub answer 3: *Generally, the results suggest that a shift in the overall goal set of the area-based approach from efficiency towards equity has to occur, and consequently the functional and spatial scope has to increase to incorporate notions of 1) the capability approach and its external environment and travel-related impairment characteristics, 2) sufficientarianism and its sufficiency threshold and voluntary exclusion concern, and 3) prioritarianism and its focus on 'the worst-off' (Table 2-2). Arguably, justice does not require the organizational integration to further increase when concerns of transport justice are triggered as a consequence of the area-based approach rather than as a characteristic.*

Elaboration: A common framework for understanding transport justice and area-based approaches is the goal set of transport policies in which they are embedded. Distinctive goals to assess any transport policy comprise (the trade-off between) efficiency, equity, and environment related goals (Rietveld, 2003). "Transport policies generally aim to improve accessibility and reduce the negative impacts of motorised transport" (Lucas et al., 2016, p.474). However, area-based approaches probably build on a sustainable mobility paradigm (cf. Banister, 2008) and consequently the goal set is then potentially best understood as balancing these three dimensions equally. Two objections that may be made are 1) prevailing policy and decision-making processes still favour efficient economic growth, and 2) ABAs emerged to respond to environmental deficiences (Lee, forthcoming; Struiksma et al., 2008). Next, potentially transport justice requires putting a (much) larger emphasis on the equity dimension, a much lower emphasis on the efficiency dimension, and a little less emphasis on the environment dimension, because 1) transport justice takes equity rather than efficiency issues as a start (Appendix IV_B), 2) the environmental criterion is not valued highly as trade-offs between environmental and transport justice are not the main focus of transport justice. Then, Figure 2.14 (next page) contrasts traditional transport planning (2.14.1) with ABAs (varying from 2.14.2, 2.14.3, and 2.14.4) and TJBAs (2.14.5) in a Rietveldian valuation.

The results suggest that efficiency concerns are especially dominant in front-end stages because of the National Market and Capacity Analysis focus on traffic flow at the start of the planning process. Moreover, efficiency concerns are valued highest by the RWS actors and these actors are very influential during the start of the planning process. Next, environmental concerns appear to be especially looked after by the municipality and RWS national agency, where the former seems to be especially concerned with the spatial quality that environmental goals add, and the latter with living up to legal environmental requirements. Finally, the equity concerns appear to be especially important for the province and the municipality. For the municipality, the equity goal comprises mostly issues involved in the area-development, i.e. end-phases of the planning process. Moreover, the munipality indicated its importance to increase over time. For the province, the equity goal mainly comprised ensuring liveability issues in the various villages surrounding the A2 Maastricht. Finally, although the goal set of all actors are different, all actors consider *the project as a whole* as adhering to a goal set in which all goals are valued equally. The valuation of the province most closely overlaps with the valuation as theorized by transport justice.

Consequently, the results suggest that a shift in the overall goal set of the area-based approach from efficiency towards equity has to occur for transport justice to be taken into account. Then, although the interviewees indicate that they consider the total project to be best reflected by 2.14.2, the dominance of transport planning in early phases of the planning process as visualised by 2.14.1. and consequent constrainment of the equity dimension may indicate that actually the A2 Maastricht is best reflected by 2.14.4. *Therefore, building on the demands of transport justice distribution principles, i.e. building on 2.14.5, may result in bringing 2.14.4 and 2.14.5 together to realise the goal-set of area-based approaches as understood from its underlaying paradigm of sustainable mobility, i.e. 2.14.2.*

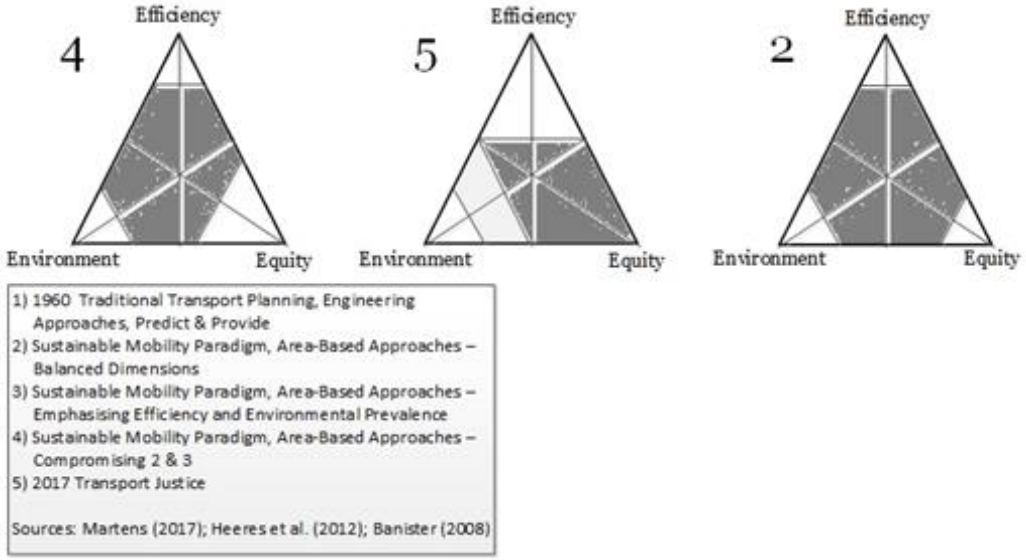

Figure 2.14 (selection): Schematizing transport planning approaches along the dimensions of the trade-off approach and the relative weights attached to those dimensions (own production)

Next, the transport justice distribution principles were compared with demands they seem to put on the various integration scopes, and the current establishment of the scopes and adhered to principles of justice. Subsequently, the influence of justice on area-based approaches is assessed

for the functional, spatial, and organizational scopes. Understanding below dynamics is challenging, since it requires 1) an in-depth understanding of the principles of justice, 2) which vary over actors and time phases of a planning process, 3) under conditions of the Rietveldian valuation, 4) as applied to a specific area-based scope, and 5) as understood in coherence with the other scopes.

First, it may be argued that although the functional scope of the area-based approach is already larger than a line-oriented road infrastructure project, *transport justice requires an even further increase in functional scope*. The first reason is that sufficientarianism would require further internal integration, and person-based rather place-based accessibility measures. Secondly, capabilitarian concerns would have to be included by assessing external environments and specific travel-related impairments. Indeed, this would coincide with prioritarian concerns that stress a focus on those worst-off.

Second, although the spatial scope of the area-based approach is already larger than a line-oriented road infrastructure project, *transport justice arguably requires a further increase in spatial scope*. It may be argued that the spatial scope of area-development is too local for sufficientarian concerns to be incorporated, as the transport deprivation that transport justice attempts to address occurs on a larger-than municipal scale, yet that is where the plan's demarcation ends. Moreover, the assessment of the capabilitarian and prioritarian concerns of the functional scope probably also requires a larger spatial scope, as for example the external environments lie outside of the currently demarcated plan area.

Thirdly, based on the perspective whether transport justice should occur *as a characteristic or as a consequence* of area-based approaches, *a transport justice perspective on the organizational scope requires respectively increasing or maintaining the same scope*. The reason is that earlier it was concluded that sufficientarianism does not occur as a characteristic of A2 Maastricht, but potentially as a consequence of the A2 because the further communicates potential accessibility deficits to for example Maastricht Bereikbaar. Moreover, the interviewdata suggest that a contractarian perspective on organizational integration requires an especially large role for the province, as they can assess and are accountable for matters of internal integration. Consequently, organizational integration does not have to increase, but transport justice could imply that a shift in relative weight of the vote of the province in the Maastrichtse Model than the other involved actors. Furthermore, a shift in temporal dynamics of organizational integration could also occur in giving a higher relative weight of the vote favouring the province. The reason is that the interviewdata suggest that especially efficiency concerns are dominant in the front-end phases, and because equity concerns are especially discernible for the province. Finally, the organizational scope can increase to either formally or informally assess external environments. Alternatively, the organizational integration could remain the same under transport justice when actors able to assess external environments integrate these concerns in their spatial scope. It may be noted that above conclusions apply especially to the case of Maastricht, as it is not necessary that a province upholds these justice or integration perspectives.

Finally, two remarks may be made regarding the influence of justice on transport. First, implementing concerns from transport justice might require major effort and therefore might be extremely difficult, since both the regional and national Rijkswaterstaat agencies position the

integration scopes at the further ends of the spectra. Moreover, especially a shift in justice has to occur in the front-end phases of planning, and it may be argued that a shift in perception of justice is not achieved easily. Secondly, the feasibility of including notions of transport justice may be rather limited, as the data availability on sufficientarian and capabilitarian concerns, e.g. existence of car pool communities and voluntary exclusion, may be rather limited.

5.4 Overall conclusion

Main research question: *What are the implications of the justice concept for area-based approaches in road infrastructure planning and how can area-based approaches take these notions of justice into account in Dutch road infrastructure planning practice?*

It may be argued that especially contractarianism is discernible, and utilitarianism is dominant in front-end phases of the planning process which consequently limits the prevelance of other transport justice distribution principles of other than national actors. Generally, a shift in the overall goal set of the area-based approach from efficiency towards equity has to occur to incorporate notions of transport justice. Alternatively, notions of transport justice can be build upon in area-based approaches to come to a more balanced infrastructure development of its efficiency, environment and equity dimensions. In both situations, the functional and spatial scope has to increase to incorporate notions of 1) the capability approach and its external environment and travel-related impairment characteristics, 2) sufficientarianism and its sufficiency threshold and voluntary exclusion concern, and 3) prioritarianism and its focus on 'the worst-off'. The implication of this integration increase would be requirement of respectively:

1) Identification of inhabitants in the plan area who rely on each other for transport, identification of individual inhabitants in the plan area who suffer severe travel-related impairments, and an assessment of how the planning process influences or should influence these inhabitants;

2) Identification of a minimum level of accessibility, identification of inhabitants in the plan area who experience accessibility levels below this minimum, and an assessment of how the planning process influences or should influence these inhabitants refined for those inhabitants who voluntarily suffer accessibility levels below that minimum, and;

3) An absolute prioritization ranking of all those inhabitants that were identified through the above described mechanisms and how the planning process should affect these inhabitants.

Finally, transport justice arguably does not require the organizational integration to further increase when concerns of transport justice are triggered as a consequence of the area-based approach rather than as a characteristic. The reason is that the current organizational integration allows the province to initiate processes that adress matters of internal integration and potential (consequent) accessibility deficits. Since transport justice requires that internal integration and accessibility deficits are assessed, this requirement of transport justice is met. However, since the province is not required in the area-based approach to assess these matters, these concerns of transport justice are met as a consequence of the area-based approach instead of as a characteristic. Therefore, if it is desired that the above concerns are met as a characteristic of the area-based approach, then assessment of internal integration and accessibility deficits must become a goal or

requirement of area-based approaches (i.e. enlarge functional integration), or the transport actors now directly responsible for these matters must formally participate in the area-based approach (i.e. enlarge organizational integration).

The above conclusions apply especially to the A2 Maastricht. Below, issues of generalization and other influences on the quality of data are discussed.

5.5 Limitations, future research, and recommendations

5.5.1 Quality of data – collection and analysis

Seven remarks may be made regarding the limitations of this study. First, regarding data collection, the pilot testing and expert consultation only occurred for the area-based elements of this study. The insights regarding justice could have been more thorough when also experts in the field of justice were consulted a priori. Second, the practitioners that were consulted are all public agency actors, and few interviews were conducted. The former may stand to reason as these were the actors in the board of directors (Dutch: stuurgroep). The latter is partially compensated for in impact since all practitioners were involved in the A2 Maastricht for over a decade and can therefore be considered very knowledge on the study topic. However, other parties also have had significant influence on the project, such as the designer of the winning consortium the Groene Loper, and the participatory platforms. Therefore, quality of the study could increase by increasing the amount of data collected.

Third, in the interview with I-5 it was tougher to build rapport than in the other interviews. It felt as if the interviewee thought he had to defend why the A2 Maastricht and other road infrastructure planning projects were justified, rather than to discover on which principles of justice the project is based, and which principles of justice his organization upholds. Consequently, the defensive atmosphere could have negatively affected the openness and accuracy of the collected data.

Fourth, whereas the validity is a strength of the extended case method (cf. chapter 3.1), the operationalization of justice concepts proved rather difficult. Not only is this due to the highly abstract nature of the political philosophical literature of which justice originates, it is also because the interviewees all indicated that they were unfamiliar with the field of justice. Therefore, whereas internal validity has been assured as much as possible by a priori defining the operationalization of the justice concepts while also seeking *verstehen* (cf. chapter 3.1) through the introduction of these definitions later in the interviews, it may still be that different operationalization leads to a different set of justice concepts. Indeed, to the best of my knowledge, this study is the first to empirically scrutinize perceptions of justice in the road infrastructure planning sector. Consequently, although significant effort has been put into ensuring unambiguous results, the lack of knowledge on justice operationalization may still lead to a degree of ambiguity of the results.

Fifth, seeking aforementioned verstehen has indeed led in the interviews to employ the high degree of flexibility that in-depth interviews provide. Consequently, not all questions were worded exactly the same. For the important issues of defining the concepts after verstehen, e.g. ends of the integration spectra, definitions of the Rietveldian transport dimensions, or examples of the various concepts of justice, the exact same wording was used. In other cases, a slighty different wording may have however led to different interpretation by different interviewees. Although this

may have influenced the direct interview results, the various triangulations (cf. chapter 3.1) should have apprehended significant influence on the overall results.

Sixth, the employed method has important consequences for generalization and transferability of the results. As thus an outlier case is studied which is more likely to produce significant results as the case is more special (Yin, 2013), the added value of the findings will have to be tested in more representative cases first.

Finally, the scope of the study might have to be different to assess issues of (transport) justice in road infrastructure planning. Since the results suggest that especially municipal concerns and arguably area-development concerns are too local of nature to address sufficientarian and capabilitarian issues, it may be required to not assess individual projects but larger transport policy. Then, to understand transport justice in road infrastructure planning, policy and the involved policy-makers would be the units of analysis rather than individual projects. Alternatively, also transport programmes rather than projects could be studied, which also allows for larger-than-local justice concerns to appropriately be addressed.

5.5.2 Further research

Suggestions for further research can be based on the limitations or on the results of the research. Regarding the former, to check for the representativeness of this study, it may be researched if in other road infrastructure projects the same justice related results occur. For example, are efficiency concerns indeed of major importance in front-end stages of the planning process, is the planning process in that stage to a large degree guided by contractarianism, and are sufficientarian, prioritarian and capabilitarian indeed local concerns rather than regional transport planning concerns? This will help to assess whether transport justice indeed occurs as a consequence rather than as a characteristic or preemptive characteristic of road infrastructure planning.

Also regarding the limitations, the A2 Maastricht could be further explored by interviewing the aforementioned excluded parties such as the designer, constructor, or participatory platforms. This may help to better understand the capability approach (e.g. external environment), and sufficientarianism (e.g. voluntary exclusion) in road infrastructure planning practice.

Then, suggestions for further research as based on the results, research could be conducted on the *feasibility* of transport justice-based approaches. Since transport justice especially promotes equity rather than efficiency, critical questions may be directed towards the necessity of these approaches. In essence, the question rises whether transport justice addresses 'the major issues' of road infrastructure planning[64], and whether a trade-off of equity for efficiency is economically viable. Additionally, feasibility research could also be conducted regarding the governance aspect of this shift, since contemporary road infrastructure planning may be characterized as neo-liberal (e.g. Busscher et al., 2014; Lucas, 2012). In that body of thought, a valuation of issues of economic

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[64] For example, the following news article stresses that traffic jams will significantly increase and that consequences of those traffic jams will be severe: https://www.trouw.nl/home/-we-zijn-keihard-op-weg-naar-een-verkeersinfarct-~ae74d768/?lipi=urn:li:page:d_flagship3_feed;CDKoXAWaSmOdZl4m/qfa%20A)

justice, utilitarianism and privatisation may be larger than various issues of social justice, which may inhibit the feasibility of transport-justice approaches.

Moreover, this study was largely inspired by issues of social justice instead of environmental justice. It may however be reasoned that environmental justice issues also influence decision-making in transport justice (Van Wee, 2011). For example, in the USA, reducing car use might improve environmental quality, but may also affect low-income or minority residents more badly than high-income non-minority residents "given the socio-spatial concentration of both within cities across the United States" (Schweitzer & Valenzuela 2004, p.394). This perspective was considered outside of the scope of this study because 1) trade-offs between environmental justice and transport justice are not the main scope of transport justice (cf. chapter 2.2), and 2) including this would require more time than available for the master thesis. However, to inform a complete perspective of justice in road infrastructure planning, research could be conducted to gain this insight.

Finally, this study was demarcated to the integration scopes of area-based approaches and excluded other related concepts of area-based approaches such as top-down and bottom-up interactions, power, responsibility, sense of ownership, and inter-personal skills. Therefore, research on these issues may further shape the understanding the influences of transport justice in area-based approaches.

5.5.3 Recommendations: implications for wider societal and academic debates

Implications for Theory

Based on this study, I suggest four main implications for the wider academic debate on area-based approaches. First, contemporary research on justice and transport planning has been primarily concerned with assessing its distributional rather than procedural elements (e.g. Martens, 2017a; Lucas, 2012; Pereira et al., 2017). Moreover, many articles have been devoted to establishing proper measures in transport planning for establishing equity-corrected accessibility indicators (e.g. Lucas et al., 2016; Rietveld, 2003; Rietveld et al., 2007; Thomopoulos and Grant-Muller, 2013; Wee and Geurs, 2011). However, this study indicates that the procedural element of justice has important implications for planning practice. For example, the temporal and organizational distribution of justice principles, i.e. the front-end dominance of utilitarianism by national road infrastructure agencies, inhibit the distribution principles of transport justice to manifest themselves als prioritizing measures. Instead, justice appears to be some corrective instance after the main elements of the transport project have been determined. For example, although the spatial scope of the A2 Maastricht was enlarged by the consortium Avenue2, the reason to do so was motivated by efficiency concerns: only through a public-private partnership would it be possible to finance the project through real-estate development. Where equity concerns were incorporated, these could only apply to the still local spatial scope of the plan area. This clashes with sufficientarian concerns of transport justice, as it was argued that these have a more regional orientation. Therefore, I suggest that justice in road infrastructure is better understood in explicit temporal-organizational dynamics, instead of a more homogeneous procedural justice or mere distributional justice perspective contemporary transport planning literature appears to portray.

