

A QUALITATIVE AND QUANTITATIVE UNPACKING  
OF SPATIAL, SOCIAL AND POLITICAL DIMENSIONS  
OF SHARED SPACE

EVIDENCE FROM THE MARIAHILFER STRASSE IN VIENNA

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## Abstract

In the academic literature the concept of 'Shared Space' is not often addressed, and the research that has been conducted on this topic thus far has focussed on the design and functioning of Shared Spaces. The literature search only turned up a single study pertaining to people's subjective perceptions of Shared Spaces. Therefore, this study aims to address this knowledge gap by applying both quantitative and qualitative research methods. Additionally, this study will evaluate the use of Shared Space as a tool to enable spatial distance during the COVID-19 pandemic.

The concept of Shared Space revolves around the integration of different road users by designing the street as a place to 'sojourn', rather than as a traffic artery.

The research strategy applied in this thesis is a case study, focussing on Vienna's largest shopping street, the Mariahilfer Straße.

Viennese politicians perceived the Shared Space as the political process that preceded the implementation. Experts from academia and practice criticized the decisions made by politicians and did not perceive the Shared Space in the Mariahilfer Straße as Shared Space, both due to its design and the dominance of cars. The perception of the general public in Vienna was determined by the behaviour of the other road users in the Shared Space. This perception often resulted in feelings of unsafety and cautious behaviour. The value of Shared Spaces for the purpose of spatial distancing remains unclear.

Research also indicated that the perception of Shared Spaces is highly influenced by the behaviour of road users. It also showed that laws and regulations can significantly hamper the efficiency of a Shared Space. As such, policy makers and planners should consider these social and political dimensions when planning to implement a Shared Space.

**Key words:** Shared Space, Perception, the Healthy City, Smart Urban Growth, Sustainable Development Goals, the low-carbon city, COVID-19, qualitative and quantitative research methods.

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## List of abbreviations

### *Abbreviation and its meaning*

<b>SDGs</b>	Sustainable Development Goals of the United Nations.
<b>EU</b>	European Union.
<b>FUZO</b>	Fußgänger Zone (Austrian-German for 'pedestrian zone').

# 1. Introduction

## 1.1 Background

Since February 2020 the world has been captivated by the COVID-19 (Coronavirus) pandemic (WHO, 2020). In December 2019, the Coronavirus appeared in China and within a few weeks it spread to other parts of the world as well.

In order to prevent the Coronavirus from spreading, many governments summon their residents to keep 'social' or 'physical' distance. In their editorial, Abel & McQueen (2020) argue that the term 'social distancing' is incorrect because social support (for example, through telephone or e-mail) can contribute positively to public health. Therefore, they state that "*Public health should approach the threat of COVID-19 by promoting spatial distance together with social closeness*" (Abel & McQueen, 2020, p.1). In line with their argument, the term 'spatial distance' will be used in this thesis.

In the report *Public Spaces & Public Life during COVID 19* (2020), urban design company Gehl observes through snapshots how public life in four Danish cities evolves during the pandemic and how public spaces in these cities are used. With regard to spatial distance, there are some important outcomes that can be drawn from the report. First, Gehl notices that less people perform 'downtown activities' in Denmark during the lockdown. This could be explained by one of Gehl's other findings that '*popular places make physical distancing rules hard to follow*' (2020, p.11). It can therefore be argued that it is more difficult to maintain spatial distance in city centres, where popular places like commercial streets often are located.

Gehl concludes its report by posing multiple (so far unanswered) questions, of which one became this thesis' purpose. Gehl asks: '*How might we design for physical [or: spatial] distancing so that we can responsibly take part in public life across cities in a healthy, comfortable way?*' (2020, p. 52). Gehl wonders in one of the other questions '*which street types, features, and their programming are more conducive to COVID[-19]*' (Ibid.). In other words, Gehl suggests that there are urban design principles that might be less conducive to a pandemic because they enable spatial distance.

In this thesis, the Dutch concept of 'Shared Space' – '*the integration of traffic into the social and cultural fabric of the built environment*' (Hamilton-Baillie, 2008, p.169) – will be explored as type of urban design that might be less conducive to COVID-19. This exploration is done by means of a case study.

The subject of Shared Space lends itself perfectly to an evaluation in the form of a case study, as the subject adequately conforms to its perimeters as put forward by Punch; '*a case [is] a phenomenon of some sort occurring in a bounded context*' (Punch, 2014, p.121). Considering every Shared Space covers both a visible, geographically bounded context and a politically bounded context, the choice of this research strategy seems apt. The latter pertaining to the entire implementation process, from the initiation of the Shared Space to the actual spatial transformation and its eventual functioning.

Below, Vienna – and the Mariahilfer Straße in particular – will be introduced as case study for this research. This case lends itself well for this research because the city of Vienna is explicitly using the Shared Space-concept to enable spatial distance in the city. Before going into further detail with regard to the case study, first the importance of spatial distance for future cities will be explained below.

Firstly, it is possible that the COVID-19 pandemic advances again, or that another pandemic arises. Especially when (inter)national travel resumes, it is likely that any new pandemic will spread as rapidly as COVID-19 did. Secondly, over half of the world's population is already living in urban areas and this percentage is rising every year (WHO, 2020a). This means that cities are becoming more crowded and that maintaining spatial distance is becoming increasingly difficult. Rethinking urban design can be a first step towards overcoming this challenge, and could lay the groundwork for a model of future cities that promotes spatial distance and, concurrently, resistance to the spread of any future epidemics.

As stated above, a city that already is rethinking its urban design in order to enable spatial distance is Vienna, the capital of Austria. The city is temporarily opening up several streets for pedestrians by appointing them as Shared Spaces and pedestrian zones (Stadt Wien, 2020). The logic behind this is that pedestrians are able to divert when they pass other pedestrians when they are allowed to walk on both streets and sidewalks, as Die Grüne Mariahilf (a neighbourhood department of the green political party *Die Grünen* in Vienna) shows in an Instagram post (see Figure 1).



Figure 1: Shared Space as a tool for enabling spatial distance. Source: Instagram Die Grüne Mariahilf, April 1, 2020.

These temporary Shared Spaces in Vienna are not the city's first Shared Spaces. In 2011 the political party *Die Grünen* initiated to implement Vienna's first Shared Space in the Mariahilfer Straße, which is one of the largest shopping streets of Vienna. This led to great opposition within Vienna's politics. Eventually, in 2015 the new Mariahilfer Straße was finished and consisted of two Shared Space-zones and one

pedestrian zone. The purpose of these first Shared Spaces was to make the shopping street more attractive for pedestrians and local residents by limiting the transit traffic in the street (Fabry, 2013). In chapter 4, the process of implementing the concept of Shared Space in the Mariahilfer Straße in Vienna, from its initiation up to its current functioning, will be discussed more extensively.

So far, we have come across two reasons to implement Shared Spaces. Enabling spatial distancing on the one hand, and improving the street's appeal to pedestrians on the other hand. However, in the academic literature about the concept 'Shared Space' several other reasons to transform city streets into Shared Spaces are put forward. First of all, to ensure '*the safe movement of traffic, cyclists and pedestrians*' (Hamilton-Baillie, 2008, p.168) by removing all traffic control and thereby generating more cautious behaviour, as was the original rationale put forward by the concept's inventor, the Dutch traffic engineer Hans Monderman (Project for Public Spaces, 2008).

Furthermore, Shared Spaces can be a means to achieve healthy cities, smart urban growth, a just society, and low-carbon cities. The main reason for this is that Shared Spaces can be seen as a tool to improve the walkability of a place (Zandbelt, 2020). Firstly, Shared Spaces can be seen as health-supportive environments that enhance active modes of transport, such as walking and cycling, because there is less motorized traffic (Jayakody et al., 2018; WHO 2020b). Secondly, Shared Spaces connect well to the principles of the concept 'Smart (Urban) Growth', which emphasize walkability and the opportunity to choose walking or cycling as a mode of transport (Smart Growth Network, 2006). Thirdly, walking is a very democratic transport mode that is available to (almost) everyone (Zandbelt, 2020). Creating walkable spaces, such as a Shared Space, could therefore contribute to achieving a just society. Lastly, motorized traffic is limited in Shared Spaces, which leads to less carbon-emission in cities. Therefore, Shared Spaces are beneficial to achieving 'low-carbon cities' as well (Buchhart, 2015; Jayakody et al., 2018). In addition to these individual arguments, every argument mentioned above relates to at least one of the United Nation's SDGs (United Nations, 2015). Therefore, implementing Shared Spaces will contribute to achieving a '*better and more sustainable future for all*' (Ibid.).

## 1.2 Research problem

While it has been shown that there are several reasons to implement Shared Spaces in cities, the Shared Space-concept now seems to be more (socially) relevant than ever due to the current COVID-19 pandemic. As I have highlighted above, Vienna is currently implementing the Dutch Shared Space-concept in order facilitate public life during this pandemic. This creates the impression that the people in Vienna are used to Shared Spaces. However, the transfer from the Dutch concept into the Austrian context did not happen without a heated political discussion when Shared Spaces were introduced to Vienna for the first time. Following this turbulent implementation

process and the current estimated societal importance of Shared Spaces for cities, in this research the following research question will be central:

*How is the Dutch concept 'Shared Space' perceived by users and experts in the Austrian context of the Mariahilfer Straße in Vienna?*

In order to answer this research question, this thesis will address the following three sub questions:

1. *How is the Dutch concept 'Shared Space' internationally interpreted and applied? (Chapter 2)*
2. *How and under which circumstances is the Shared Space in the Mariahilfer Straße implemented and designed? (Chapter 4)*
3. *How do different groups of people – users and experts – perceive the Shared Space in the Mariahilfer Straße in general and during the COVID-19 pandemic? (Chapter 4)*

Not only does this research have a clear societal relevance, the research is academically relevant as well for several reasons. First, in the academic literature there has been no post-evaluation of Vienna's first Shared Space or more in general, about the implementation and perception of the Dutch concept in international contexts. This case study therefore contributes to our knowledge about spatial planning and design. Subsequently, this knowledge contributes to the planning practice as well. Secondly, this research adds to our knowledge about how we can design cities in such way that we are able to deal with pandemics in the future, as well as how we can achieve the SDGs by rethinking urban design.

The case of the Mariahilfer Straße in Vienna is particularly suitable for this research because of several reasons. In the first place, due to the political discussion concerning the initiation and implementation of the Mariahilfer Straße's Shared Space, this street is an interesting and rich case to explore. Secondly, Gehl found that the use of especially popular places like commercial streets has decreased due to COVID-19 (2020). Since the Mariahilfer Straße is both a commercial street and a Shared Space, this case provides the opportunity to investigate to which extent the impact of COVID-19 on a commercial street could be limited by a Shared Space-design. Finally, the Mariahilfer Straße is a street that is deliberately redesigned as Shared Space. Therefore, this case is more suitable for exploring the relationship between spatial distancing and Shared Spaces than using the traditional streets that are temporarily appointed as Shared Spaces, as case study.

In this research both users/the general public and experts will be asked to elaborate on their perception of the Shared Space in the Mariahilfer Straße. Within the group of experts, a distinction is made between experts from academia and practice on the one hand, and political experts on the other hand. These three groups all have their own point of view (daily use, theoretical, and pragmatic) on the Shared

Space-concept and this will contribute to a complete picture of this concept in the Austrian context of the Mariahilfer Straße.

### 1.3 Thesis structure

The thesis will be structured as follows. In the next chapter the concept of 'Shared Space' will be explained from a theoretical point of view. The concept will be defined based on academic literature and research reports and subsequently light will be shed on both the international interpretation and application of Shared Spaces. Moreover, the concept will be examined in relation to concepts such as '*Der Flaneur*' (Benjamin, 1983) in order to investigate what role context could play in the translation of the Dutch concept into the Austrian context of the Mariahilfer Straße in Vienna. Then, in chapter 3, the operationalization of the research question and the research methods used are outlined. In the subsequent chapter the findings are central, after which a new chapter for the conclusion and discussion follows.

## 2. Theoretical framework

In this chapter, the concept of 'Shared Space' will be discussed extensively based on academic literature in order to answer the first sub question of this research: *How is the Dutch concept 'Shared Space' internationally interpreted and applied?*

The first part of this theoretical background will explore briefly how the concept came into being and what its objectives are. Into greater detail, the underlying (design) principles of the concept are discussed and the criticism the concept has received is summarized. Throughout the chapter, the concept of 'Shared Space' will also be examined in relation to several other concepts such as 'integration'.

Subsequently, the second part of the chapter will narrow the concept of 'Shared Space' down to its role in the context of commercial streets. In the third part, the relationship between the spatial environment and the way this built environment can be perceived will be discussed. Lastly, the theory discussed will be summarized in a conceptual model.

### 2.1 The background of the concept of 'Shared Space'

In the past decades a fairly limited body of academic literature has been published on the concept of 'Shared Space'. In the paper written by Karndacharuk et al. (2014), an extended overview is provided of the evolution of this concept from the 1960s up to the present. Therefore, this chapter discusses the background of the Shared Space-concept only briefly (for more background information on the evolution of the concept and its related concepts, one can thus read the paper by Karndacharuk et al., 2014; or the paper written by Ben Hamilton-Baillie, 2008).

Due to differing decades, contexts and countries the concept has been implemented in, Kaparias et al. conclude that *'shared space is used as an "umbrella" term to collectively refer to a range of streetscape treatments'* (2015, p.116). Underlying to all these types of Shared Space, is the notion of 'integration' as a reaction to the dominating segregation of different kind of road users (Ben-Joseph, 1997; Hamilton-Baillie, 2008; Karndacharuk et al., 2013; Methorst et al., 2007).

Preceding to the implementation of the first Shared Space by Hans Monderman, first the concepts of 'traffic calming' and 'woonerf' have been invented as measures to integrate traffic and limit the amount of motorized vehicles in the streets of residential areas (Pharoah, 1993; Ben-Joseph, 1995; Gehl, 2011; Hamilton-Baillie, 2004). Eventually, in the 1970s Dutch traffic engineer Hans Monderman invented the concept of 'Shared Space'.

Monderman's idea that different road users – cars, cyclists and pedestrians – share space, was a reaction to the national concern in the Netherlands about the increasing amount of child pedestrian casualties (Hamilton-Baillie, 2008). Monderman tried to find a way in which he could influence the behavior of drivers in such way that their speed decreases and the safety on the street improved (Karndacharuk et al. 2013). According to him the key is to remove all traffic control and eliminate the

segregation of road users (Hamilton-Baillie, 2008). By doing this, road users behave more cautious because they are more insecure and the safety on the street improves.

The literature shows that the concept of 'Shared Space' was only implemented in residential areas in its early years, under the name of 'Shared Streets'. Despite the fact that Shared Streets were only assumed to be functional in villages, the concept was applied to non-residential areas, like city centers, later on as well (Hamilton-Baillie, 2008; Karndacharuk et al., 2014). According to Karndacharuk et al. (2014) this shift was accompanied by the introduction of the name 'Shared Space'. This shift, from Shared streets in residential areas to Shared Spaces in non-residential areas, is a development that was already predicted by Bendixson in 1977, who stated that '*[if] space-sharing [...] proves safe and practical it is likely to be applied in other circumstances*' (p.216).