Secondly, and building on the former, this study suggest that justice appeared to be a corrective rather than prioritizing measure. Indeed, this study appears to confirm the notion that the heavy weight on political debates on equity is not reflected by a similar weight of equity in transport valuation (Rietveld, 2003). However, as research on the severity and consequences of transport-related social exclusion is growing, this study adds that area-based approaches especially adress local, mostly within-municipal boundaries concerns of equity. Consequently, a corrective measure may not suffice to adress the severity of transport-related social exclusion. Therefore, I suggest that justice in the road infrastructure planning process requires putting a heavier weight on the equity dimension by not taking justice as a corrective measure but enlarging the spatial scope to make justice function as a prioritizing measure.

Thirdly, this study provides new organizational dynamics regarding land-use and transport interactions (LUTI). Martens (2017a) demonstrated that in multiple Dworkian contractarian transport justice scenarios (cf. chapter 2.2.3) the outcome was that hypothetical citizens either choose to relinquish their constitutive interests, e.g. move house to be able to realise their preferences regarding in- and out of house activities but in doing so leave locally established ties, or to live in hardship, i.e. safeguard constitutive interests but not realise their preferences regarding in- and out of house activities. The exception to this outcome would be that the land-use surrounding this hypothetical citizen would be adapted. However, since land-use changes develop rather slowely (Martens, 2017a; Wegener and Fürst, 1999), this option was quickly regarded as non-existent. Consequently, it may be argued that if transport justice is to be taken into account, not only should LUTI effects as ow they affect traffic flow be taken into account, but also a deeper qualification of the adaptations in land-use should be embraced. Although in the A2 the area-development planning takes these qualifications into account, Rijkswaterstaat explicitely stated that the demand on traffic flow is the only qualification of land-use adapations that is valid to them, as that is what they are responsible and accountable for, not for taking into account other qualifications. Then, in conjunction with the former suggestions regarding temporal-organizational justice dynamics and justice as corrective instead of prioritizing measure, this study suggests that if transport justice is to be considered, then qualifications of LUTI effects as how they constrain or enable constitutive interests are to be taken into account in front-end phases of the planning process to function as prioritizing rather than corrective measure.

Finally, contemporary research on area-based approaches suggest that the spatial scope should incorporate notions of outside-in thinking, and plan-driven integration rather than project-driven integration (Geerlings and Stead, 2003; Heeres et al., 2012b, 2016). Then, if it appears to be unfeasible for justice to function as prioritizing instead of corrective measure, a link can be made regarding this plan-driven dimension. Indeed, it is likely that a pure transport justice approach (cf. Figure 2.14.5) may be unfeasible given the contemporary neo-liberal turn modern planning is subject to (e.g. Busscher et al., 2014; Lucas, 2012). Then, by not focussing on projects per se, but by employing a programme and/ or adaptive oriented planning approach (e.g. (Busscher, 2014), these principles of justice may still be manifested in planning process and be more strongly present than mere corrective measures. Therefore, this study may be interpreted as a plead for adaptive and programme management in road infrastructure planning to increase the feasibility of transport justice approaches.

Recommendations for Road Infrastructure Planning in Area-Based Approaches

Based on this study, I have four main recommendations for road infrastructure planning practice through area-based approaches. First, I recommend that in area-based approaches a provincial actor is given a substantive role. More specifically, this study indicates that in the A2 Maastricht it is a matter of choice whether organizational integration has to increase or remain the same to incorporate notions of transport justice. I argued that the underlying rationale was to either value transport justice *as a consequence* or *as a characteristic* of area-based approaches. The reason this choice can be made at all is because the province was incorporated in the organizational scope of the A2: especially the province valued the Rietveldian equity dimension highly and took sufficientarian concerns into account. Therefore, I suggest that in *any* area-based approach, a provincial actor should be given an important role, since this actor can enable the choice of transport justice as a consequence or characteristic of area-based approaches. This suggestion coincided with Hull's (2008) notion that coordination for transport policy integration is conducted by regional authorities in order to effectively promote transport services.

Secondly, and building on the former, I suggest that road infrastructure planning practitioners discuss notions of justice at the start of the planning process. The reason is that this study underscores the notion that even though transport policies generally aim to to improve accessibility and reduce the negative impacts of motorised transport, different justice conceptions indeed lead to different transport policies (Lucas et al., 2016; Van Wee, 2011). Since this study indicated that the involved actors of the A2 had different justice conceptions, and that because they cooperated a different transport result occurred, I think there is valid reason to discuss various justice conceptions. Moreover, this importance is strengthened by the notion of transport justice as a consequence or as a characteristic of area-based approaches. If the 'as a consequence' approach is chosen, less adapations to the functional scope (e.g. explicit assessment of the elements mentioned in chapter 5.4) may have to be made, but the organizational scope may have to different. If the 'as a characteristic' approach is chosen, then arguably the organizational scope has to account for transport actors involved in the internal integration of the transport and adapations have to be made to the functional scope (again, see chapter 5.4).

Thirdly, if transport justice is to be embedded within national road infrastructure planning, I suggest that front-end planning phases criteria are changed. Elaborating, this study indicated that justice appears to function as a corrective measure instead of a prioritizing measure, mainly because of the contractarian justice stance of RWS that reinvigorates the utilitarian front-end influence of the National Market and Capacity Analysis. Therefore, if transport justice is to be taken as a prioritizing measure, then arguably the National Market and Capacity Analysis has to change its now predominantly efficiency geared value position towards attaching more weight to the equity dimension. Because RWS is an executive agency and is therefore probably not the agency to determine this shift, this recommendation is guided towards the ministery of Infrastructure and Waterworks. A solution could be the nearness (Dutch: nabijheid) concept suggestion as raised by I-5, which thereby considers cumulative opportunity measures in valueing transport projects.

Finally, I suggest that the capabilitarian and prioritarian concerns of assessing external environments and specific travel-related impairments, and focusing on those worst-off are met to incorporate transport justice's functional scope increase. The fairness of this focus as described in

chapter 2.2.3 and Appendix III seem so *fundamentally fair*, that a utilitarian focus on merely increasing traffic flow seems to fall short of this fairness. Especially the argument of compensating for morally arbitrary circumstances such as natural lotteries of conditions in which one is born (e.g. health, intelligence, family) seems so fundamental for justice, that the least that can be expected from contemporary planning is identifying those who suffer under insufficient capabilitarian and prioritarian concerns. This identification can be based on 1) those worst-off before the road infrastructure projects' final design is confirmed, 2) those worst-off under various alternatives of the infrastructure project, and 3) those worst-off under the final design. Under any of these circumstances, I suggest that the advantages and disadvantages of the project benefit those in a capabilitarian sense, i.e., that these persons are positively influenced to be able do what they actually want to achieve.

Epilogue

In this epilogue, I devote some final words of reflection to the learning process of this thesis. I will especially relate the lessons to the learning objectives of the course description of the master thesis.

First, I generally perceive my strength to be in abstract reasoning of theoretically hard-to-grasp concepts. My thesis supervisors' suggestions helped to *focus* my research problem and theoretical framework, since my curiousity would have otherwise still kept me reading entire libraries. However, I think the main lessons I have learned do not concern the phrasing of a research problem, establishing a theoretical framework or applying focus. The most important thing I learned for these two issues apply to basically any point in the research process: I have got to stop reading and start writing a lot earlier in the research process.

Secondly, I think I can improve my methodological knowledge and skill. I especially learned the general importance of methodology rather than having learned specific leassons regarding methodology. It was useful to read about various types of case study design and data triangulation (cf. chapter 3), but these content-wise lessons came rather late due to the time constraint. Moreover, especially the exact construction of the operationalization table really helped me in structuring the results and conclusion sections. Therefore, the main lessons I take from methodology, research strategy, data collection, and data analyses is that I have to work on constructing operationalization of the conceptualization earlier in the process, that I have got to thoroughly think through the data I have to collect to make strongly substantiated statements, and that I have to save much more time to do so than I think that is necessary.

Thirdly, I have a general tendency to be rather extensive or lengthy (on paper). I learned that if I work hard I can reduce half a page of text every two hours without losing a lot of information. This requires me to both safe time for 'killing my darlings', and learn to write more concisely, because 1) this will be an important skill in writing articles, and 2) will better help me get the message of the research across. Indeed, the time constraint that was invoked due to my preference for reading, led to a lengthy thesis. It appears that Pascal's notion in Lettres Provinciales (1657) "If I Had More Time, I Would Have Written a Shorter Letter" is very true.

Fourth, my thesis supervisor suggested that I could learn to listen better, and draw a few more schemes and figures. Regarding the former, although my head is spinning with all sorts of theoretical concepts during a conversation or interview, these are sometimes best safed for later application while trying to be 'a sponge' in the conversation. Regarding the latter, I think this thesis well accounts of my ability of making schemes, and I definitively consider this as something I learned more in.

Lastly, my personal learning objectives of this thesis were to 1) learn about justice in transport planning, 2) learn about concepts of democracy and accountability, and 3) position these in contemporary spatial and transport planning debates. Since one of the main topic of this thesis is justice, I consider the first objective met. A time constrained rendered the second objective unfeasible. Lastly, although the results of this thesis were briefly positioned in broader societal and academic debates (chapter 5), I did make some more schemes and notes of what the implications of

this result may be for overall spatial and transport planning. Therefore, I consider my personal learning objectives met. My new goals are more soft skill based and come from the reflections above: become more concise, learn to better allocate my available time, learn to better structure my documents and reasoning, and learn more about methodology.

I have already employed my preface as a word of thanks to those who had a significant contribution to this thesis. However, gratitude is seldom expressed sufficiently. For anonimisation reasons I stick to the phrase interviewees: Jos, interviewees, Jasper, Jorn, Esther, and my family, thank you so much for all your help, patience, and on-going inspiration.

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Appendices

Appendix I - Abbreviations

ABA:	Area-Based Approach
CBA:	Cost Benefit Analysis
FCO:	Forced Car Ownership
IPM:	Integrated ProjectManagement
LUTI:	Land-Use and Transport Integration
MIRT:	Meerjarenprogramma Infrastructuur, Ruimte en Transport
NMCA:	National Market and Capacity Analysis
SEG:	Social-Economic Group
TD:	Transport Deprivation
TJBA:	Transport Justice-Based Approach
TRSE:	Transport-Related Social Exclusion
TTP:	Traditional Transport Planning
RWS:	Rijkswaterstaat

Appendix II - Index

Sufficientarianism

Trade-off approach

Transport deprivation: Martens, 2017a.

Transport disadvantage: A combination of having no car, poor public transport services, high cost of fares, no information, and fear of crime (Lucas, 2012). Interacts with social disadvantage to transport poverty.

Transport poverty: Direct and indirect cause of the interaction between transport disadvantage and social disadvantage (Lucas, 2012).

Transport-related social exclusion: Suffering reduced quality of life through reduced activities through reduced option value of accessibility through transport poverty

Utilitarianism

Appendix III - Literature Review on Distribution Principles of Justice, Shaping Table 2-8

Social Justice - Egalitarianism

Table 0-1: Justice characteristics – social justice, Rawls' egalitarianism

Justice-Based Approaches - distributive characteristics	Source
Social Justice *Transport Equalizandum = Space-Time Measures Not Based on Actual Behaviour*	*Martens & Golub, 2012*
Social Justice - Rawls' Egalitarianism *Equalizandum = Social Primary Goods*	*Rawls, 1999*
Equal right to primary social goods, i.e. inequality is bad	Martens, 2017a; Van Wee, 2011
Distribution fairness is based on 'honouration over an entire life'	Martens, 2017a
Decisions are made under a veil of ignorance in an original position, meaning that the free, equal, mutually disinterested rational persons, they have no personal, social, historical or contextual knowledge about their situation	Martens, 2017a
The principle of greatest equal liberty, stating that individuals should have as much freedom as possible without infringing freedom of others	Martens, 2017a; Van Wee, 2011; Pereira et al., 2017
The principle of fair equality of opportunity, stating that all individuals must be able to address social and economic inequalities through official positions	Martens, 2017a; Van Wee, 2011; Pereira et al., 2017
The difference principle & maxmin criterion, stating that inequalities are to be adressed to the people in the worst-off position	Martens, 2017a; Van Wee, 2011; Pereira et al., 2017
Rejects argument of expensive tastes	Martens & Golub, 2012

Rawls' Theory of Justice (1999) on egalitarianism is considered as the most prominent theory on social justice: "political philosophers now must either work with Rawls' theory or explain why not" (Nozick 1974, as cited by Martens, 2017a). Rawls builds society's *basic justice structure*, "the unified system of the major political, social and economic institutions that distribute fundamental rights and duties and determine the appropriate distribution of the benefits and burdens of social cooperation" (Ibid., p. 64). This is build towards from an 'original position', an imaginary contract situation where free, equal, mutually disinterested rational persons operate under a '*veil of ignorance*', without personal, social, historical or contextual knowledge about their situation (Van Wee, 2011). This veil prevents pursueing self-interest. Therefore, the basic justice structure will result in *primary social goods*: "things ... a rational man wants whatever else he wants because with more primary goods men can generally be assured in carrying out their intentions and in advancing their ends, whatever these ends may be" (Martens, 2017a)(p.64). Five primary social goods are distinguished (Martens, 2017a)(p.64):

1) A set of basic rights and liberties, including freedom of thought and association, freedom defined by the integrity of the person and so on. 2) Freedom of movement and free choice of occupation against the background of diverse opportunities. 3) Powers and prerogatives of offices and position of responsibility, particularly those in the main political and economic institutions. 4) Income and wealth, understood broadly as all-purpose means for achieving directly or indirectly a wide range of ends, whatever they might be. 5) The social bases of self-respect. These are those aspects of the basic structure that are normally essential if citizens are to have a lively sense of their own worth as moral persons and to be able to realize their highest-order interests and advance their ends with self-confidence.

For justice to be met, primary social goods have to be distributed according to principles of justice that 1) must be *honored over an entire life*, 2) will shape "a society from which no one wants to withdraw, because everyone's fundamental interests are already cared for" (Martens, 2017a)(p.66), and 3) *equally* protects everyone's the vital interests. These principles are:

a) *The principle of greatest equal liberty*: "rules defining individuals' basic rights and liberties ought to apply equally to everyone and individuals should have as much freedom as possible as long as this does not infringe the freedom of others" (Pereira et al. 2017 p.174).
b) Social and economic inequalities must satisfy two conditions: 1) *The principle of fair equality of opportunity*, offices and positions instigating social and economic inequalities are open to all under conditions of fair equality of opportunity, and 2) *the difference principle*, these inequalities are only fair if they benefit the least-advantaged members of society (Martens, 2017; Pereira et al., 2017).

The principle of greatest equal liberty (a) applies to primary social goods 1 and 2, the principle of fair equality of opportunity applies to primary social good 3, and the difference principle applies to primary social good 4. This means for example that a higher level of income cannot by traded off for free choice of occupation.

Rawls' theory is quintessential for egalitarianism because everyone should have *equal* right to primary social goods. Inequalities due to morally arbitrary circumstances such as natural lotteries of conditions in which one is born (e.g. health, intelligence, family) are to be compensated through the difference principle. The difference principle is translated to policy through the *maxmin criterion*, "suggesting that one should choose the policy alternative that maximizes the minimum level of primary goods of the people in the worst-off position" (Pereira et al. 2017, p.175).

Social Justice – Sufficientarianism

Table 0-2: Justice characteristics – social justice, sufficientarianism

Justice-Based Approaches - distributive characteristics	**Source**
Social Justice - Sufficientarianism *Equalizandum = Absolute Inequalities Under a Threshold*	*Axelsen & Nielsen, 2015*
A mininimum threshold to 'having enough'	Axelsen & Nielsen, 2015; Van Wee, 2011
Acknowledges interpersonal preferences and resulting inequalities	Van Wee & Geurs, 2011; Martens, 2017a
Considers arguments of offensive and expensive tastes	Martens & Golub, 2012
Considers (data) problems of interpersonal comparison	Martens, 2017a
Considers arguments of voluntary choice	Kanschik, 2015; Van Wee, 2011

"Sufficientarianism assumes that everybody should be well-off up to a certain minimum threshold" (Van Wee 2011, p.83), "which is 'sufficient' for fulfilling their basic needs and to guarantee their continued wellbeing" (Lucas et al., 2016, p.477), i.e. when everyone has enough. Three accounts of sufficiency exist (Casal, 2007; Nielsen and Axelsen, 2017):

- A positive thesis: It is especially important to bring people above a minimum threshold.
- A negative thesis: Inequalities above the minimum threshold are irrelevant.
- A shift thesis: Inequalities above the threshold are significantly less important.

The latter two theses are rejected by many egalitarians and are distinctively sufficientarian (Axelsen and Nielsen, 2015). Whereas egalitarians focus on differences that are to be equalised,

sufficientarians focus on absolute threshold levels (Martens, 2017; Nielsen & Axelsen, 2017; Van Wee & Geurs, 2011). Consequently, the problem of assessing *interpersonal preferences* occurs in sufficientarianism, which poses four problems: 1) the argument of offensive tastes, and the argument of expensive tastes, 2) the problem of interpersonal comparison, and 3) voluntary versus non-voluntary choices (Martens & Golub, 2012; Martens, 2017a; Van Wee, 2011).

First, the *argument of offensive tastes* states that a person may take satisfaction in discriminating against or limiting the liberty of other people; *the argument of expensive tastes* states that a person with expensive tastes requires more resources to be as happy as someone with low quality consumption satisfaction. Whereas strong egalitarianism rejects 'tastes' differences, sufficientarianism has to assess whether the inequality crosses a sufficiency threshold (Martens & Golub, 2012). Therefore, sufficientarianism is more subject-focussed than egalitarianism.

Secondly, the *problem of interpersonal comparison* holds that the heterogeneity of personal preferences inhibits setting a sufficiency threshold (Martens, 2017a). For example, a starving person might attribute high utility to a small income and therefore considers to be well-off. However, according to the positive thesis, this distribution inequality is not fair because of mere preferential differences, even if this hypothetical person considers to be well-off. Consequently, assessing preferences on relative values for different goods, each person requires a different threshold to be 'well-off'. Then, identifying sufficiency thresholds becomes impossible, simply because this would require too much information on preferences of individuals (Martens, 2017a).

Thirdly, setting sufficiency thresholds is problematic due to *the degree to which choices are voluntary*. However, judging insufficiency does require doing so (Kanschik, 2015). For example, "suppose a person has lived in a rural town since she was born, and suppose over the past two decades the schools, shops and services have all disappeared. Next, imagine another person who moved voluntarily to that same town recently. Both people could face the same levels of accessibility to shops, schools and services (…). Would that make a difference (Van Wee 2011, p.76)?" It may be argued that *voluntary insufficiency* is problematic when a high level of risk is involved. For example, regulations on tapering effects regarding external safety such as explosion risk of neighbouring factory can be seen as ensuring sufficiency thresholds to prevent voluntary choice to extent to unjust distributions of safety (cf. Van Wee 2011 p.138).

Two justice solutions adress these issues: prioritarianism and the capability approach.

Social Justice - Prioritarianism

Table 0-3: Justice characteristics – social justice, prioritarianism

Justice-Based Approaches - distributive characteristics	**Source**
Social Justice - Prioritarianism *Equalizandum = Relative Inequalities Under a Threshold*	*Parfit, 1991*
Benefits matter increasingly more the worse-off someone is	Kanschik, 2015; Arneson, 2000; Crisp, 2003, Parfit, 1991
There is no harsh sufficiency threshold	Van Wee, 2011; Crips, 2003; Martens, 2017a
There are no issues of voluntarity or preferences involved in assessing distirbutive justice	Arneson, 2000
Inequality is not a bad thing in itself	Parfit, 1991

First, *prioritarianism* states that the worse-off one is, the more the benefits matter to that person (Arneson, 2000; Kanschik, 2015; Martens, 2017a; Van Wee, 2011). Prioritarianism distinguishes itself from the difference principle[65] and the negative thesis of sufficientarianism through two conditions: 1) it compares inequalities with absolute levels of welfare, which prevents a situation in which the smallest benefit is given to the smallest number of worst-off at a disproportional largest cost to the largest number of people (Crisp, 2003), and 2) it does not require harsh conditions of setting a sufficiency threshold (Kanschik, 2015; Martens, 2017a). This differs from egalitarians, as an inequality occurring from when a person rises from 99 to 100 would be as relevant as an inequality when a person rises from 9 to 10 for egalitarians (Parfit, 1991)[66]. Moreover, prioritarianism avoids the weaknesses of sufficientarianism because voluntarity and preferences are neglected. Rather priority is measured by an objective scale of well-being, not through comparison (Arneson, 2000)[67]. Finally, prioritarianism neglects the idea that inequality is a bad thing in itself (Parfit, 1991).

Social Justice - the Capability Approach

Table 0-4: Justice characteristics – social justice, capability approach

Justice-Based Approaches - distributive characteristics	**Source**
Social Justice - Capability Approach *Equalizandum = Capabilities*	*Sen, 2009*
The primary focus of justice is on capabilities that enable individuals to act, not income	Sen, 2009; Van Wee, 2011; Martens & Golub, 2012; Nielsen & Axelsen, 2017; Pereira et al., 2017
The external environment (culture/ relative to local preferences) of people matters in determining capability thresholds and in enabling people their threshold	Pereira et al., 2009; Sen, 2009
Multiple capabilities must be taken into consideration to consider a sitution as fair	Axelsen & Nielsen, 2017
Not all capabilities have to be equal, especially for biological and physical human needs, and those related to individual autonomy	Axelsen & Nielsen, 2017
Capabilities cannot be judged in isolation from the capabilities of others. This is especially so for capabilities needed for pursuing ends within a community	Axelsen & Nielsen, 2017

Second, *capability approach* focusses on *capabilities* rather than equality of primary goods or sufficiency (Martens and Golub, 2012; Sen, 2009; Van Wee, 2011). Capabilities are "sets of freedoms and opportunities available for individuals to choose and to act, resulting from (…) a combination of personal abilities and the political, social and economic environment" (Pereira et al., 2017 p.175, based on Nussbaum, 2011). I.e., the capability approach concerns *functionings*: "what people are actually able to do" (Nielsen & Axelsen 2017, p.48). For example, the capability approach stresses what a person can do with an income level, instead of a sufficient income level. Because, in the case of a handicapped person, a sufficiency threshold would likely be set too low since this person would probably require more financial means to achieve similar functionings as a non-handicapped person (Van Wee, 2011). Moreover, the capability approach recognises two influences of *external environments*: 1) it may *structure* the desires for capabilities based on

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[65] Parfit (1991) argues that the difference principle can be seen as an extreme case of prioritarianism (p.35).

[66] I consider the Telic and Deontic forms of prioritarianism as suggested by Parfit outside of scope

[67] I consider the responsibility-catering prioritarianism as suggested by Arneson outside of scope

culturally, context-dependend values, and 2) it *enables* individuals' capabilities through "what the person ends up doing" (Sen, 2009; Pereira et al. 2017, p.176).

Additionally, the capability approach specifies that a positive thesis of sufficientarianism should be uphold for non-positional goods, and a negative thesis for positional goods (Nielsen & Axelsen, 2017). Positional goods are "goods for which the absolute value of the good is affected by how much one has relative to others" (Brighouse & Swift 2006, p.472 as cited by Nielsen & Axelsen, 2017). First, *capabilities which relate to the fundamental interests of a social being, i.e. those capabilities one requires to pursue ends within a community* embrace a positional logic. Examples are the freedom from discrimination and oppression or the capability of enjoying a sufficiently high societal status. Contrasting, *capabilities which relate to biological and physical human needs,* and *capabilities related to fundamental interests of the human agent* embrace a non-positional logic. Examples are respectively health and nourishment, or critical thinking and rational reflection.

The reason that capabilities related to fundamental interests embrace positional goods is that positional goods can push people below the absolute threshold of sufficiency. For example, "giving one group better capabilities for practicing their religion freely or for non-discrimination inevitably carries a message of disrespect and inferiority of status towards those left behind. It leaves them with insufficient capabilities of the relevant kind" (Nielsen & Axelsen, 2017). Moreover, the different distributive logic of positive thesis of the capabilities related to biological and physical human needs is illustrated by health and nourishment: slight inequalities are less problematic when everyone has sufficient health and nourishment, as long as the less benefitted have sufficient.

Finally, Sen (2009) argues that human *agency* is centrally important rather than listing or categorizing capabilities (cf. Nussbaum, 2006; Nielsen & Axelsen, 2017). Both these perspectives emphasise a pluralist account of capabilities rather than a single value that captures complexity of human life. However the issue on data availability to apply these nuances remains unadressed.

Environmental Justice – Intergenerational Justice and Contractarianism

Table 0-5: Justice characteristics – environmental justice

Justice-Based Approaches - distributive characteristics	**Source**
Environmental Justice *Transport Equalizandum = Varying Environmental Indicators and Indicators on Over-Reliance on Car Use*	*Hill & Boxley, 2007; Lucas, 2006*
Environmental Justice - Intergenerational Justice & Contractarianism *Equalizandum = Environmental Benefits and Burdens*	*Hill & Boxley, 2007*
Environmental justice is met when the right to live in and enjoy a clean and healthful environment is adhered to	Agyeman & Evans, 2004
Justice is met depending on whether actions adhere to principles of an agreement	Van Wee, 2011
As with egalitarianism, distribution fairness is based on 'honouration over an entire life'	Van Wee, 2011
Justice is met when thinking of future generations, where the temporal demarcation of future is undefined	Van Wee, 2011
Emphasises uncertainties on needs of future generations and therefore on uncertainties regarding saving rates of equalizanda	Van Wee, 2011
The value of nature is indepedent from the utility that mankind assigns to it - nature has intrinsic value	Stanford Encyclopedia of Philosophy, 2015b

Environmental justice builds strongly on contractarianism and intergenerational justice. Contractarianism states that "whether an action is right or wrong depends on whether it accords with or violates principles that would be the object of an agreement, contract or choice made under certain conditions by members of the moral community" (Darwall, 2003 as cited by Van Wee 2011, p.39); Intergenerational justice[68] emphasises that justice is met when considering interests of future generations, and it is distintictive given its uni-directional dimension: "future generations depend on actions of the current generation, not vice versa" (Van Wee, 2011, p.96). Both contractarianism and intergenerational justice are especially important for environmental issues, since non-renewable sources are important for *current, and* possibly *future* generations.

Moreover, intergenerational justice builds strongly on contractarianism to account for four elements: 1) the time period, 2) the actors, 3) the equalizandum, and 4) the significance of responsibility for the future as compared to the present. Demarcating these elements is challenging because of the *uncertain desires* of future generations regarding non-renewable sources, and the *uncertain effects* of environmental pollution on future generations' abilities (Van Wee, 2011). Moreover, contractarianism is limited because a generation can hardly be hold responsible for consequences that could not be foreseen. Arguably, a focus on communities is the best approach for dealing with uncertain desires because of their transgenerational characteristic (Ibid.).

Finally, saving rates are employed to operationalise when environmental benefits and burdens are properly distributed under conditions of uncertainty. For example, if it is able to develop technologies to produce energy 100% renewably in the year 2100, the saving rate will be different from when this would be the case in the year 2110 (Van Wee, 2011). However, the lack of particular knowledge holds that the 'perfect' demarcation of environmental distribution cannot be found (Stanford Encyclopedia of Philosophy, 2015a). Therefore, the outlined characteristics only assist in establishing a contract that helps meeting intergenerational justice. Additionally, theories other than contractarianism as outlined in previous sections can also be built on (Stanford Encyclopedia of Philosophy, 2015b).

Economic Justice – Utilitarianism

Table 0-6: Justice characteristics – economic justice

Justice-Based Approaches - distributive characteristics	**Source**
Economic Justice *Transport Equalizandum = Infrastructure-Based Measures, Distance Neasures, and Welfare Levels that Persons Derive from Travel or Combined Travel and Activity Participation*	*Martens & Golub, 2012*
Economic Justice - Utilitarianism *Equalizandum = Utility*	*Mill, 1863*
Justice is met when the the undertaken act maximizes the total amount of good for all minus the total amount of bad for all as based on the information available to the agent on the occassion of decision-making	Stanford Encyclopedia of Philosophy, 2014, 2017;
Utility can be summed over all units	Thomopolous, 2009; Van Wee & Geurs, 2011
Utility is the only thing with intrinsic value	Pereira et al., 2009
Everybody's welfare has equal weight, regardless of the content of the preferences or the material situation of the person	Pereira et al., 2009; Nielsen & Axelsen, 2015

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[68] This meta-existence discussion of whether current generations can at all be bound by needs of future generations, i.e. the non-identity problem (Parfit, 1991) is considered out of scope.

Utilitarianism is more *object-oriented and aggregated* than the above theories (Martens, 2017a). Utilitarianism is 'the claim that an act is morally right if (…) that act maximizes the good, that is (…) the total amount of good for all, minus the total amount of the bad for all, is greater than this net amount for any incompatible act available to the agent on that occasion" (Ibid.; cf. Mill, 1863; Stanford Encyclopedia of Philosophy, 2014). Utilitarianism's aim is to maximise the total welfare of an entire society (Thomopolous, 2009). Other important assumptions of utilitarianism are 1) utility is the only thing with intrinsic value, and 2) everybody's welfare and interest has equal weight, regardless of the content of the preferences or the material situation of a person (Pereira et al., 2017). Indeed, utilitarianism considers *any* Pareto improvement as a just situation.

In transport planning, utilitarianism is found most prominently in cost-benefit analysis (CBA), which expresses utility in monetary terms and assumes that *utility can be summed over all units* (Van Wee, 2011). This straight-forward expression of morally right and wrong based on utility calculation makes utilitarianism an attractive theory of justice, especially because of well-developed theoretical soundness, interpretability and communicability, and data requirements (Geurs & Van Wee, 2004; Van Wee & Geurs, 2011).

An important critique to the utilitarian focus on maximizing utility is the insufficient sensibility to the societal distribution of the individuals whose lives are at stake (Nielsen & Axelsen 2015, p.48). Indeed, CBA does not *effectively* report on distribution effects (Geurs & Van Wee, 2004; Van Wee & Geurs, 2011). Other critiques mostly object against utilitarnism's consequentalist nature.

First, utilitarianism prefers an intervention that improves the situation of a rich person by a relative amount over an identical improvement for a poor person, since the total utility is increased more when the rich person's utility is increased. This improvement however may be trivial to the richer person and could be crucial for the poor person. Contrasting other justice theories, utilitarianism is biased towards improving distributions for rich persons. Secondly, when a handicapped person requires more income than a non-handicapped person to transfer to the same amount of utility, then the total utility would decrease as opposed to attributing this increase in utility to the non-handicapped person. Consequently, based on the other theories on justice, the utilitarian perspective is often deemed unfair[69].

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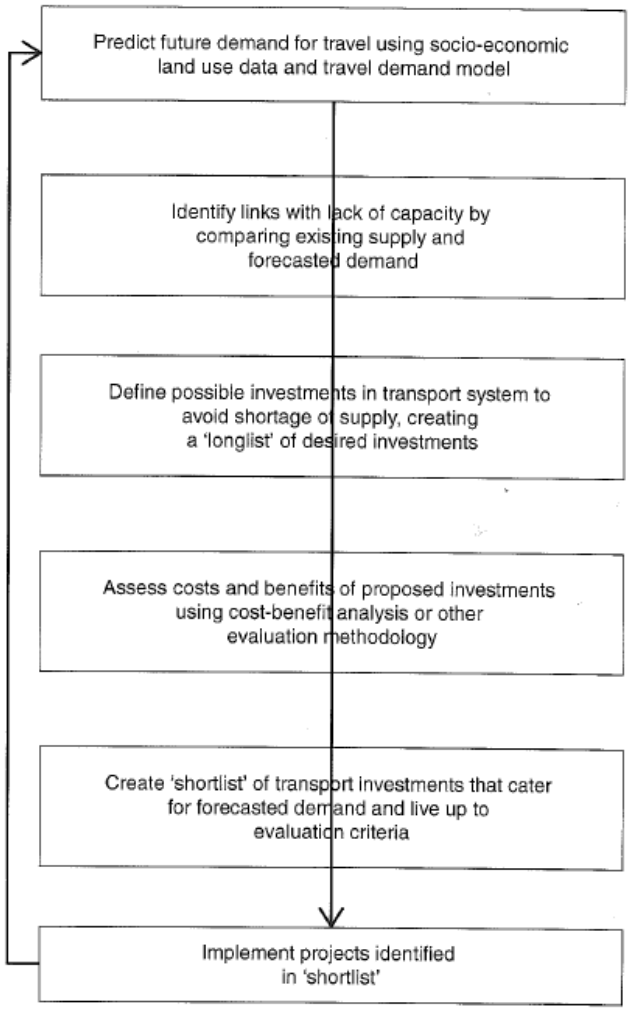
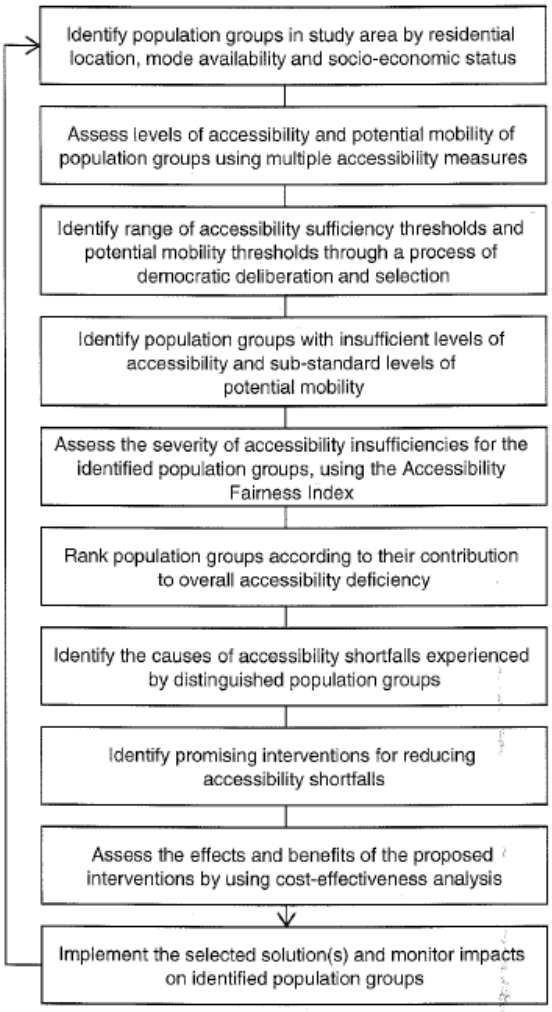
[69] For a complete overview to the critiques of utilitarian and consequentalist approaches, I refer to Van Wee (2011, p.27) and Martens & Golub (2012, p.198 & 199).