## 2.2 Defining the concept of 'Shared Space'

Although there are various definitions of the concept of 'Shared Space', these definitions often have certain elements in common. First and foremost, the definitions always mention the integration of different kinds of road users into one environment. Besides that, there is always a spatial dimension included in the definition because the physical aspects of the street (or the road) have to be redesigned in order to create a Shared Space (Ben-Joseph, 1997). Additionally, several articles point to the presence of certain 'streetscape treatments' that transform a conventional street into a Shared Space (Beitel et al., 2018; Kaparias et al., 2012).

Furthermore, some definitions highlight the social aspect of Shared Space, namely that road users are expected to negotiate their own way through the street, based on eye-contact and 'informal social protocols' (Beitel et al., 2018; Hamilton-Baillie, 2008). Karndacharuk et al. then link the spatial design aspect to the social aspect by stating that a Shared Space is a 'self-explaining' street due to its design, and therefore '*reinforces the behavioral response of low speed, and the need for caution for all road users*' (2014, p.208).

Despite the fact that the various definitions of the concept of 'Shared Space' generally come down to the same idea, it must be noted that every Shared Space is different (Havik et al., 2012; Karndacharuk 2013; Schönauer et al., 2012). Schönauer et al. (2012) attribute the variety of applications of the Shared Space-concept to the characteristics of the local context where the Shared Space has been implemented. They state that every locale is different in its conditions, its physical appearance and mixture of traffic users. In addition, Havik et al. claim that the ultimate streetscape that results from redesigning the street, is '*a natural consequence of the processes and strategies customary to the Shared-Space concept: there are no universally applicable rules with regard to the design of Shared Space*' (Havik et al., 2012, p.142).

The definition that has been formulated by Karndacharuk et al. appears eventually most complete: '*A shared space is a road space in which all road users (including pedestrians, cyclists, vehicles, and the disabled) are encouraged to legally*

occupy and share the same public space with little physical segregation, particularly between pedestrians and vehicles' (2013, p.1). Prior to the discussion of frequent implemented elements in Shared Spaces in §2.4 of this chapter, the scholarly objectives for implementing Shared Spaces are discussed in the paragraph below (§2.3).

### 2.3 Objectives for Shared Spaces

As we have seen in §2.1 of this chapter, the notion of 'integration' is inherently connected to Shared Spaces. Shared Spaces are, according to Hamilton-Baillie, intended to reconcile 'people, places and traffic' (2004, p.61). Some scholars consider this notion to be the only real objective for Shared Space, which is reflected in the following quote from Schönauer et al.: *'The only recurring objective is, however, that shared spaces should encourage shared **usage** of the space instead of retaining the old behavior on the newly designed road'* (2012, p.4). However, the academic literature shows that there are several other objectives underlying this objective of integration.

The original objective for the concept, as proposed by its inventor Hans Monderman, was to improve the safety on the street by causing vehicle behavior change and consequently lowering speeds of motorized traffic (Beitel et al., 2018; Craus et al., 1993; Karndacharuk et al., 2013, 2014). Where safety was of high priority in the first implementations of the Shared Space-concept, this safety-objective seems to be of less importance in later applications of the concept. Havik et al. (2012) state, for instance, that there are other, more essential, objectives for Shared Spaces because they argue that the increased road safety is just a beneficial byproduct of the Shared Space-design.

Another one of Shared Spaces' objectives is reclaiming public space for the people (Province of Fryslân, 2005). As highlighted in §2.1 of this theoretical framework, the Shared Space-concept can be seen as a reaction against the motorization of urban spaces and the growing car dependency, by shifting the focus of public space towards pedestrians (Hamilton-Baillie, 2008; Karndacharuk et al., 2013). In their conference paper, Al-Mashaykhi & Hammam (2020) argue that Shared Spaces should enable the movement of pedestrians in a safe, comfortable and free manner. They add that a Shared Space should also generate feelings of confidence and convenience for pedestrians, especially among special need users. The latter is a special and much debated point of attention and will therefore be discussed in §2.5 of this chapter.

Connected to this objective of reclaiming the streets is the objective; improving the spatial environment in such way that the street becomes a place rather than a traffic artery (Hamilton-Baillie, 2008; Jayakody et al., 2018; Karndacharuk et al., 2013,). Jayakody et al. (2018) argued that the strategy to segregate different traffic modes leads to a deterioration of the quality of the public space/street because some vital characteristics of cities are lacking, such as diversity and distinctiveness.

They advocate streets that are designed for people and vehicles together in order to ensure diversity and enable community life. This line of reasoning corresponds to Jane Jacob's (1961) statement that diverse streets, which are the city's vital organs, are lively and safe streets.

The last most frequently mentioned objective that can be found in the academic literature is the objective to respond to a community's needs and desires by designing a Shared Space. This connects well to the objective of designing the Shared Space street as a place. As implementing a Shared Space leads to less automobile traffic, people will have more opportunity to perform various activities. They can walk, sit, stroll, cycle, play and relax in the renewed environment (Jayakody et al., 2018; Havik et al., 2012). Additionally, according to Gehl (2011) slow traffic speeds enable social contacts between people.

Obviously, many objectives for implementing Shared Spaces can be found in the academic literature and all these objectives have beneficial side effects as well. Some of these that are mentioned are for instance: generating an economic impetus with a Shared Space (Hamilton-Baillie, 2008; Havik et al., 2012; Jayakody et al., 2018; Karndacharuk et al., 2014); supporting active modes of transport (Hamilton-Baillie, 2008; Jayakody et al., 2018); reducing carbon emissions and therewith creating an improved and healthier environment (Beitel et al., 2018; Craus et al., 1993; Jayakody et al., 2018; Pharoah, 1993; Pucher & Buehler, 2010).

Since every Shared Space is different (see §2.2 of this chapter), the underlying objectives for implementing Shared Spaces differ per application as well. Some can be focused on creating healthy environments by reducing emissions and supporting active modes of transport, while others might pursue an increase in economic activity. In this section various motives to apply the Shared Space-concept have been established. In the next paragraph the various spatial design elements characterizing a Shared Spaces will be outlined.

## 2.4 The design principles of Shared Spaces

Whether a Shared Space will be successful or not, depends on four principles (Al-Mashaykhi & Hammam, 2020; Jayakody et al., 2018). Firstly, pedestrians should be the dominant group of road users, causing the other road users to be less prominent. Secondly, the spatial environment should be designed in such way that it is a '*distinctive and attractive public space*' (Al-Mashaykhi & Hammam, 2020, p.3). Thirdly, the Shared Space must be a space for everyone. Therefore, the design must be inclusive and focused on vulnerable groups and people, such as visually impaired people or elderly people, as well. Lastly, the connectivity of the Shared Space should be of good quality. Every road user should be able to move without being hampered by barriers and obstructions.

While these four principles are considered canonical, the academic literature various mentions other concrete spatial elements or design principles that can be used to create a Shared Space. As is already stated in §2.2 of this chapter, the design

of a Shared Space depends on the local circumstances which results in differing combinations of spatial elements per application of the concept of Shared Space, which indicates 'a range of treatments' (Kaparias et al., 2012, p.297). In the sections below, these specific spatial elements are elaborated on.

#### 2.4.1 Lack of demarcation

On a conventional street, different types of road users are being separated by demarcation such as curbs and road markings. Assuming that Shared Spaces always aim to integrate different road users (see §2.1 of this chapter), all demarcation should be removed in every Shared Space (Karndacharuk et al., 2014). The way this is done depends on the circumstances, but the result has to be the same everywhere: the entire Shared Space must consist of a 'continuous paved surface' at the same level from wall to wall (Craus et al., 1993; Karndacharuk et al., 2014). This means that in a Shared Space there is no vertical or material difference between separate driving lanes and sidewalks (Karndacharuk et al., 2014). The idea behind such removal of demarcation is that it stimulates different road users to share the space (Ibid.).