Appendix IV – Figures & Tables from Martens 2017a
IV_A: Overviewing Dworkian cases accessibility fairness from contractarianism. Source: Martens 2017a, p.122 & 123

Number	*Pages*	*Title of scenario*	*Description*	*Insurance scheme*
1	91	The basic case	Immigrants bid for a residential location and residence, against the background of a singular transportation system that can be used by all	None; a situation of differential, but fair, accessibility levels will emerge
2	95	Bidding for transportation services	Immigrants bid for various transportation service packages, as the transportation system on the island is not pre-given	None; the auction is likely to result in a limited number of transportation services existing alongside each other, providing differential, but fair, accessibility levels
3	100	Bidding for impairment-proof transportation services	Immigrants bid for various transportation service packages in the understanding that they may be excluded from using these packages in case of travel-related impairments	Depending on circumstances, immigrants may purchase a partially exclusionary, but cheaper, transportation service rather than a fully inclusive service; in the former case, immigrants will also purchase an additional transportation service that guarantees a lower, but sufficient, level of accessibility for members of society excluded from the partially exclusionary transportation service
4	105	Insuring under fair income differentials	In contrast to all previous scenarios, immigrants know that they risk receiving only the floor income once life on the island commences; they can bid for an additional insurance against this risk	Immigrants accept the consequences of a floor income in terms of a lower range of choice regarding residential location; they do not purchase any additional insurance
5	109	Insuring under unfair income differentials	In contrast to the previous scenario, immigrants run the risk of receiving an income well below the floor level once life on the island commences; they can bid for an additional insurance against this risk	Immigrants will purchase an insurance scheme that is either used for in-kind provision of (low-cost) transportation services or for earmarked transportation subsidies to reduce income shortfalls
6	116	Insuring for random location assignment	*Case of insufficient accessibility* In contrast to all previous scenarios, immigrants cannot choose their residential location but run the risk of being allocated a peripheral location with an insufficient level of accessibility; they can bid for insurance to protect themselves against this risk	Immigrants are likely to accept this form of brute bad luck, as insurance schemes guaranteeing sufficient accessibility are expected to be inhibitively expensive; only if the chances of this form of brute bad luck are high, immigrants may purchase an insurance that guarantees some improvements in, but not a sufficient level of, accessibility
7	117	Insuring for random location assignment	*Case of travel-related impairments* In contrast to all previous scenarios, immigrants cannot choose their residential location but run the risk of being allocated a peripheral location providing sufficient accessibility by the dominant transportation mode but insufficient accessibility by the alternative transportation mode accessible for persons with travel-related impairments; the immigrants can bid for insurance to protect themselves against this risk	Depending on the circumstances, notably the wealth in society and the height of the risk, immigrants may either purchase an insurance scheme in order to secure an improvement of the alternative transportation mode, or refrain from purchasing an insurance and accept the consequences of insufficient accessibility, or change their residential location
8	118	Insuring for random location assignment	*Case of inhibitively expensive location rents* In contrast to all previous scenarios, immigrants cannot choose their residential location but run the risk of being allocated a residential location with a sufficient level of accessibility but an inhibitively expensive location rent; the immigrants can bid for insurance to protect themselves against this risk	Immigrants are likely to purchase a location affordability insurance in order to protect their constitutive interests to continue living in their initial residential location

IV_B: Rules of traditional (left) and justice (right) transport planning, source: Martens 2017a, p.23 & 174





Appendix V Complete Interaction Models and Comparison Elimination

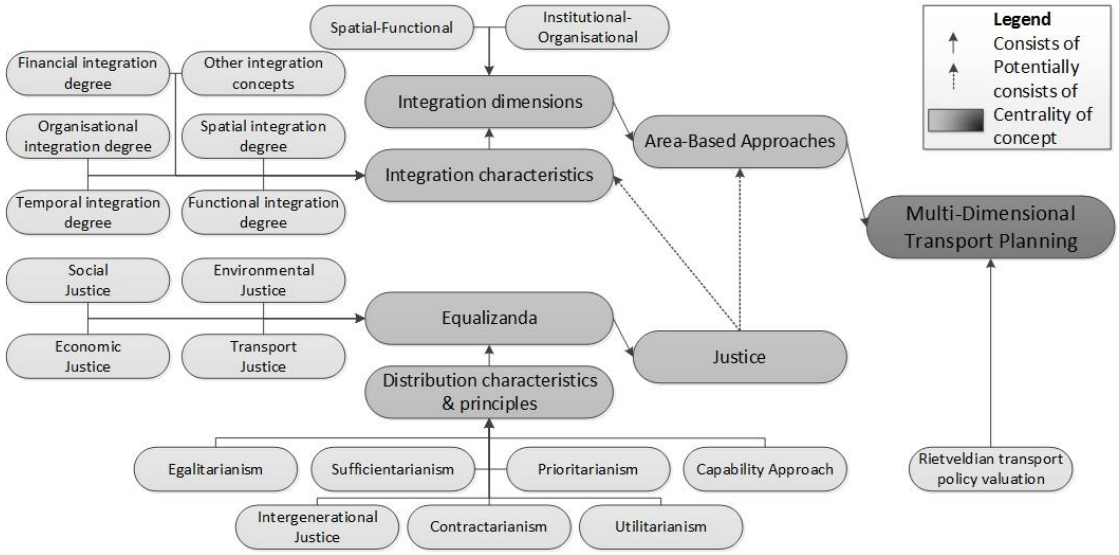


Figure 10b: Interaction model of area-based approaches and justice based on Figures 1.1, 2.6, and Figure **2.10**.

Table 3.2: Analytical framework of influences of justice on area-based approaches, complete

Complete comparison		**Integration Types**					
		Spatial-Functional		**Institutional-Organisational**			
Justice Principles		Spatial	Functional	Organisational	Time	Financial	Other
Equalizandum	Economic Justice						
	Environmental Justice						
	Social Justice						
	Transport Justice						
Distribution principle	Utilitarianism						
	Intergenerational Justice						
	Contractarianism						
	Sufficientarianism						
	Capability Approach						
	Prioritarianism						
	Egalitarianism						

Although Table 3.2 could be elaborated further by capturing the information richness of all the sub tables of Table 2, this analysis, i.e. 66 comparisons, already extends far beyond the scope of this research for various reasons. First, this research intends to scrutinize the influences of *transport* justice on area-based approaches. Other theories of justice have been employed to shape a proper understanding of transport justice. Consequently, now that understanding has been built, these theories can be omitted from this analysis. Therefore, the equalizandum can be limited to that of transport justice. Secondly, a similar argument holds for the distribution principles since I have argued that transport justice primarily builds on contractarianism, sufficientarianism, the capability approach, prioritarianism and some principles of egalitarianism. Subsequently, transport justice can be seen as the resultant of the distribution principles.

Furthermore, making comparisons for all cells does not always make sense. For example, the egalitarian difference principle is basically identical to the prioritarian rule, with exception of the utility assignment distribution curve. However, scrutinizing area-based approaches for prioritarian distribution principles will lead to discovery of egalitarian principles. Moreover, the egalitarian principle of fairness being met when it is fair when 'considered as honouration over a lifetime' will not hold in practice given people their time preferences of having one unit of currency

now rather than the same unit in future years (Van Wee, 2011). Therefore, egalitarianism can be omitted from the analytical framework. Additionally, some single cells do not make sense analyzing.

First, contractarianism and spatial integration. Based on the contractarian principles of transport justice, two questions are to be asked on this relation. 1) How does the principle of brute bad luck affect spatial delineation of a road infrastructure area based approaches?, and 2) is an alternative transport system required to be offered when people are struck increasingly by brute bad luck, and does this affect spatial delineation? Both questions are illogical, as they are functional question rather than a spatial question. Given the close contingency of function and space the question may follow as a consequence, but cannot exist by itself.

Secondly, contractarianism and time integration. Given the concepts introduced in the time section, the questions to be asked are: 1) how does brute bad luck affect parallel and serial integration?, 2) how does brute bad luck affect land-use and transport interactions?, 3) is an alternative transport system required to be offered when people are struck increasingly by brute bad luck, and how does this affect parallel and serial integration?, and 4) is an alternative transport system required to be offered when people are struck increasingly by brute bad luck, and how does this affect land-use and transport interactions. The first two questions will analyzed under the capability approach and functional integration. The latter two questions are both functional questions that follow from a sufficientarian stance as I will argue below.

Third, the capability approach and time integration. Based on capabilitarian principles of transport justice, the questions to be asked on this relation are: 1) how does a focus on enabling individuals to act affect parallel and serial integration?, 2) how does a focus on enabling individuals to act affect land-use and transport interactions?, 3) how do external environments that matter in establishing a capability threshold affect parallel and serial integration?, and 4) how do external environments that matter in establishing a capability threshold affect land-use and transport interactions? The first question's dynamics are more properly addressed through assessing organizational and financial consequences. The second question's land-use and transport interactions are more properly addressed under sufficientarianism, as the lock-in mechanisms for those suffering accessibility deficits is already attended to there. The third and fourth question dimensions of external environments are not issues of time integration, but of functional and organizational integration. For example, this could mean that local transport communities (@source CVS liftpaal) are required to be known for a proper assessment of justice in ABA. Consequently, the functional scope of the ABA regarding its internal integration has to be widened, and potentially organisations have to be widened. For example, if the involved municipalities are not aware of local transport communities, they themselves have to be included. Obviously, making this inventory will take more time. Finally, regarding the fourth question, there is only one situation in which the LUTI could be affected through scrutinizing it from a capability-time perspective. When the improvement in local infrastructure would lead to the redundancy of a local transport community for most of that community, then the worst-off could become even worse-off. This would be a violation of transport justice. Given the highly speculative nature of this concern and that this information will not be addressed during the empirical work of this research given the

time limit of the interviews and prioritization of the other elements, I will not analyze the relation of capability and time.

Moreover, some categories make less sense to analyze. Prioritarianism and all integration dimensions except financial integration are identical to sufficientarianism. This is logical, given the employment of prioritarianism to address the shortcomings of sufficientarianism hard threshold. Consequently, also these dimensions will not be analysed.

Finally, the related concepts or other dimension of ABAs comprise concepts such as top-down and bottom-up interactions, power, responsibility, sense of ownership, and inter-personal skills. As concluded, these issues may well help to establish a proper spatial scale regarding the area-based approach project goals' feasibility (Heeres et al., 2012b). However, the scope of this research is on how justice influences ABAs, not how ABAs is influenced by other concepts. Therefore, the dimensions under the related concept category will not be analysed per se. However, if the topics emerge during analysing the A2 Maastricht case study, they will be included.

Appendix VI – Interview Guides (for list of interviewees, see section 3.3.2)
VI_A: Interview List, Theoretical

	Te bespreken
Intro	
	Dank, opnemen, voorstellen, doel onderzoek (bekende ontwikkeling in transport = gebiedsgerichte benadering en Maastricht A2 bekend goed voorbeeld, nieuwe ontwikkeling is extra aandacht voor justice ofwel rechtvaardigheid en met name transport justice, ik ben benieuwd naar die relatie. Ik wil niet te veel framen wat rechtvaardigheid is, maar als ernaar gevraagd wordt betreft transport justice transport infrastructuur planning met hoofdzakelijk aandacht voor de gebruiker van infrastructuur en de verdeling van kosten en baten bij planning, uitvoering en gebruik van die infrastructuur), benoemen onderdelen interview (transport infrastructuur doelen, ABA, Justice, tesamen).
	Voor Sander, Niels & Frits op zoek naar *theorie check en voorbereiding* vragenvorm voor Maastricht.
Doel	Verkennen wat de opkomst van "transport rechtvaardigheid" betekent voor transport infrastructuur planning, met name voor gebiedsgerichte planning
Onderwerp-clusters	Benoemen (1 = 10 min, 2 = 10 min, 3 = 20 min, 4 = 15 min, 5 = 5 min) en trechteren, mag door elkaar lopen
1. Transport doelen (Rietveld)	Wat zijn volgens u de doelen van transport infrastructuur planning?
(5 - 10m)	En in relatie tot duurzaamheid, hoe ziet u het dan?; Hoe relateren die doelen aan economische, sociale en milieutechnische doelen?
	Presenteer driehoek van Rietveld
	Zijn sommige doelen belangrijker dan andere doelen?
	Wat zijn belangrijke spanningen tussen de doelen van transport infrastructuur planning: 1) economische en milieutechnische doelen; 2) economische en sociale doelen; 3) milieutechnische en sociale doelen?
	Hoe verschillen transport doelen van hoe ze bedacht waren en hoe ze zijn gelopen?
	Inkleuren Rietveld
	Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, snappen zij dan wat ik bedoel?
	Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, ben ik dan volledig/heb ik het belangrijkste i.r.t. transportdoelen?
	Wat kan je mij zelf vertellen hieromtrent in casu A2 Maastricht?
2. Gebiedsgerichte Benadering (10m)	Wat is het doel van gebiedsgerichte benadering in transport infrastructuur planning?
Algemeen	Wat zijn belangrijke kenmerken, doelen en integraties van gebiedsgerichte benadering?
Ruimtelijk	Hoe ver rijkt de ruimtelijke schaal in gebiedsgerichte benadering, en waarom rijkt die zo ver en niet minder ver of verder?
	Welke ruimtelijke schaal(en) is belangrijk in gebiedsgerichte benadering?
Functioneel	Hoe verhouden het hoofdwegennet, het onderliggend wegennet en andere modaliteiten zich tot elkaar in gebiedsgerichte benadering?
	Hou verhoudt het infrastructuurproject zich ten opzichte van andere functies in het gebied in gebiedsgerichte benadering?

Organisatorisch	Wie zijn **doelgroepen** in gebiedsgerichte benadering? Hoe wordt in gebiedsgerichte benadering rekening gehouden met invloeden op land gebruik? In hoeverre worden er verschillende actoiren (niveaus van overheid, private, maatschappelijke, niet transport-experts) betrokken in gebiedsgerichte benadering en waarom? In hoeverre wordt participatie georganiseerd in gebiedsgerichte benadering en waarom? Want alleen weerstand wegnemen of echt ontwerpen?
Overig	Wie zijn doelgroepen in gebiedsgerichte benadering? Hoe verschilt organistorische integratie in **strategische** (e.g. MIRT-overleg) en **operationele** (e.g. ontwerp) fasen in gebiedsgerichte benadering? Wat is er nog meer belangrijk in gebiedsgerichte benadering wat nu nog niet benoemd is / wat is een belangrijke bron over gebiedsgerichte benadering?
Opmaken profiel	Als we deze kenmerken uiteen moeten zetten op een schaal van 0 (volledig gesegregeerd) tot 100 (volledig geintegreerd), kunt u gebiedsgerichte benadering op deze schaal positioneren? **Presenteer schaal**
Controle	Wat betekenen de 0 en de 100 voor u op deze schaal? Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, ben ik dan volledig/heb ik het belangrijkste i.r.t. integratie? Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, snappen zij dan wat ik bedoel? Wat kan je mij zelf vertellen hieromtrent in casu A2 Maastricht?
3.Rechtvaardigheid (20m)	
Algemeen	Wanneer is transport infrastructuur planning eerlijk of rechtvaardig? Wanneer is een gebiedsgerichte benadering eerlijk of rechtvaardig? Is er verschil, en zo ja waarom, zo nee waarom niet? Wat is Justice en transport justice voor u? Waar gaat justice over? (evt. framen: ongelijkheid [ruimtelijke, bereikbaarheid, fysieke beperkingen / vaardigheden]) Is het aanvaardbaar dat sommige doelgroepen zwaarder worden belast of minder profiteren, omdat ze op een ander moment in hun leven meer profiteren op sociaal, milieu, economisch of transport vlak? Gaat het in justice om
Sociaal	Wat betekent justice ten aanzien van sociale doelen (verdeling van alle distributies en processen van transport, en mogelijkheden om daarop te beschermen) in gebiedsgerichte benadering?
Justice theoretisch positionering	Moet iedereen (welke doelgroepen) gelijke bereikbaarheid of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders (equalizandum)
Milieu	Wat betekent rechtvaardigheid ten aanzien van milieudoelen (verdeling milieulasten) in gebiedsgerichte benadering?
Justice theoretisch positionering	Moet iedereen (welke doelgroepen) gelijke milieulasten of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders
Economisch	Wat betekent justice ten aanzien van economische doelen (verdeling richting minst bedeelden) in gebiedsgerichte benadering?

Justice theoretisch positionering	Moet iedereen (welke doelgroepen) gelijke bereikbaarheid of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders
Transport	Wat betekent justice ten aanzien van transportdoelen (verdeling bereikbaarheid) in gebiedsgerichte benadering?
Justicetheoretisch positionering	Moet iedereen (welke doelgroepen) gelijke bereikbaarheid of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders
Controle	Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, ben ik dan volledig/heb ik het belangrijkste i.r.t. integratie?
	Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, snappen zij dan wat ik bedoel?
	Wat kan je mij zelf vertellen hieromtrent in casu A2 Maastricht?
4. Gebiedsgerichte Benadering & Justice (15m)	Is Justice een zinvolle toevoeging? Is transport justice een zinvolle toevoeging? Waarom en hoe? Heeft justice invloed op proces en/of uitkomsten?
Algemeen & principles in ABA	Welke ongelijkheden moeten in gebiedsgerichte benaderingen worden aangepakt? Hoe belangrijk is dat?
	Ongelijkheden kunnen ook ontstaan uit vrijwillige keuze of voorkeuren: hoe belangrijk is het om dan alsnog de ongelijkheid aan te pakken, moet een gebiedsgerichte benadering duidelijk maken of dit het geval is? Hoe belangrijk is het dat er naar nationale sufficiencies wordt gekeken vs. project specifieke suffics?
	Wat doen gebiedsgerichte benaderingen al wel voor justice en wat nog niet?
	Welke aanknopingspunten zijn er voor justice in gebiedsgerichte benadering?
Ruimte & Justice	Welke opvattingen over rechtvaardigheid (gelijkheid, harde ondergrens, capability) zijn belangrijk ten aanzien van ruimtelijke integratie?
Aanvullen schuifjes	Vereist rechtvaardigheid dat de integratie groter of kleiner wordt?
Functie & Justice	Welke opvattingen over rechtvaardigheid (gelijkheid, harde ondergrens, capability) zijn belangrijk ten aanzien van functionele (multi-modaal, multi-layer, multi-doelgroep, lang termijn) integratie?
Aanvullen schuifjes	Vereist rechtvaardigheid dat de integratie groter of kleiner wordt?
Organisatie & Justice	Welke opvattingen over rechtvaardigheid (gelijkheid, harde ondergrens, capability) zijn belangrijk ten aanzien van organisatorische integratie (actoren, participatie, strategisch en operationeel)?
Aanvullen schuifjes	Vereist rechtvaardigheid dat de integratie groter of kleiner wordt?
Interactie integratie & justice	Conflicteren verschillende opvattingen over rechtvaardigheid in gebiedsgerichte benaderingen met het afbakenen van functie, ruimtelijke schaal, of organisatorische integratie?
Vergelijken tussen schuifjes	Zijn er tussen de doelen verschillende opvattingen over wanneer een ongelijkheid eerlijk is? Wat betekent dat?
Vergelijken schuifjes en Rietveld	Verandert transport justice de doelen van transport planning?