An example of this principle can be found in the spatial design of the Laurenskwartier in Rotterdam, when comparing images from before and after the transformation (Figure 2). In the picture that was taken before the rework (left), there is a clear vertical difference between the driving lane and the sidewalk. On the picture that was taken after the transformation (the right picture in Figure 2), you can see that any such demarcation was removed.

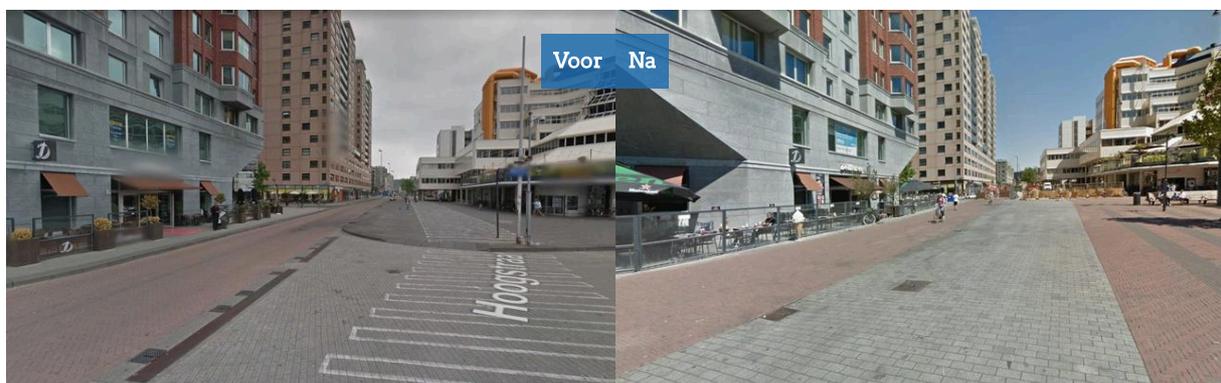


Figure 2: Shared Space in Rotterdam, the Netherlands. Source: kenniscentrumsharedspace.nl.

#### 2.4.2 Lack of traffic control

Since the invention of the Shared Space-concept, the idea was to remove all forms of traffic control – such as traffic signs and parking places (Beitel et al., 2018; Hamilton-Baillie, 2008). As explained before, Hans Monderman argued that this lack of traffic control would generate a feeling of insecurity among car drivers, because of which they would behave more cautious resulting in a safer street (Methorst et al., 2007). Al-Mashaykhi & Hamman argue in their 2020 conference paper that this principle still applies to Shared Spaces by stating that road users should 'make their own decision in using streets rather than following a specified track of regulation' (p.3).

However, Jayakody et al. (2018) do not fully agree with the removal of all traffic control. They argue that 'some street elements can be left in order to maintain the safety and viability of the street' (p.283).

In Figure 3 a clear example of the removal of traffic signs is visible. The picture on the left, which is the situation before the redesign, shows a traffic situation that includes several traffic signs and marks on the road. The picture after the transformation into the Shared Space shows that all these forms of traffic control have been removed.



Figure 3: Shared Space Duiven, the Netherlands. Source: kenniscentrumsharedspace.nl.

#### 2.4.3 Clear marking of entry and exit

The entry or exit of a Shared Space is an important area because the conventional street transitions into the Shared Space at these points. These areas are important due to a difference between conventional and Shared Space streets that is highlighted in academic literature. According to Methorst et al. (2007) conventional streets serve a mobility and an accessibility function, while a Shared Space has the additional function of 'sojourn'/staying. Hamilton-Baillie (2004) underlines this difference and explains that this has an impact on the type of activities in the Shared Space as well as the behavior of the road users. In a Shared Space there is not only through traffic, but there are also people that spend leisure time on the streets (Hamilton-Baillie, 2004; Kaparias et al., 2015). In order to allow people to stay on the street comfortably and safely, road users have to adjust their behavior accordingly (Ibid.).

However, road users might not notice the transition on their own accord, which would result in an unsafe environment. It is therefore important to alert road users to the transition into a Shared Space and ensure that they are aware of the fact that they have to adjust their behaviour. (Karndacharuk et al., 2014). To this end, both the entry and the exit of the Shared Space have to be marked clearly. One way of doing this is by applying a distinctive paved surface in the Shared Space, as is highlighted in the next paragraph.

#### 2.4.4 Pavement/surface

Shared Spaces always have a redesigned street surface, distinct from the street surface in conventional streets. When road users enter a Shared Space, they can recognize this changed environment *inter alia* by the colorful pavement that has been applied to the surface (Schönauer et al., 2012). Furthermore, profound deviations in the pavement additionally function as clues to alert drivers that they approach a place where pedestrians might cross (Hamilton-Baillie, 2008).

Figure 4 shows an example of the Shared Space in Superkilen Urban Park Copenhagen, Denmark. In this environment the conventional pavement has been replaced by a conceptual and colorful design. Even though there still is some sort of demarcation due to the indicated cycle path, this conceptual and colorful design is a good example of a distinct surface in a Shared Space.

A special type of pavement that can be applied in Shared Spaces are tactile delineator bands. These elements enable visually impaired people to use the Shared Space as well. In §2.5 of this chapter this issue is discussed in more detail.

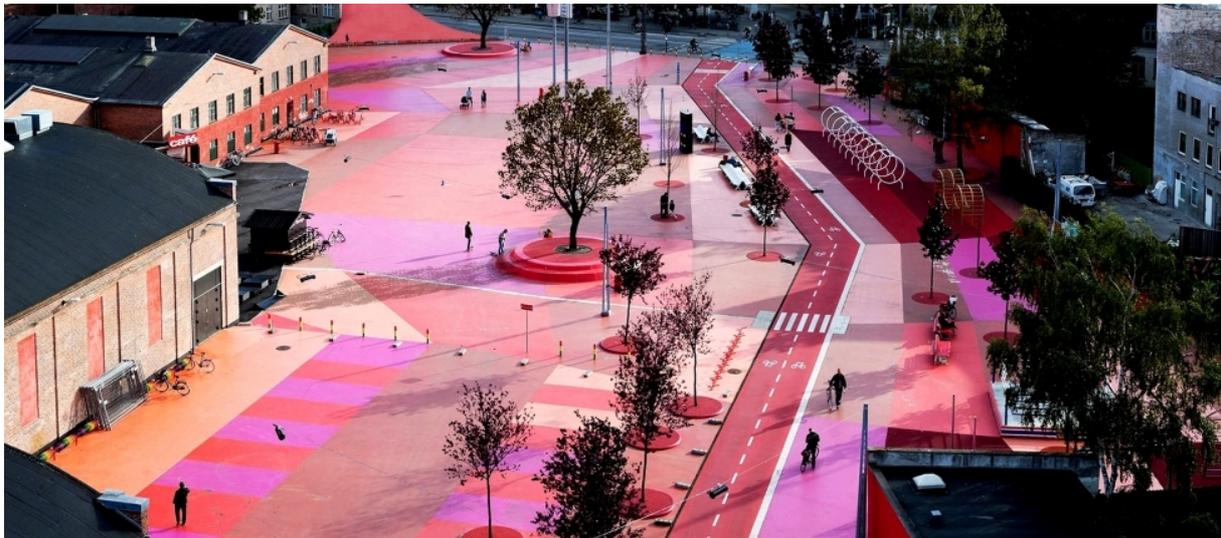


Figure 4: Superkilen Urban Park Copenhagen, Denmark. Source: [centerforactivedesign.org](http://centerforactivedesign.org).

#### 2.4.5 Furniture

As stated before, Shared Spaces function as places to stay for a period of time rather than merely as traffic arteries. Since people are more likely to linger in a high-quality environment than in a low-quality public space, it is important that the public space has an attractive appearance (Gehl, 2011). To improve the environmental quality and to stimulate people to stay longer in the Shared Space, furniture can be thoughtfully implemented in the Shared Space environment (Karndacharuk et al., 2013; Pharoah, 1993; Schönauer et al., 2012). The following types of furniture are mentioned in the literature: lighting, seating furniture and cycle racks.

#### 2.4.6 Natural components

Lastly, Shared Spaces often contain natural elements like trees, water and planters with plants. Al-Mashaykhi & Hammam argue that these components all *'have a significant influence on the feeling of comfort of users in urban spaces'* (2020, p.9). Trees can provide both shelter in times of rain as well as shadow on a hot summer day (Ibid.). Adding to this, Schönauer et al. report in their conference paper that green components like trees and grassed areas in Shared Spaces can also have *'a separating and a guiding effect on traffic behavior'* (2012, p.8). It can therefore be argued that natural components also have to be placed thoughtfully in order to let the Shared Space function as intended.

### 2.5 Critique on the concept of Shared Space

#### 2.5.1 Blind and visually impaired people

The Shared Space-concept has been criticized heavily the past two decades by scholars (and others) arguing that Shared Spaces are not safely accessible for visually impaired people (Al-Mashaykhi & Hammam, 2020; Childs et al., 2010; Havik et al., 2012; Imrie, 2012; Thomas, 2008). They appeal to several lines of reasoning in order to substantiate their claim.

First of all, a Shared Space lacks level differences indicated by curbs, which usually function as a guide for visually impaired people walking with a white cane or a guide dog (Al-Mashaykhi & Hammam, 2020; Havik et al., 2012). According to Childs et al. (2010) these level differences are necessary for visually impaired people to make sense of their environment. Other traffic control elements, such as marked parking places, are deemed important for visually impaired people as well (Havik et al., 2012).

Secondly, because all (or most) traffic demarcations are absent in a Shared Space, road users are supposed to negotiate their way through a Shared Space by means of sensory stimuli and eye-contact with other road users. Hamilton-Baillie explains that *'subtle messages through eye contact about status, hierarchy, and priorities are essential to the functioning of [Shared Space]'* (2004, p.54). It is precisely this eye-contact that is problematic for people that are visually impaired (Havik et al., 2012; Imrie, 2012). Research conducted by *Guide Dogs for the Blind Association UK* on how blind people perceive Shared Spaces, shows *'that blind and partially sighted people found it more difficult to navigate in the shared surface, and it affected their confidence, with most reporting they would no longer be able to use the area independently'* (Thomas, 2008, p.59). This is alarming because one of the principles to make a successful Shared Space is inclusivity (Al-Mashaykhi & Hammam, 2020; Jayakody et al., 2018), which is compromised by the inability of visually impaired people to navigate through a Shared Space by themselves.

Thirdly, an important element of a Shared Space is the (un)predictability of the behavior of other road users (Havik et al., 2012). A Shared Space is not only a spatially designed environment, but a social environment as well that is also formed by the presence and behavior of the road users. Besides the fact that visually impaired

people cannot make eye-contact with other road users to negotiate their way in the Shared Space, Havik et al. (2012) also mention that the behavior of especially cyclists is unpredictable and therefore problematic for all road users, including blind people. In other words, ensuring the safety of visually impaired road users is not only a matter of adjusting the spatial design, but also a matter of making the behavior of road users predictable.

### 2.5.2 Vulnerability of road users

In their article about safety in Shared Spaces, Methorst et al. (2007) conclude that visually impaired people are not the only ones vulnerable in Shared Spaces. First of all, they argue that pedestrians and cyclists are more vulnerable in a Shared Space-environment than car drivers because the car driver has the car to protect him, while the other road users only have their body to protect themselves with. On a conventional street this is different because road users are separated and therewith their safety is ensured to a greater extent.

Secondly, other groups that are vulnerable in a Shared Space are children, handicapped people and elderly persons (Ibid.). About these groups of people, they say: *'children are not allowed to freely walk around independently; the handicapped and the elderly feel themselves cornered and obliged to use the areas as little as possible. They pay the toll'* (Ibid., p.15). Vulnerability is thus expressed in terms of endangered protection and limited mobility. The *Guide Dogs for the Blind Association UK* endorses this conclusion by stating that Shared Spaces can be seen as a threat to all vulnerable road users, such as people with a cognitive or physical impairment (Thomas, 2008).

### 2.5.3 Proposed solutions

Several scholars and the *Guide Dogs for the Blind Association UK* came up with and tested ideas to ensure the safety of especially visually impaired people. Firstly, implementing tactile delineator bands could be suitable according to Childs et al. (2010). These bands should be placed in such a way that they can be detected easily and reliably by visually impaired people. However, Imrie (2012) establishes a disadvantage of these tactile delineator bands, which is the lack of context. This context is consisting of information about local circumstances, such as the design of the street and the presence of other road users. Especially in traffic, where the behavior of other road users is an important aspect, this context is very important he argues.

Another solution to improve the safety in Shared Spaces for visually impaired people is the implementation of clearly marked crossings (Havik et al., 2012). Blind and partially sighted people cannot make eye-contact with other road users to point out that they are willing to cross the Shared Space street. To remedy this problem, crossings can be designed so that they are both detectable by the visually impaired and clearly visible for the other road users. Besides that, Havik et al. (Ibid.) argue that

the entry and exit points of a Shared Space should be clear, whose importance has already been discussed in §2.4.3 of this chapter.

The last, and most often mentioned solution is the creation of a 'safe zone' within the Shared Space (Havik et al., 2012; Thomas, 2008). Imrie argues that '*the omnipresence of motor vehicles*' (2012, p.2266) in particular is a dangerous aspect of Shared Spaces for the visually impaired. As such, it is imperative to protect them against cars, as well as the unpredictable behavior of cyclists (see §2.6.1 of this chapter). This can be achieved by offering impaired people a zone in which they can move safely through the Shared Space.

## 2.6 Shared Space in the context of commercial streets

### 2.6.1. Shared Space in shopping streets

So far, this chapter has discussed the generic aspects of Shared Spaces. However, Shared Spaces are without exception embedded in a spatial, social and political context because they are implemented as a result of, and under, certain circumstances. As such, the logical next step is to examine the application of the Shared Space concept in such a context. The context in which this study will explore the concept of Shared Space is that of a commercial street. As introduced in the previous chapter, the street that will be examined in this case study is the Mariahilfer Straße in Vienna. The Mariahilfer Straße is one of Vienna's largest and most popular commercial/shopping streets. To attain a better understanding of the implementation of Shared Space in the context of a commercial street, it would be useful to examine shopping streets around the world in which Shared Spaces have already been implemented. However, in the academic literature no such case studies can be found.

Examples of Shared Spaces in shopping streets can be found in some academic papers, but unfortunately, these papers oftentimes only mention such examples briefly and provide but a cursory description of their spatial design. In the paper of Hamilton-Baillie (2008) he mentions two examples. On the one hand, the Rijkstraatweg in Haren, the Netherlands. This Shared Space was implemented in 2002. On the other hand, the case of Lyngby near Copenhagen, that was implemented in 2003. Furthermore, the paper of Jayakody et al. (2018) discussed the case of Park Lane, Poyton (UK). These cases can function as examples for governments who are planning to implement the concept of 'Shared Space' in one of their shopping streets.

In the report *Shared Space Partner Publication* (Province of Fryslân, 2008) two Shared Spaces in European shopping streets are highlighted. Again, the Rijkstraatweg in Haren is mentioned, of which it is noted that the Shared Space improved the '*attractiveness and economic vitality*' of the street (Ibid., p.26). The second case is the Bremer Straße in the German town of Bohmte. The municipality of this town concluded that economic vitality and quality of the public space were interlinked and that the Shared Space-concept was a good way to stimulate

interaction between 'space, people and economic activity' (Ibid.). Moreover, the municipality stressed that it is important to involve all relevant stakeholders (entrepreneurs and road users) in the process of transforming a conventional street into a Shared Space.