Controle	Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, ben ik dan volledig/heb ik het belangrijkste i.r.t. integratie? Indien ik dit zo aan de practitioners rondom de A2 Maastricht wil gaan bevragen, snappen zij dan wat ik bedoel? Wat kan je mij zelf vertellen hieromtrent in casu A2 Maastricht?
Afsluiting	Wilt u nog wat kwijt over de doelen van transport infrastructuur planning, gebiedsgerichte benaderingen, of justice? Wilt u verder nog iets opmerken?
Controleren Justiceprincipen en algemeen samenvatten	Begrijp ik goed dat ….
Einde	Bedanken, resultaten?

VI_B: Interview List, A2 Maastricht

	Te bespreken
Intro	Dank, opnemen, voorstellen, doel onderzoek (bekende ontwikkeling in transport = gebiedsgerichte benadering en Maastricht A2 bekend goed voorbeeld, nieuwe ontwikkeling is extra aandacht voor justice ofwel rechtvaardigheid en met name transport justice, ik ben benieuwd naar die relatie. In het kort: wat betekent TJ en wat kan het betekenen. Ik wil graag onderzoeken wat rechtvaardigheid heeft betekent in het project en daarom niet zelf vooraf definieren wat het is. Maar als aangrijppunt, transport justice gaat over 'wat is een eerlijk transport systeem', 'wanneer zijn verschillen in bereikbaarheid oneerlijk', 'wie zijn de doelgroep van een rechtvaardig transport systeem'), benoemen onderdelen interview (transport infrastructuur doelen, ABA, Justice, tesamen), tijdmanagement Gesprekken gepland met ook Roel Nijsten en Jos Geurts Voor betrokkene A2 op zoek naar zoveel mogelijk *concrete* situaties
Doel	Verkennen wat de opkomst van "transport rechtvaardigheid" betekent voor transportplanning, met name voor gebiedsgerichte planning
Onderwerp clusters	Benoemen (1 = 10 min, 2 = 15 min, 3 = 15 min, 4 = 15 min, 5 = 5 min) en trechteren, mag door elkaar lopen
0. Vragen over Interviewee	Liason officer, verschil met manager gebiedsontwikkeling? Hoe lang al betrokken, in welke fasen van het project?
1. Transport doelen (Rietveld)	Wat is het onderscheid in doelen van gebiedsgerichte en niet-gebiedsgerichte weginfrastructuur planning?
Toepassing in Maastricht	En in relatie tot duurzaamheid, hoe ziet u het dan?; Hoe relateren die doelen aan economische, sociale en milieutechnische doelen? **Presenteer driehoek van Rietveld** Zijn sommige doelen belangrijker dan andere doelen? Hoe verschillen transport doelen van hoe ze bedacht waren en hoe ze zijn gelopen? **Inkleuren Rietveld**
2. Gebiedsgerichte Benadering	Wat zijn belangrijke kenmerken, doelen en integraties van gebiedsgerichte benadering? Mag ik dit project bestempelen als gebiedsgericht?

Ruimtelijk	Hoe ver rijkt de ruimtelijke schaal in Maastricht A2, en waarom rijkt die zo ver en niet minder ver of verder?
	Welke ruimtelijke schaal(en) zijn belangrijk in Maastricht A2?
0 = enkel weg. 100 = (inter)nationaal	Verschilde de ruimtelijke schaal op verschillende momenten in het planproces? **Schuifjes**
Functioneel	Hoe is rekening gehouden met het hoofdwegennet, het onderliggend wegennet en andere modaliteiten zich tot elkaar in Maastricht A2?
	Wie zijn **doelgroepen** in Maastricht A2? Waren er eerder in het planproces anderen overwogen?
	Hoe is er nagedacht over de voor- en nadelen van de verandering van het landgebruik door toedoen van de A2 Maastricht na afronden van het project?
0 = enkel weg. 100 = meenemen alle functies die in een regio spelen	Eerder hadden we het over andere doelen of functies dan transport in Maastricht A2. Werden er eerder in het project meer doelen overwogen om te integreren? **Schuifjes**
Organisatorisch	Waarom werden verschillende actoren (niveaus van overheid, private, maatschappelijke, niet transport-experts)?
	In hoeverre wordt participatie georganiseerd in Maastricht A2 en waarom? Want alleen weerstand wegnemen of echt ontwerpen? Wat kunt u vertellen over sociaal-demografische kenmerken van de participanten?
	Welke belangen legden deze actoren op tafel in relatie tot de functies die werden overwogen en ook tot uiting zijn gekomen in Maastricht A2?
0 = enkel RWS. 100 = alle actoren onderaan Arnstein	Hoe verschilt organistorische integratie in **strategische** (e.g. MIRT-overleg) en **operationele** (e.g. ontwerp) fasen in gebiedsgerichte benadering? **Schuifjes**
Overig	Wat is er nog meer belangrijk in gebiedsgerichte benadering wat nu nog niet benoemd is / wat is een belangrijke bron over gebiedsgerichte benadering?
3. Rechtvaardigheid	Wat verstaat u onder rechtvaardigheid? Is er in het project gesproken over rechtvaardigheid? Is er in het project gesproken over ongelijkheden tussen groepen? Welke ongelijkheden?
Rietveld	Hoe verhouden de in de A2 Maastricht besproken ongelijkheden zich tot de doelen van de driehoek die we eerder hebben besproken?
	Wat betekent transport rechtvaardigheid voor u en in A2 Maastricht? Z
	Hoe verhoudt rechtvaardigheid zoals we dat nu hebben besproken zich tot de doelgroepen zoals eerder besproken?
Sense of Urgency	
	Is er in beeld of er mensen lijden aan transport-gerelateerde sociale exclusie of vervoersarmoede in de zin dat afspraken worden overgeslagen of niet worden nagekomen met als oorzaak transport? Is dit onderwerp van discussie geweest?
Sociaal	Wat betekent justice ten aanzien van sociale doelen (verdeling van alle distributies en processen van transport, en mogelijkheden om daarop te beschermen) in gebiedsgerichte benadering?
Justice theoretisch positionering	Moet iedereen (welke doelgroepen) gelijke bereikbaarheid of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders (equalizandum)

Milieu	Wat betekent rechtvaardigheid ten aanzien van milieudoelen (verdeling milieulasten) in gebiedsgerichte benadering?
Justice theoretisch positionering	Moet iedereen (welke doelgroepen) gelijke milieulasten of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders
Economisch	Wat betekent justice ten aanzien van economische doelen (verdeling richting minst bedeelden) in gebiedsgerichte benadering?
Justice theoretisch positionering	Moet iedereen (welke doelgroepen) gelijke bereikbaarheid of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders
Transport	Wat betekent justice ten aanzien van transportdoelen (verdeling bereikbaarheid) in gebiedsgerichte benadering?
Justice theoretisch positionering	Moet iedereen (welke doelgroepen) gelijke bereikbaarheid of iets anders (equalizandum) gelijk hebben, moet er een soort ondergrens voor bereikbaarheid zijn, nutsmaximalisatie of iets anders
4. Tesamen: Gebiedsgericht en Rechtvaardig	Is Justice een zinvolle toevoeging? Is transport justice een zinvolle toevoeging? Waarom en hoe? Heeft justice invloed op proces en/of uitkomsten?
	Ongelijkheden kunnen ook ontstaan uit vrijwillige keuze of voorkeuren: hoe belangrijk is het om dan alsnog de ongelijkheid aan te pakken, moet een gebiedsgerichte benadering duidelijk maken of dit het geval is? Hoe belangrijk is het dat er naar nationale sufficiencies wordt gekeken vs. project specifieke suffics?
	Wat doen gebiedsgerichte benaderingen al wel voor justice en wat nog niet?
	Welke aanknopingspunten zijn er voor justice in gebiedsgerichte benadering?
Ruimte & Justice	Welke opvattingen over rechtvaardigheid (gelijkheid, harde ondergrens, capability) zijn belangrijk ten aanzien van ruimtelijke integratie?
Aanvullen schuifjes	Vereist rechtvaardigheid dat de integratie groter of kleiner wordt?
Functie & Justice	Welke opvattingen over rechtvaardigheid (gelijkheid, harde ondergrens, capability) zijn belangrijk ten aanzien van functionele (multi-modaal, multi-layer, multi-doelgroep, lang termijn) integratie?
Aanvullen schuifjes	Vereist rechtvaardigheid dat de integratie groter of kleiner wordt?
Organisatie & Justice	Welke opvattingen over rechtvaardigheid (gelijkheid, harde ondergrens, capability) zijn belangrijk ten aanzien van organisatorische integratie (actoren, participatie, strategisch en operationeel)?
Aanvullen schuifjes	Vereist rechtvaardigheid dat de integratie groter of kleiner wordt?
Interactie integratie & justice	Conflicteren verschillende opvattingen over rechtvaardigheid in gebiedsgerichte benaderingen met het afbakenen van functie, ruimtelijke schaal, of organisatorische integratie?
Vergelijken tussen schuifjes	Zijn er tussen de doelen verschillende opvattingen over wanneer een ongelijkheid eerlijk is? Wat betekent dat?
Vergelijken schuifjes en Rietveld	
	Verandert transport justice de doelen van transport planning?

Afsluiting	Terugkoppeling / controleren bevindingen, Wie kan ik verder spreken (zowel betrokken in begin als eind): Projectbureau gebiedsontwikkeling: Jos Geurts Min IenM DG Bereikbaarheid: Roel Nijsten RWS ZN: jou Andere Ministeries? Wie van de Provincie? Wie van de gemeente, moet ik onderscheid Meerssen/Maastricht maken? Actiegroepen? / Belangengroepen bewoners? Aannemer? Verder? Maastricht Bereikbaar? Europa? ProRail?

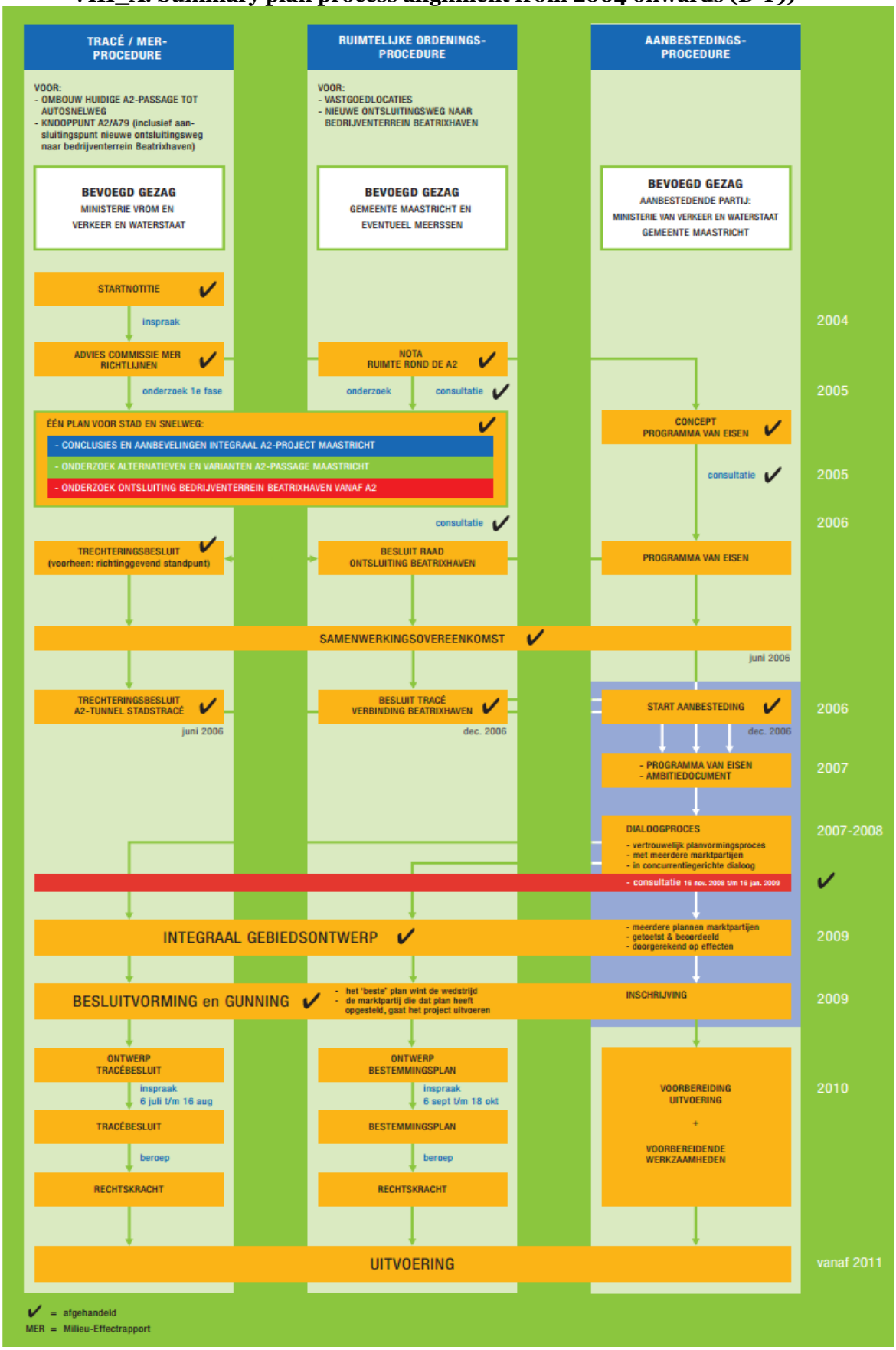
Appendix VII - List of Studied Documents

Nr	Date	Name	Authors	Relevance	Source
Documents created by Projectbureau A2 Maastricht					
D-1	7 Oktober 2015	Mijn gezonde groene loper 2030: Actieprogramma verduurzaming. Beleidsnota project A2 Maastricht	Stuurgroep A2 Maastricht	Indicates area-development various types of integration, e.g. p.20-24, p.52, p.61, and p.67 as indicated in interview with area-developer municipality Maastricht	Projectbureau A2 Maastricht
D-2	November 2017	Mijn gezonde groene loper 2030: Voortgangsrapportage actieprogramma verduurzaming. Beleidsnota project A2 Maastricht	Stuurgroep A2 Maastricht	Indicates first results of participation and 'gebiedsontwikkeling'	Projectbureau A2 Maastricht
D-3	May 2017	Duurzame, gezonde en actieve groene loper - co-design sessie 30 mei 2017 verslag & vervolg	Project-bureau A2 Maastricht	Indicates characteristics of area-development	Projectbureau A2 Maastricht
D-4	1 June 2016	Een plan voor stad & spoor	S.n.	Indicates characteristics of area-development, especially other-than road infrastructure development	Projectbureau A2 Maastricht
D-5	March 2012	Symposiumboekje: Zijn planprocedures anders te plannen? A2 Maastricht: één plan voor stad en snelweg	Project-bureau A2 Maastricht	Indicates switch of spatial scope, indicates original plan RWS and plan of Avenue2	Projectbureau A2 Maastricht
D-19	November 2007	A2 Maastricht: één plan voor stad en snelweg - Summary	Project-bureau A2 Maastricht	Start of involvement of market parties. Also contains nice corridor positioning	Projectbureau A2 Maastricht
D-22	25 June 2009	Definitief plan voor realisatie A2 Maastricht bekend	Project-bureau A2 Maastricht	Official statement announ-cing AvenueA2 as winners and summarising the main elements of their plan 'De Groene Loper'	Projectbureau A2 Maastricht
D26	15 February 2012	Ontwerp-Omgevings-vergunning voor A2-tunnel gepubliceerd	Project-bureau A2 Maastricht	Announcement of design all-in-one physical permit by Strukton containing contents of the permit	Projectbureau A2 Maastricht
D-27	29 March 2013	Hoge Raad verwerpt cassatieberoep laatste eigenaren	Project-bureau A2 Maastricht	Announcement of rejection of appeal on all-in-one-physical permit	Projectbureau A2 Maastricht
D-30	2012	Jaarverslag 2012	Project-bureau A2 Maastricht	Overview of involved parties, finances and roles relating to RWS IPM; Overview planprocedures; amount of participation sessions	Projectbureau A2 Maastricht
D-33	2015	Jaarverslag 2015	Project-bureau A2 Maastricht	Indicates erection of 'Actie-programma mijn gezonde groene loper' to engage on the explored area opportunities; indicates bankruptcy Ballast Nedam	Projectbureau A2 Maastricht
D-32	2016	Jaarverslag 2016	Project-bureau A2 Maastricht	Annual report, stating opening of the tunnel, timeline and total investment in public infrastructure, private investment and private real estate investment, and area-development proceedings	Projectbureau A2 Maastricht
D-20	April2007	De vraag aan de markt: Vraagspecificatie 1; Ambitiedocument	Project-bureau A2 Maastricht	Contains requirements anddesired developments for the 5 key issues before procure-ment (traffic flow, access-ibility, urban development, environment and spatial quality)	Projectbureau A2 Maastricht
Newspaper articles					