### 2.6.2 Shared Space and economic vitality

Despite the fact that there are no case studies on Shared Spaces in shopping streets, the relationship between the concept of Shared Space and economic vitality has been extensively discussed in research reports. These reports (Besley, 2010; Province of Fryslân, 2008; Reid et al., 2009) argue that the implementation of a Shared Space and its consequences, can have beneficial effects on the economic vitality of the place. They also mention that improving the local economy is often one of the purposes for governments to apply the Shared Space concept.

The main reason that has been proposed for this positive influence on local businesses is the improved quality of the environment that results from the implementation of a Shared Space (Besley, 2010; Reid et al., 2009). In this way, the Shared Space is thought to attract more people and with it, more economic activity. Furthermore, an increase in property values and a higher shop occupancy rate has been reported (Reid et al., 2009).

Another interesting report, 'Good for Business', was published by the South-Australian Heart Foundation (2011). In this report, the Foundation enumerated and explained the benefits of creating a walking- and cycling-friendly environment for local businesses. The benefits of these pedestrian-friendly shopping streets are as follows. According to the Heart Foundation, allocating space to bicycle parking can result in 'higher levels of retail spend' than when this space was to be allocated to car parking (Tolley, 2011, p.7). Furthermore, pedestrian-friendly shopping streets attract more people that visit the area with shopping as their primary purpose. Finally, other benefits for shopping streets are: reduction of noise levels due to the reduction of motorized traffic; people are stimulated to spend more time outside; retail rental values increase; there is more use of active modes of transport (Ibid.).

The findings in this report apply very well to the concept of Shared Space. First of all because a Shared Space is a pedestrian- and cyclist-friendly environment. Secondly because the Heart Foundation recommends certain interventions that are already incorporated in the concept of Shared Space, such as adding furniture; natural components; a reallocation of road space and a reduction of speed limits (Ibid.).

### 2.6.3 Der Flaneur

Finally, Shared Spaces in commercial streets might not only attract people that have shopping as their main purpose, but there might also be people that visit the shopping street just for strolling. In *Das Passagen-Werk*, written by German cultural philosopher Walter Benjamin, a chapter has been dedicated to this phenomenon of

strolling – or, as Benjamin names it, *flanieren* (1983). In addition, Benjamin uses the term *Der Flaneur* for a person that performs the activity of *flanieren*. These terms have their origin in the French culture of strolling through boulevards, as appears from the chapter Benjamin wrote. The English translation is ‘strolling’, but this term does not cover the exact meaning of the French-German version. In Austrian-German the term would be *Der Bummler* and in German the term used is *Der Spaziergänger* (C.H. Yamu 2020, personal communication, June 30).

In his chapter on *Der Flaneur* Benjamin argues that city streets are the property of the public, where people can wander for hours among all kinds of people with all sorts of backgrounds. Despite the fact that strolling people pass each other in cities without making contact, the act of *flanieren* can be seen as ‘*das neueste Rauschmittel des Vereinsamten*’/a solution to loneliness (Benjamin, 1983, p.559).

This line of argumentation about strolling as solution to loneliness can be linked to and reinforced by the Austrian term for the concept of ‘Shared Space’, which is the term ‘*Begegnungszone*’. Where the English term ‘Shared Space’ is focused on the shared use of a certain space, the Austrian term (derived from the verb *begegnen*) highlights the possibility of meeting other people in this particular place. A Shared Space in Austria thus seems to carry an extra meaning, on top of the core meaning of shared use of space, that emphasizes a social dimension of the concept of ‘Shared Space’.

Additionally, Benjamin argues that there are certain environments in cities that attract *Flaneurs*, such as railway stations, expositions and department stores. Based on these two points – streets as property of the public and department stores that attract *Flaneurs* – it could be argued that a Shared Space in a shopping street is an open-air department store that is possessed by the public and attracts people that have *flanieren* as main purpose. In other words, specific spatial functions and built environments are perceived by people as attractive environments to go to and spend time in. This relationship between perception and the built environment is explained into more detail in the next paragraph.

## 2.7 Perception of the built environment

In the previous paragraphs, the concept of Shared Space was explored from several points of view. In this paragraph, the concept of ‘perception’ and its relation to the built environment will be explained.

In the context of Shared Space, it is remarkable that so few studies have yet adopted a qualitative method of research, by investigating how people subjectively experienced Shared Space-environments.

Furthermore, while the concept of perception was used in several studies on built environments, the concept is seldomly defined or explicitly operationalized. However, some definitions can be found in the academic literature. Sheppard et al. refer to perception as ‘*the process of seeing or otherwise perceiving phenomena, leading to particular responses or states which include both cognitive and affective*

outcomes' (Sheppard, 2005, p.638). Bishop & Rohrmann (2003) endorse this definition in their research into subjective responses to environments. According to them, cognitive outcomes are expressed through comprehension and understanding of the spatial environment, while affective outcomes are expressed by the feelings and emotions of road users that are generated by the environment.

In line with their argument, Zube et al. (1982) referred to perception as the interaction between the human and the landscape. Adding to this, Al-Mashaykhi & Hammam stated that this interaction is expressed through behavior because *'behavior is the manifestation of human response to the environment'* (2020, p.5). In other words, the landscape/environment can alter the perception of road users. As such, the spatial design of an environment can be used to elicit certain behaviour in road users.

Such a desired perception is usually expressed in two opposing but related manners in the academic literature: perceived risk and perceived safety. On the one hand, Karndacharuk et al. (2014) argued that the idea behind the concept of Shared Space is one of perceived risk, leading to more awareness and careful behavior in a Shared Space-environment. On the other hand, according to Pyrialakou et al. the perceived safety in a Shared Space *'is assumed to be a potential factor affecting people's attitudes, behaviors, and intentions'* (2020, p.250).

Karndacharuk et al. (2016) explicitly investigated the perception of Shared Space through a questionnaire among road users. In their study, perception was operationalized through five statements: one's own behavior in the Shared Space, the behavior of other road users in the shared environment, the feelings of safety of the survey respondent, the impression of the environment itself and the economic function of the Shared Space. These indicators largely question about the emotive (feelings of safety), behavioral (behavior of road users, including respondent's own behavior) and cognitive outcomes of perception as described above. However, the cognitive outcome appears less clearly from this survey because there is no question pointing to the respondent's understanding of the Shared Space-concept and environment. A statement exploring this could for instance be *'I know what attitude and behavior is expected of me in this environment'*.

According to Kaparias et al. (2012) the perception of a Shared Space-environment differs among different types of road users. While the perception of pedestrians *'is expressed as the comfort in sharing space with vehicles'* (Kaparias et al., 2012, p.298), drivers differ in this matter. For them, it is not about the comfort of sharing space, but about the willingness to share space with other types of road users.

Kaplan et al. applied the concept to cyclists and emphasized their role in traffic in their 2019 article, in which they stated that cyclists have a lower hierarchical status in cultures that are car-oriented. They argue that this hierarchy results in particular attitudes among drivers towards cyclists, for instance that drivers are more likely to share the road when they cycle themselves as well and thus think positively of cyclists (Ibid.). They propose that involving cyclists in Shared Spaces is not only a matter of

designing infrastructure, but also a matter of improving '*the social climate on the road*' (Ibid., p.56).

Various other elements that contribute positively to the perception of a Shared Space are mentioned in the literature. Gehl (2011) argues that the perception and processing of information is optimal at a speed of five to fifteen kilometers per hour. In order to maintain the viability and safety in the Shared Space, it is therefore important that both car drivers and cyclists do not exceed this speed. In addition to this, both furniture and natural elements seem important for road users to feel more comfortable in a Shared Space (Al-Mashaykhi & Hammam, 2020; Kaparias et al., 2012). The level of lighting in particular contributes to the perception of safety in a Shared Space. The presence of other road users has a substantial influence on perceptions well, as pedestrians feel more comfortable with minimal traffic, while car drivers perceive the Shared Space more positively when the pedestrian density is low and vulnerable road users, such as children and elderly, are absent (Kaparias et al., 2012).