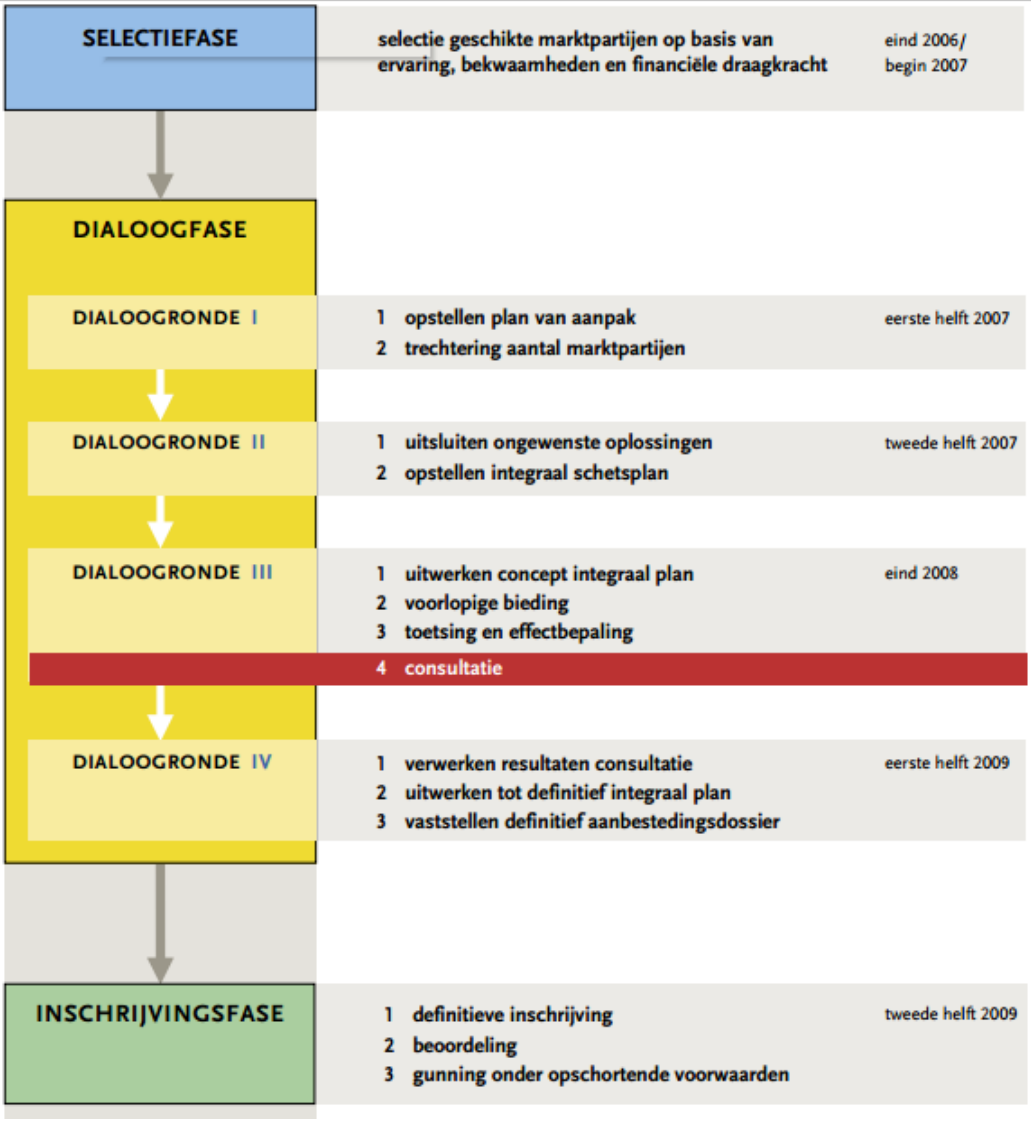
D-6	6 December 2004	Tunnel A2 Maastricht weer ter discussie	ANP	...	Volkskrant
D-7	11 November 2016	Met dubbellaagse tunnel A2 komt einde aan verkeerschaos Maastricht	De Graaf, P.		Volkskrant
D-8	16 December 2016	Bij tunnelmond A2 verbetert veel maar niet de lucht	De Graaf, P.		Volkskrant
D-9	21 Augustus 2017	Filevrij Maastricht dat was de opdracht	Verlaan, J.		NRC Handels- blad
D-10	30 September 2016	Zo ontwerp je een reusachtig verkeersknooppunt	Vis, C.		NRC Handels-blad
D-29	26 September 2013	A2 Actueel: speciale bijlage over A2 Maastricht	De Limburger: Limburgs Dagblad	A.o. elaborates on A2school	De Limburger: Limburgs Dagblad
Environmental Impact Assesment documents					
D-11	1 July 2002	Maastricht raakt de weg kwijt II	Aveco de Bondt	This document put the necessity of an area-based approach of the A2 on the agenda	Netherlands Commission for Environ-mental Assessment
D-12	June 2004	Startnotitie A2-passage Maastricht	Rijks-water-staat directie Limburg	p.10 indicates that this is the start of the trace/m.e.r. procedure	Netherlands Commission for Environ-mental Assessment
D-13	14 April 2006	Eén plan voor stad en snelweg	M.e.r. A2 passage Maas-tricht	EIA of area-based A2 Maastricht	Netherlands Commission for Environ-mental Assessment
Legal documents					
D-14	24 November 2010	Tracébesluit A2 Passage Maastricht Deel I - Besluit	Minstery of Infrastructure and Environment	Contains exact adjustments to road infrastructure	Minstery of Infrastructure and Environ-ment
D-15	24 November 2010	Tracébesluit A2 Passage Maastricht Deel III - Toelichting	Minstery of Infrastructure and Environment	Contains goals of adjustments under part I	Minstery of Infrastructure and Environ-ment
D-16	24 November 2010	Tracébesluit A2 Passage Maastricht Bijlage M bij het TB Nota van antwoord	Minstery of Infrastructure and Environment	Contains participation requests and answers on A2 Maastricht	Minstery of Infrastructure and Environ-ment
D-25	30 November 2011	Uitspraak 201100819/1R4	Raad van State afdeling bestuurs-rechtspraak	Contains objections on the tracebesluit and zoningsplans to the A2, deciding that all objections are rejected	Council of State
D-21	29 June 2006	Samenwerkings-overeenkomst A2-Maastricht	Tweede Kamer der Staten-Generaal	Official collaboration document A2-Maastricht of the board of directors	National Government
Miscellaneous					
D-17	22 April2009	Integraal Plan A2Maastricht Avenue2 - Dialoogronde IV	Avenue2	Contains the plan that won the procurement of the Maastricht A2 project. Contains overview of stakeholders	Avenue2: ConsortiumStrukton & Ballast Nedam
D-18	December 2004	Discussiestuk: Ruimte Rond de A2 - Randvoorwaarden en uitgangspunten ondertunnling A2-Traverse Maastricht	Municipality of Maastricht	Indicates the start of the participation trajectory, and indicates narrow spatial scope and start of broadening of functional scope. Intended as discussion maker	Municipality of Maastricht
D-23	14 December 2010	Vaststelling bestem-mingsplannen project A2 Maastricht	Gemeenteraad Maastricht	Indicates 'zienswijzen' to the concept zoningplans and satisfcation with participation process	Municipality of Maastricht

D-28	05 February 2010	Realisatie A2school in Maastricht grote stap dichterbij	Municipality of Maastricht	Announcement of work-study programme A2school initiated by Avenue2 and the municipality of Maastricht	Municipality of Maastricht
D-31	26 February 2010	Kentekenonderzoek in Maastricht	Maastricht Bereikbaar	Indicates licenseplate research by internally integrated transport coalition Maastricht Bereikbaar	Maastricht Bereikbaar
D-24	14 December 2010	Vaststelling bestem-mingsplannen project A2 Maastricht - Nota van Antwoord	Gemeenteraad Maastricht	Contains reactions to 'ziens-wijzen' of zoningplans	Municipality of Maastricht

Appendix VIII – Figures from Document Analysis
VIII_A: Summary plan process alignment from 2004 onwards (D-19)



VIII_B: Summary competitive dialogue (D-20, p. 64)



VIII_C: Actor constellation A2-Maastricht from 2007 onwards (D-20)

VIII_D: Illustrations of Avenue2's winning design 'De Groene Loper', illustrating plan area with more detail regarding final spatial situation, interconnections between neighbourhoods, and the tunnel solution itself and above the tunnel (D-17)

Huidige situatie: barrière A2

De opgave: tunnel

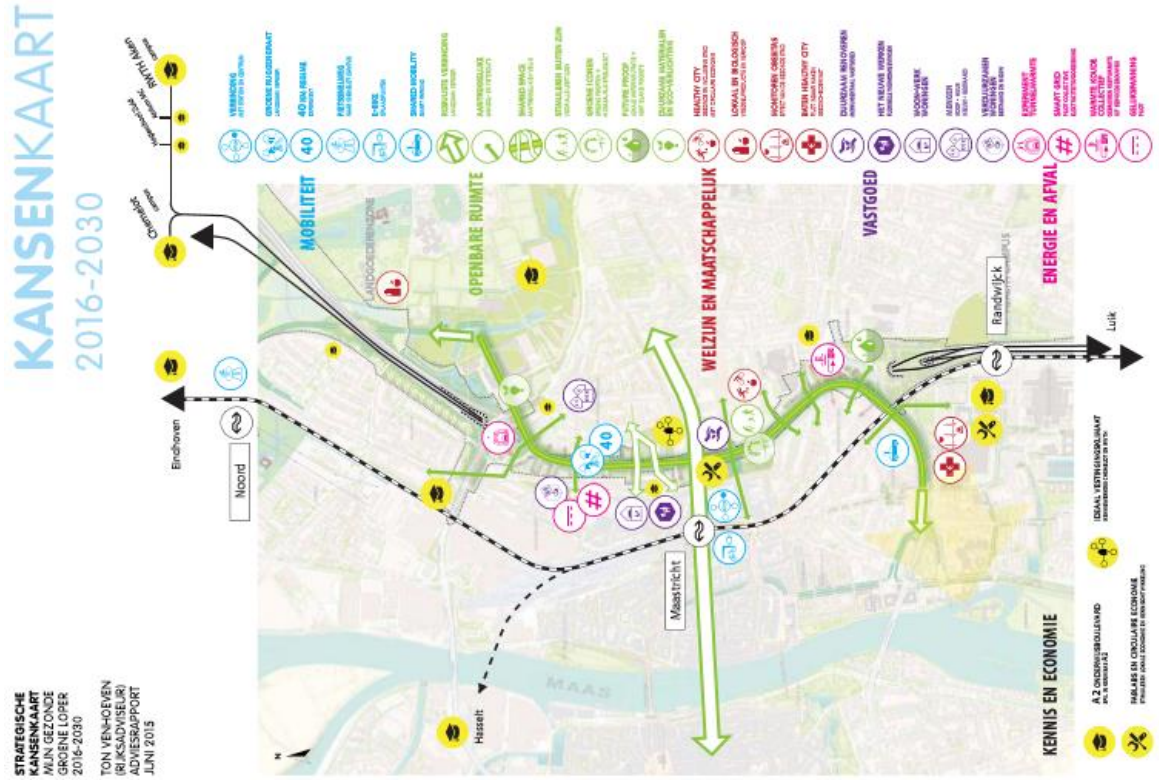
Onze oplossing: een langere tunnel

Onze oplossing: A2 verschoven weg van Nazareth

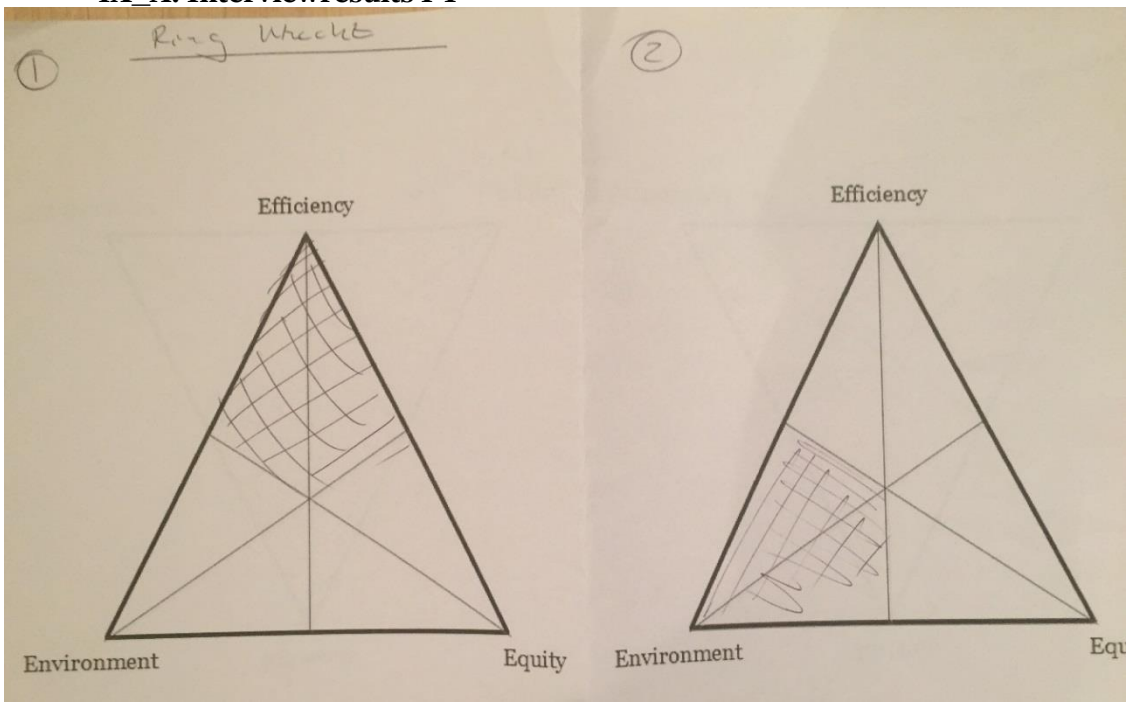
Verbinding tussen wijken en stadsdelen

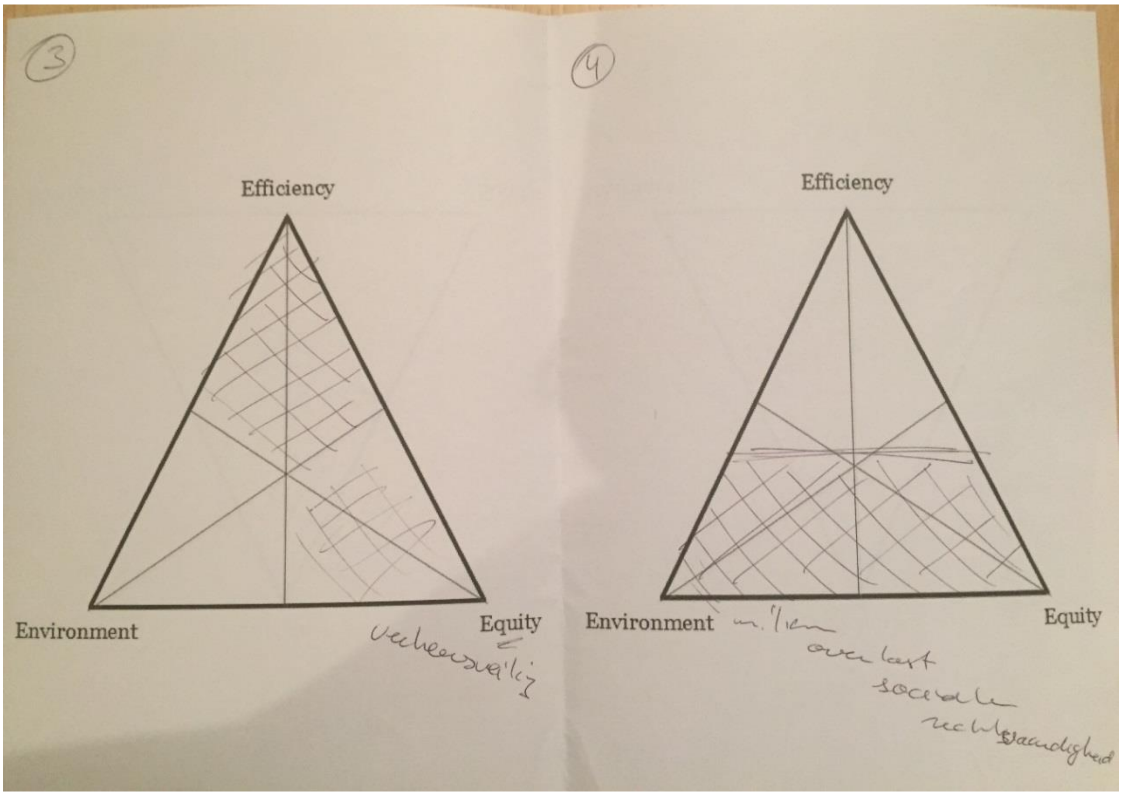
Helen van Maastricht-Oost

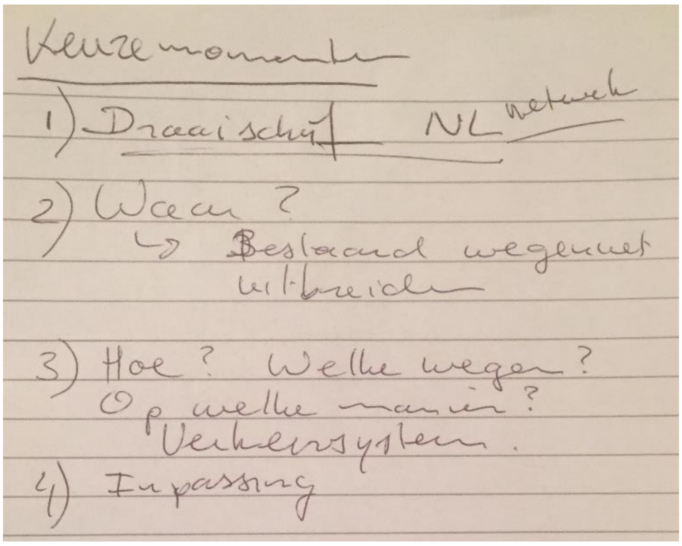
VIII_E: Area-Development opportunity map (D-1)



Appendix IX – Interview Results, Visual
IX_A: Interviewresults I-1





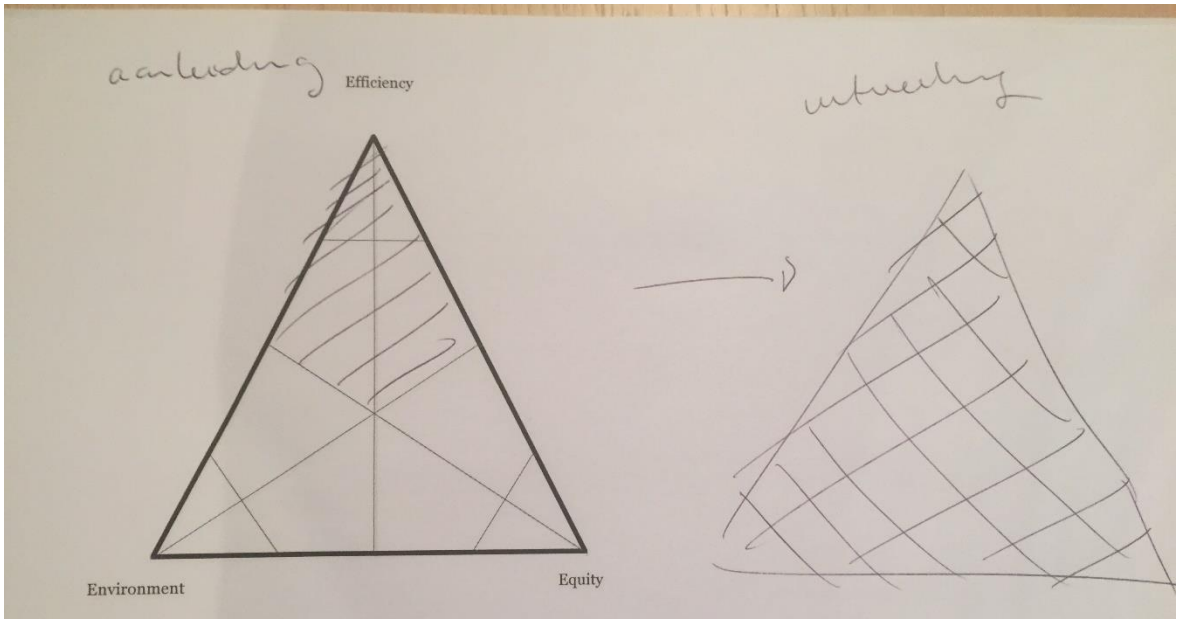

Keuzemomenten

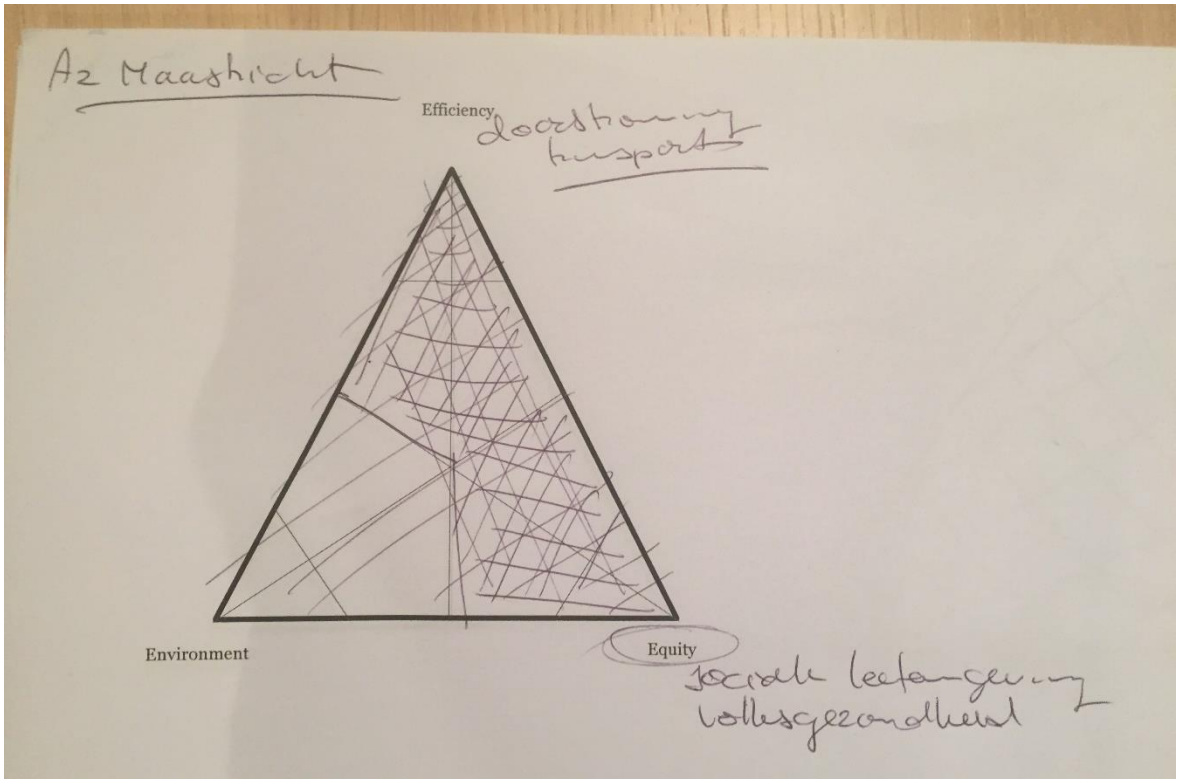
1) Draaischijf NL netwerk

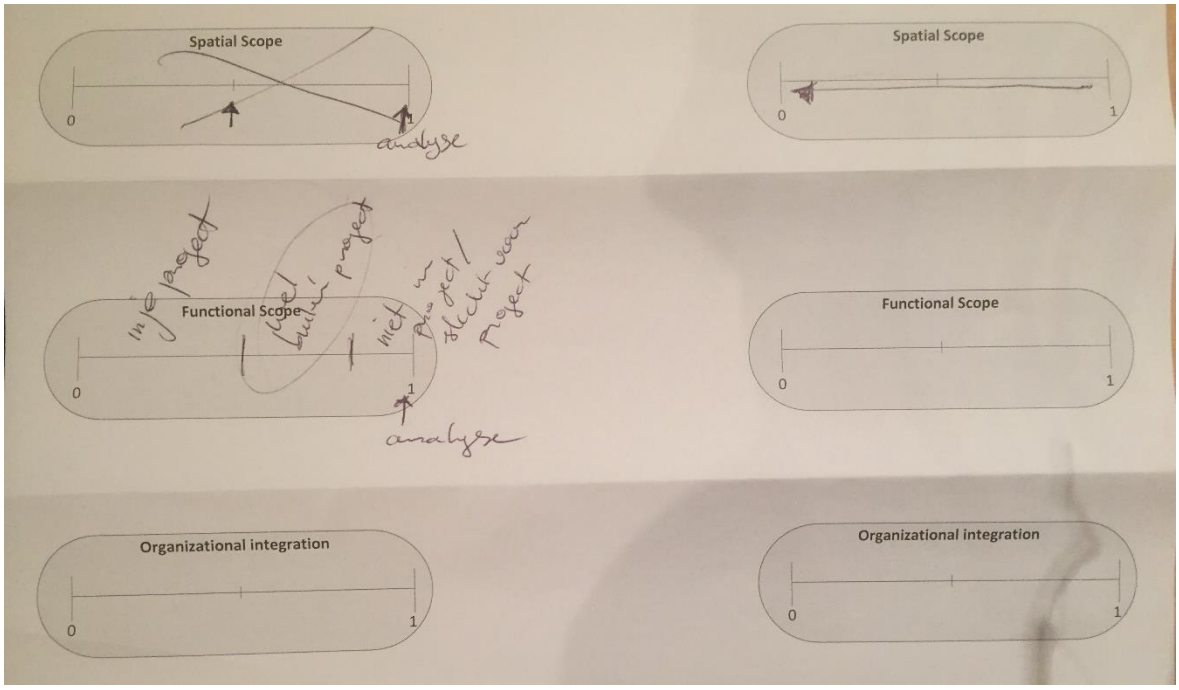
2) Waar?
↳ Bestaand wegennet uitbreiden

3) Hoe? Welke wegen?
Op welke manier?
Verkeersysteem.

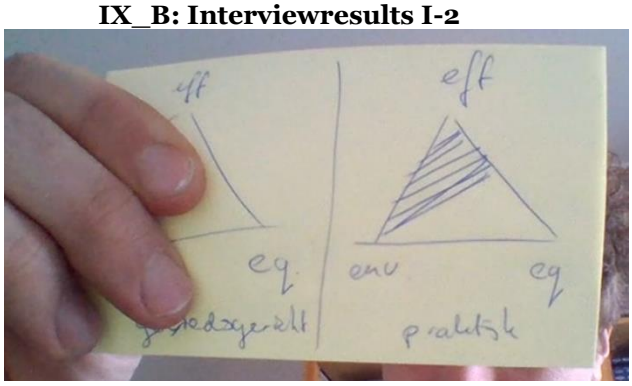
4) Inpassing

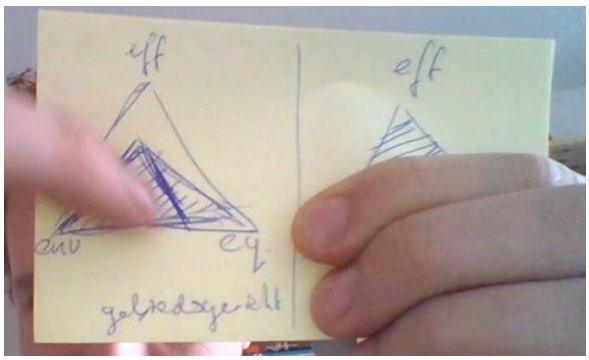

aanleiding
Efficiency
uitwerking
Environment
Equity

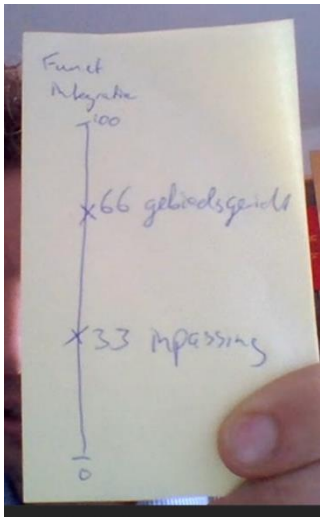

A2 Maastricht
Efficiency
doorstroming
transport
Environment
Equity
sociale leefomgeving
volksgezondheid