Finally, in the report written by Reid et al. (2009) the authors state the perception of road users of a certain area improves as a result from the implementation of a Shared Space. However, they add that pedestrians tolerate vehicles moving through the environment, but that they generally prefer a pedestrian zone from which motorized traffic is banned. This can be linked to the finding of Kaparias et al. (2012) that pedestrians perceive a Shared Space more positively when there are safe zones implemented in the environment.

All in all, based on the academic literature it can be argued that perception of Shared Space consists of a visual observation, feelings and the resulting behavior. The theory on Shared Space can be combined with the theory on perception to construct a conceptual framework, which will be explained in the next paragraph.

## 2.8 Conceptual framework

In the conceptual framework in Figure 5, theory on the concept of Shared Space is combined with theory on perceptions of environments. The framework shows that a Shared Space is first and foremost embedded in a spatial, social and political context. After all, a Shared Space is implemented in a certain street, where certain rules and laws are in force, which is in turn located in a particular town or city, where a distinctive culture prevails.

The next component of the conceptual framework is the perception-sphere. This sphere is embedded in the spatial, social and political context because the person that is perceiving the Shared Space is member of a certain society with a distinct political system and culture. Indirectly, the perception of the person will be influenced by this.

The (light blue) rectangle in the middle of the framework represents Shared Space and summarizes its principles. To the previous list of principles, a seventh element has been added, which is the presence of other people in the Shared Space.

Although not separately mentioned in this theoretical framework, the presence of other people appeared important because road users are forced to interact in order to navigate their way in the Shared Space. Furthermore, the behavior of other road users is likely to have an impact on how people perceive the Shared Space.

Finally, the perception consists of three parts: seeing, feeling and behavior. First a person visually observes some (or all) elements of a Shared Space (indicated by the line between visual perception and the blue box) from a certain personal role: pedestrian, cyclist or car driver. This results in both cognitive and emotive outcomes (arrows from blue rectangle to 'emotive outcome' and 'cognitive outcome').

On the one hand, it results in the awareness that he/she is located in a Shared Space-environment where different rules apply than in a conventional street (cognitive outcome). This understanding is reflected in the behavior of the road user. On the other hand, this awareness subsequently has an influence on the feelings (emotive outcome) of the road user. Furthermore, the feelings of the road users impact his/her behavior as well (see arrow from 'feeling' to 'behavior'), according to Monderman's basic idea behind the concept of Shared Space.

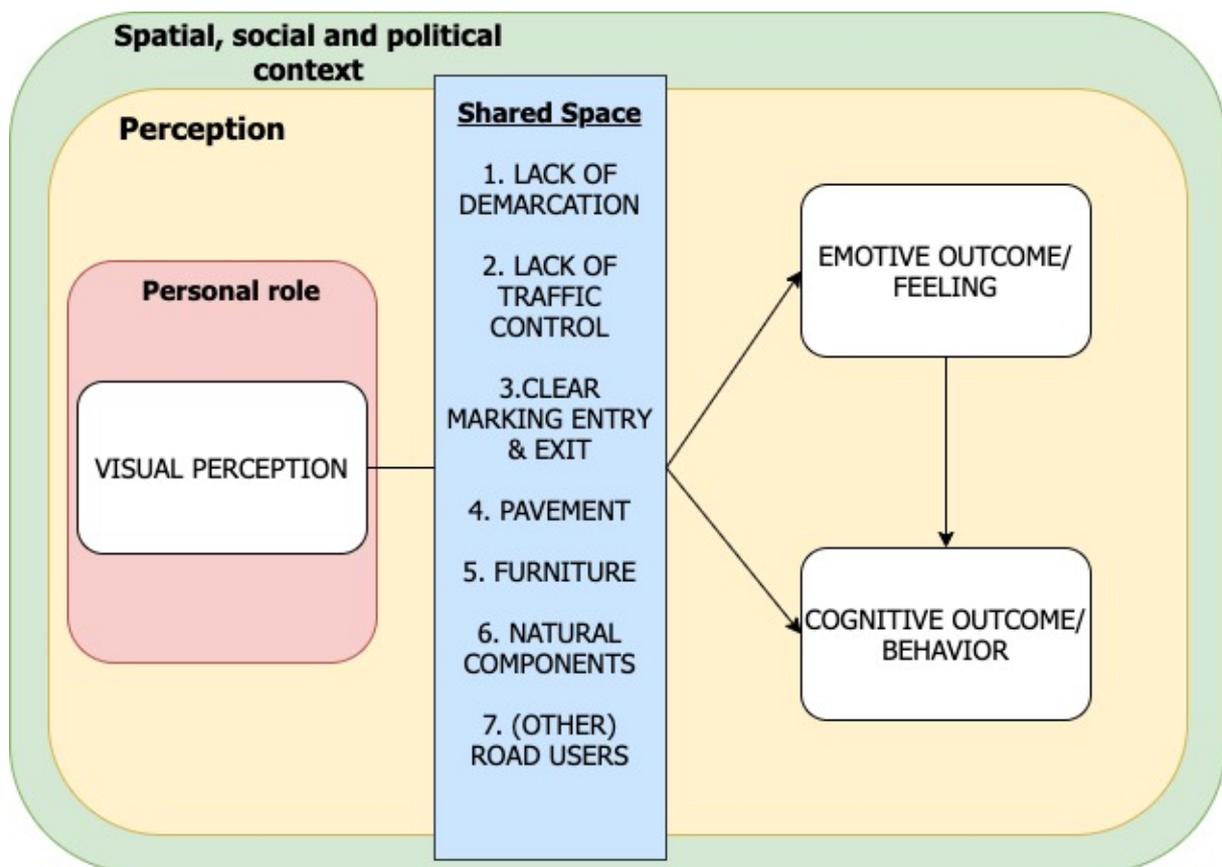


Figure 5: Conceptual framework 'Perception of Shared Space'.

## 3. Methodology

### 3.1 Research approach

For the case study of the Mariahilfer Straße in Vienna I applied a combination of quantitative and qualitative research methods; a spatial analysis, a secondary literature analysis, a social media analysis and interviews. These methods are all insightful by themselves, but only by applying them in concert did the most complete picture emerge regarding the way different groups of people perceived the Dutch concept 'Shared Space' in the international context of the Mariahilfer Straße in Vienna. Employing such a holistic focus, which is characteristic to a case study according to Punch (2014), thus allows me to understand the wholeness of my case and therefore to answer my research questions sufficiently. Below, the value and limitations of each method are discussed.

The spatial analysis was performed through *Google Earth* and aimed to map all spatial design elements of the Shared Space in the Mariahilfer Straße. However, this analysis did not provide any information about the usage of the Shared Space and its particular elements. Another limitation is that *Google Earth* is a snapshot, thus excluding the most recent spatial developments from the analysis.

The secondary literature analysis was useful to get acquainted with the social, economic and political dimension of the Shared Space. It provided information on both the process prior to the implementation of the Shared Space and the eventual functioning of the street after the implementation. Furthermore, information on perceptions of the Shared Space could be derived from the secondary sources.

Thirdly, a social media analysis was performed on pictures and comments that had been posted about the Shared Space in the Mariahilfer Straße on social media platform *Instagram*. This method provided insight into the way people perceived the Shared Space in the Mariahilfer Straße. However, the limitation of this method is that it might result in a one-sided view, since *Instagram* is generally used to capture positive experiences. Therefore, the other methods are needed to complement the knowledge gained from the social media analysis.