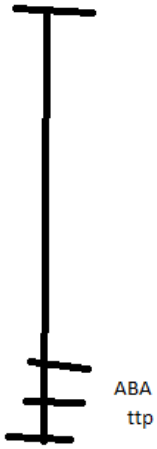
IX_B: Interviewresults I-2



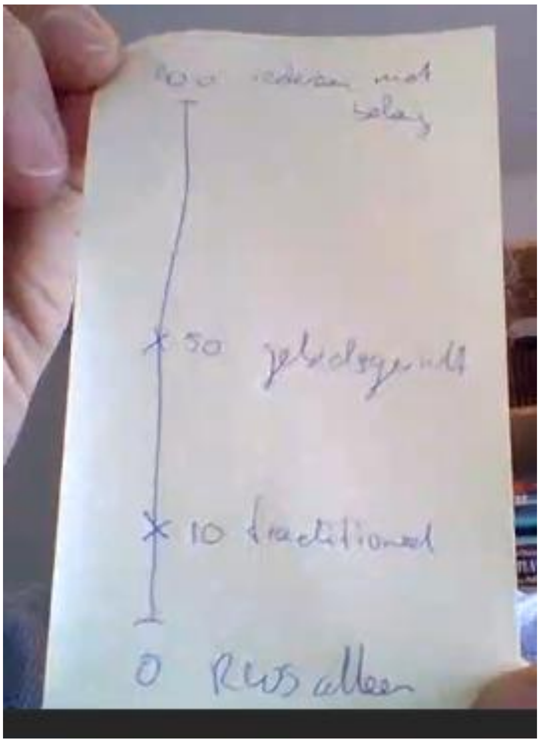




100: ruimtelijke integratie

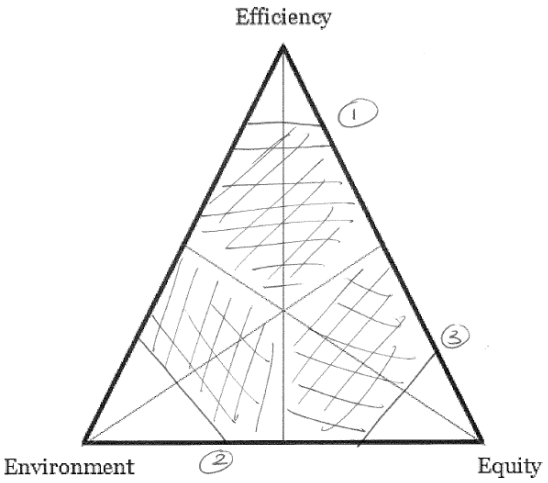


0 ruimtelijke integratie


50
10 traditioneel
0 RWS alleen

IX_C: Interviewresults I-3

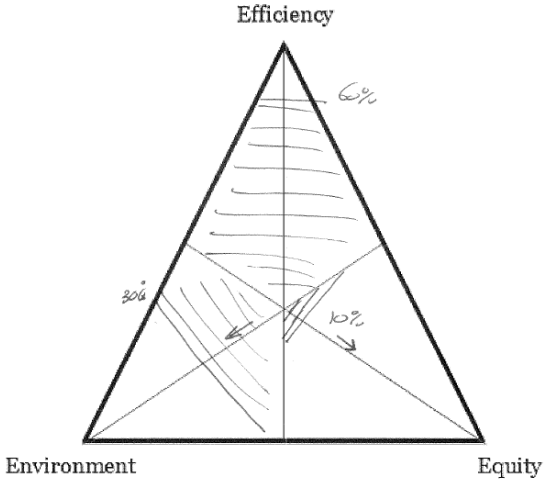
P6A2

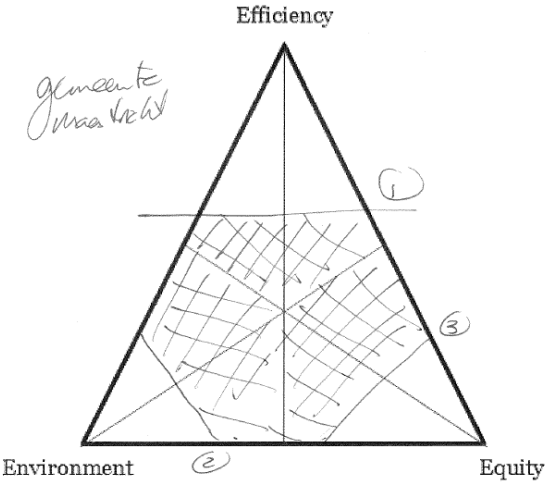


1 > 2 > 3

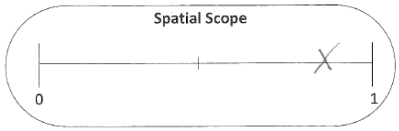
normen regels wetten

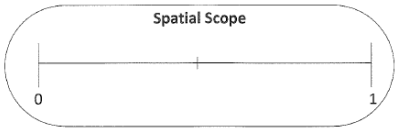
RWS

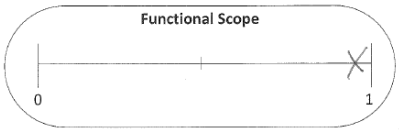


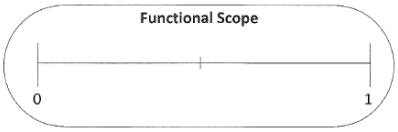


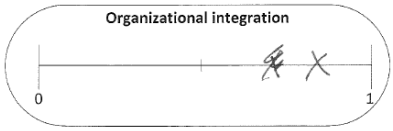
2 > 3 > 1

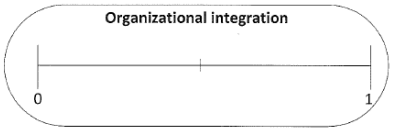




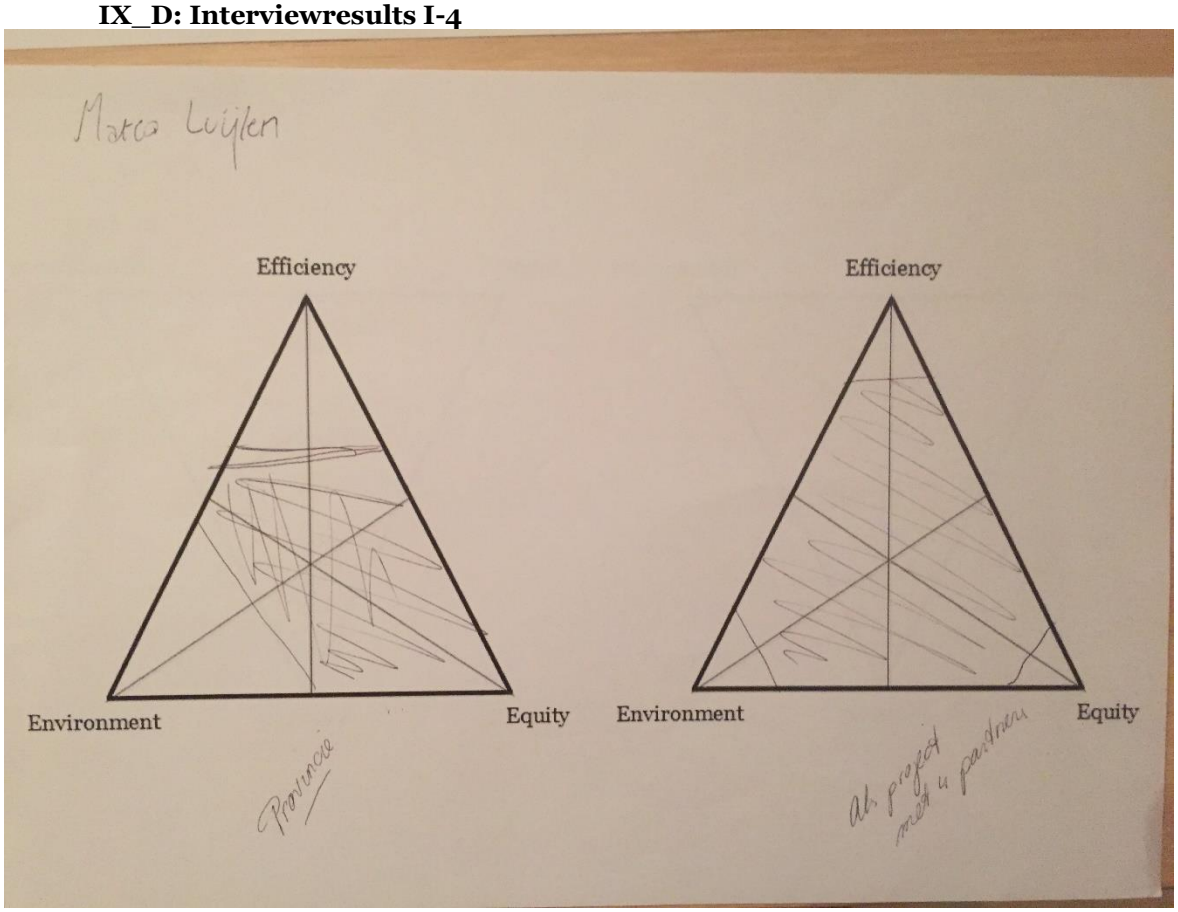


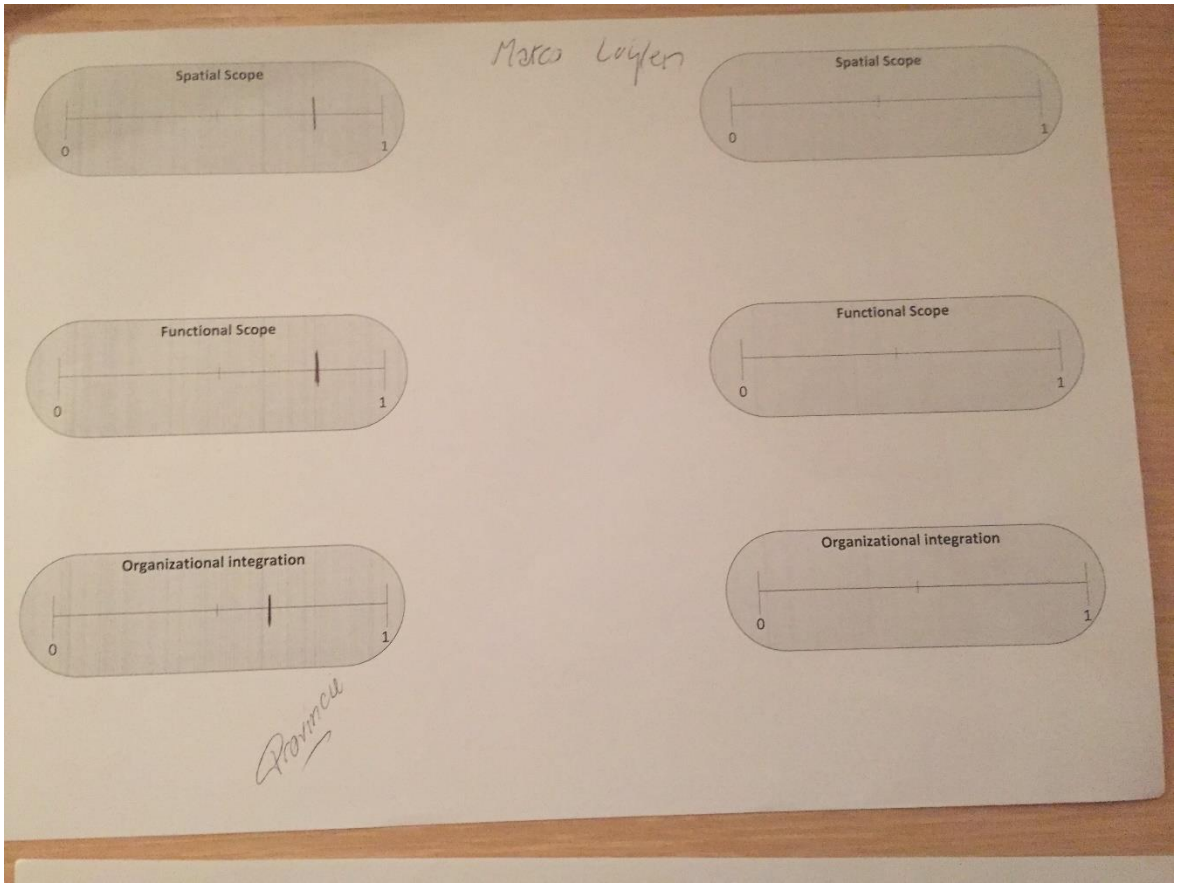




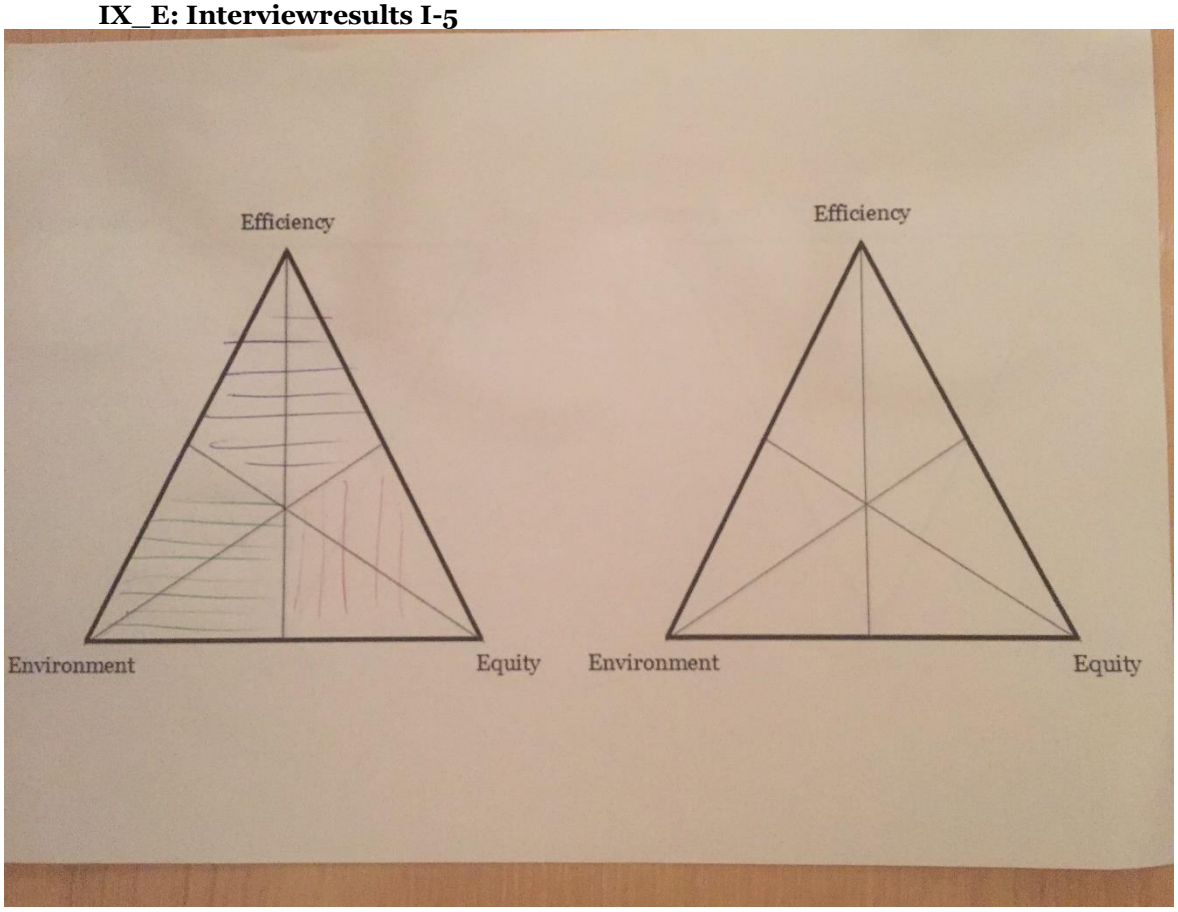


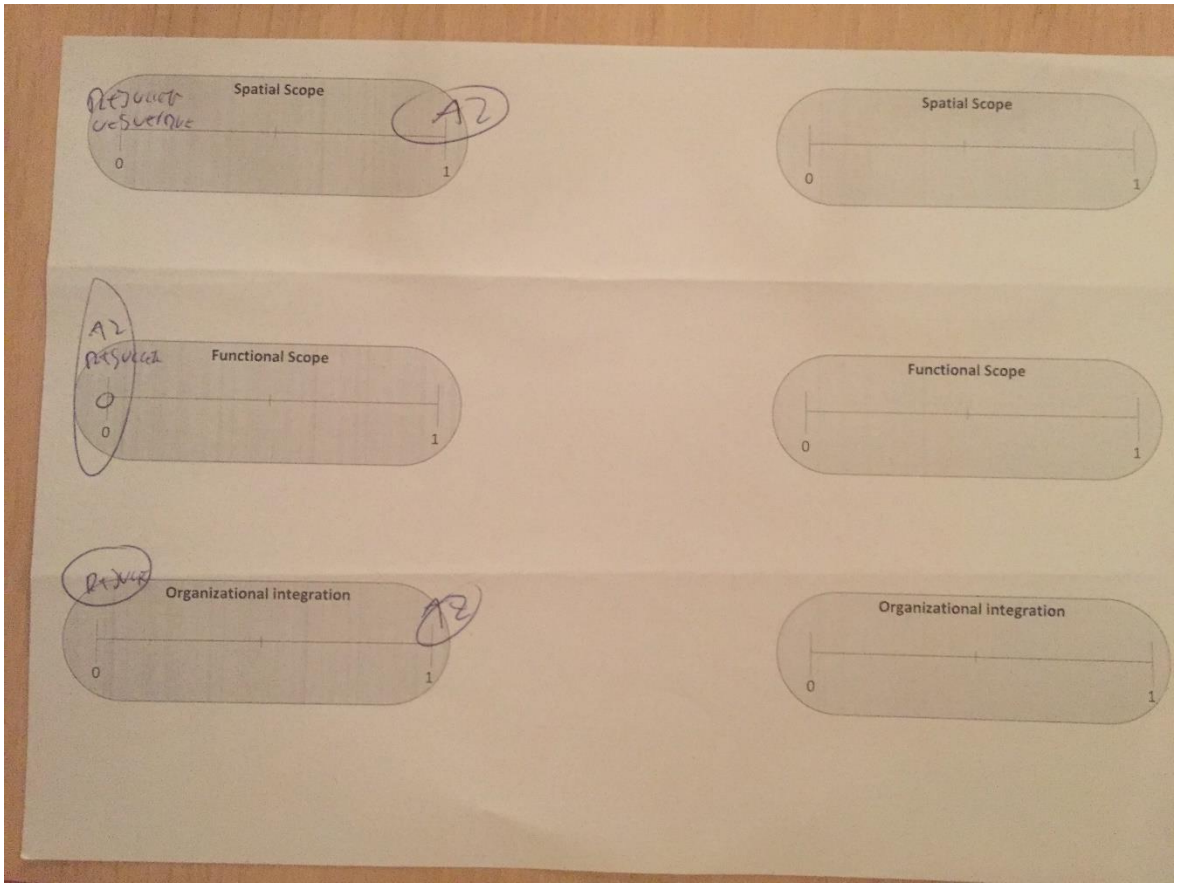
IX_D: Interviewresults I-4



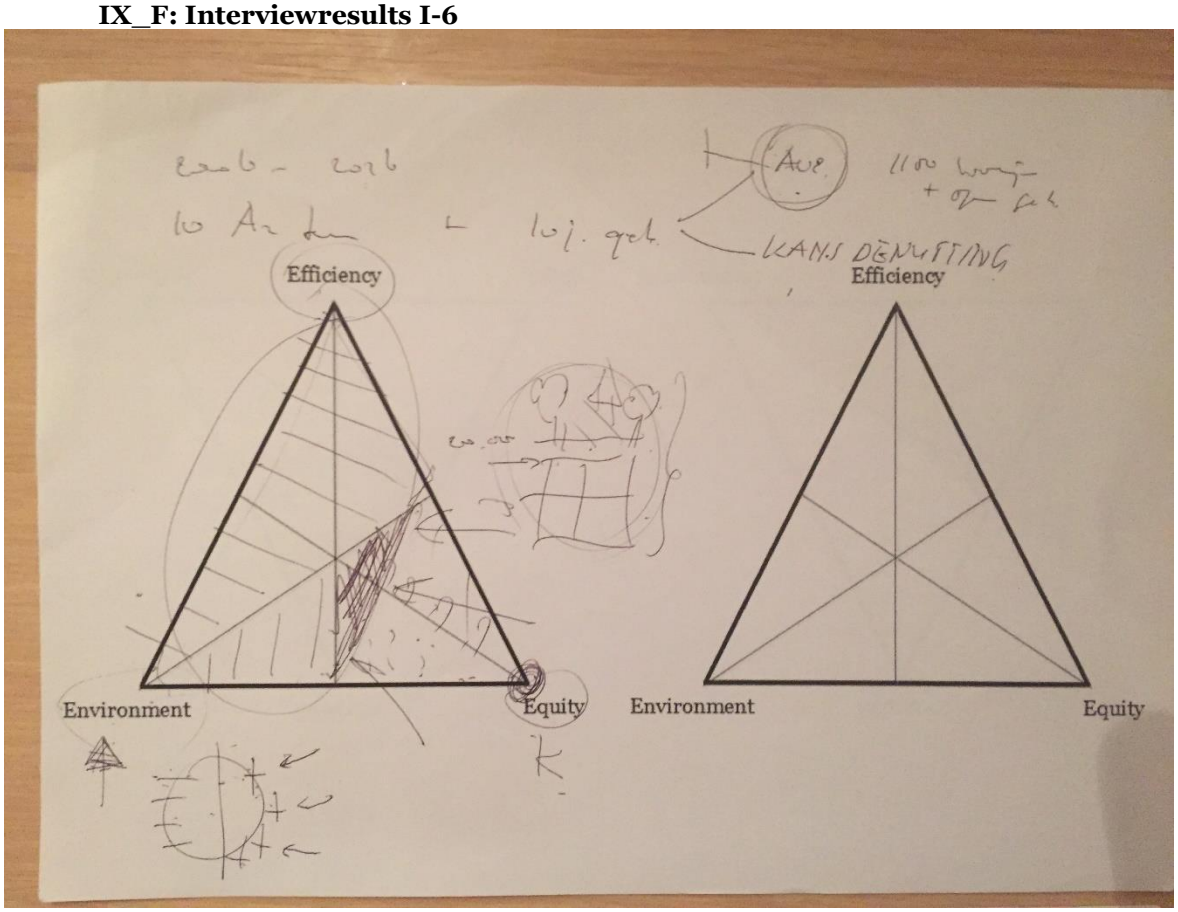


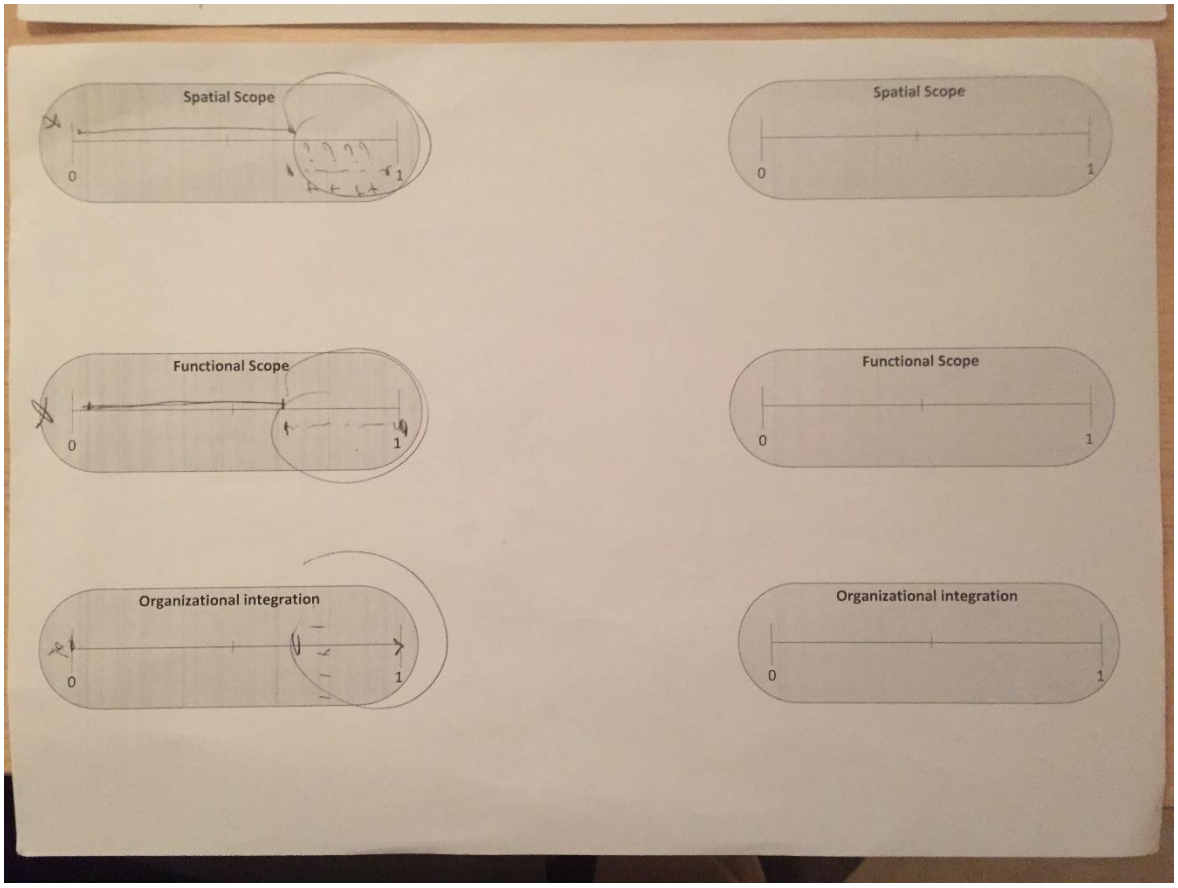
IX_E: Interviewresults I-5





IX_F: Interviewresults I-6




Spatial Scope
0
1
Spatial Scope
0
1
Functional Scope
0
1
Functional Scope
0
1
Organizational integration
0
1
Organizational integration
0
1