Lastly, semi-structured interviews with three groups of people were conducted. The first group were Viennese political experts, the second group consisted of experts from academia and practice in Vienna, while the last group represented the general public of the Mariahilfer Straße. Expert interviews provide an in-depth insight in the circumstances of the implementation and functioning of the Shared Space, but do not provide an overview of different perceptions of the Shared Space in the Mariahilfer Straße. Furthermore, in-depth interviews result in a deeper understanding of the perspective users have of the Shared Space in the Mariahilfer Straße. A limitation of this method is that it is difficult to uncover generic trends in the perceptions of Shared Space.

## 3.2 Methodology and data collection

In this paragraph, the focus is on the applied methods and the data collection. Firstly, the operationalization of the research subject *perception* is clarified. Thereafter, the data collection and data analysis methods are discussed into detail.

### 3.2.1 Operationalization of *perception*

The definition of the concept of 'perception' is twofold (lexico.com, n.d.) and corresponds to the definition that Sheppard (2005) formulated in his paper (see §2.7). Perception is both '*the ability to see, hear, or become aware of something through the senses*' (lexico.com, n.d.), as well as '*the way in which something is regarded, understood, or interpreted*' (Ibid.). The first part of the definition emphasizes the role of the senses in perception. The second part of the definition adds the element of processing to this primary, sensory notion of perception. These are linked to the cognitive and emotive outcomes as described by Sheppard (2005).

Based on these definitions, the operationalization of the perception of Shared Space consists of, on the one hand, the person's sensory perception of the Shared Space. This first part can be determined by letting a person (either a user, or an expert) describe the spatial environment. In secondary sources like newspaper articles, the descriptions and observations of the Shared Space are similar to the sensory perception. On the other hand, a person's interpretation or understanding of the Shared Space can be discovered by asking how he/she feels and behaves in the Shared Space environment. Furthermore, the person's opinion about the Shared Space could demonstrate his/her perception as well.

### 3.2.2 Spatial analysis

The spatial analysis was performed through *Google Earth* in order to collect data on the spatial design of the Mariahilfer Straße's Shared Spaces. Through *Google Earth*, every meter of the Shared Space-zones was observed carefully and every spatial element that was observed was categorized as one of five principles that is characteristic to Shared Spaces: demarcation, traffic control, pavement, furniture and natural components. Subsequently, their location was indicated in themed figure ground maps (each principle has its own figure ground map) that were made with *Paintshop Pro 2019*. In this manner, the location, distribution and clustering of elements could be analyzed.

### 3.2.3 Secondary literature analysis

For the secondary literature analysis, several sources about Shared Space in Austria in general, or about the Shared Spaces in the Mariahilfer Straße in particular were consulted. The aim was to discover which aspects of Shared Space are discussed most often in the secondary literature, and to discover the social and political dimensions of the concept 'Shared Space'.

All sources were collected through the use of Google, through information on

several webpages or through the webpages of different (leading) newspapers. The sources range from newspaper articles, informative websites and reports to a government document. Only newspaper articles published between January 1, 2010 (when the debates about the transformation of the Mariahilfer Straße started) and January 1, 2016 (six months after the completion of the transformation) were selected.

The variety of secondary literature sources provided information on the case from multiple perceptions and thereby connects well to the research question. The collected secondary sources are listed below:

- 20 newspaper articles from *Der Standard*;
- 8 newspaper articles from *Die Presse*;
- A newsletter about the transformation of the Mariahilfer Straße, published by the Viennese department for urban development (*Stadtteilplanung und Flächennutzung*, 2014);
- Informative website *Begegnungszonen in Österreich*;
- Two reports: *Exkursionsprotokoll zum Spezialthema Shared Space/Begegnungszone* (Buchhart, 2015), and *Evaluierung der Verkehrsberuhigung und des Umbaus der Inneren Mariahilfer Straße – zentrale Ergebnisse* (SORA, 2015);
- Austrian traffic regulation document: *Gesamte Rechtsvorschrift für Straßenverkehrsordnung 1960* (RIS, 2013).

All sources were coded inductively through ATLAS.ti. Thereafter, the coding results were analyzed in order to discover important social and political dimensions of Shared Space according to Austrian and Viennese journalists, authorities and researchers.

### 3.2.4 Social media analysis

The social media analysis was performed on 77 pictures and comments that had been posted on the social media platform *Instagram*. The concept of 'Shared Space' is very suitable for a social media analysis since worldwide over 1 billion people post pictures on Instagram of what they see (FameMass, 2019). Such a capture of a visual observation can be seen as an element of 'perception'.

In order to find posts and comments on Instagram about the Shared Space in the Mariahilfer Straße, the symbol system of Instagram ('@' for an account or a geographical location; '#' to indicate the content of the comment or the picture) was used to formulate search terms that allowed me to find posts that visualized and commented on the Mariahilfer Straße and its Shared Spaces. These posts were coded inductively through ATLAS.ti and subsequently, the coding results were analyzed in order to uncover different perceptions Instagram-users have of the Shared Space in the Mariahilfer Straße.

### 3.2.5 Interviews

Lastly, nine semi-structured interviews were conducted with three groups of participants. The interviews were taken from May 28, 2020 to June 12, 2020 and took twenty to sixty minutes each. Consent to use the interviews for this research was gained from all participants.

The focus of the interviews with political experts was on the political dimension of the transformation of the Mariahilfer Straße into two Shared Space-zones. The decision-making and implementation process prior and simultaneously to the transformation were addressed in great detail, but the eventual functioning of the Shared Spaces was discussed only briefly.

The focus of the interviews with experts from academia and practice was on the theoretical and practical perception of the Shared Space in the Mariahilfer Straße. The case of the Mariahilfer Straße was mainly discussed in relation to the theoretical notions of the concept 'Shared Space' in these interviews, but its functioning was addressed as well.

Lastly, the interviews with the general public were focused on what the interviewees observed in the Shared Space as well as how they felt when they moved through the Shared Space as either a car driver, cyclist, or pedestrian. Their behavior was addressed in the interviews as well. In Table 1, a descriptive overview of all interviewees is presented.

Type of interview	Referenced to as:	Role of the interviewee	Gender	Nationality	Occupation
<b>Expert interview</b>	'Expert interview 1'	Politician at the times of the transformation	Male	Austrian	Party member SPÖ & member of City Council of Vienna
<b>Expert interview</b>	'Expert interview 2'	Politician at the times of the transformation	Male	Austrian	Party member Die Grünen & member of City Council Vienna
<b>Expert interview</b>	'Expert interview 3'	Expert from academia	Female	German	Professor of Public Space & City Culture
<b>Expert interview</b>	'Expert interview 4'	Expert from planning practice	Male	Dutch	Traffic planner in Vienna

<b>Expert interview</b>	'Expert interview 5'	Expert from planning practice	Female	Austrian	Architect with an office in the Mariahilfer Straße
<b>In-depth interview</b>	'In-depth interview 1'	General public	Female	Austrian	Working
<b>In-depth interview</b>	'In-depth interview 2'	General public	Female	Dutch	Working
<b>In-depth interview</b>	'In-depth interview 3'	General public	Female	Austrian	Student
<b>In-depth interview</b>	'In-depth interview 4'	General public – perspective of a visually impaired person	Male	Nigerian/ Austrian	Pensioner

*Table 1: Descriptive overview of interviewees.*

The interviews were coded either by means of a deductive codebook (applies to the interviews with political experts and the experts from academia and practice), or in an inductive manner (applies to the interviews with members of the general public). The coding and the analysis of the coding results were performed through ATLAS.ti.

All transcripts and codebooks – of both the expert interviews, the in-depth interviews, the social media analysis and the secondary literature analysis – were submitted via additional files and are not attached to this document as appendices. The interview guides and code trees, however, can be found in Appendix B and C.

### 3.3 Ethics

During the entire research process the principles of the Dutch code of conduct for research integrity – honesty, scrupulousness, transparency, independence and responsibility – have been respected (NWO, 2018). I have considered every step in the process carefully and I worked according to a research plan that was approved by my supervisor.

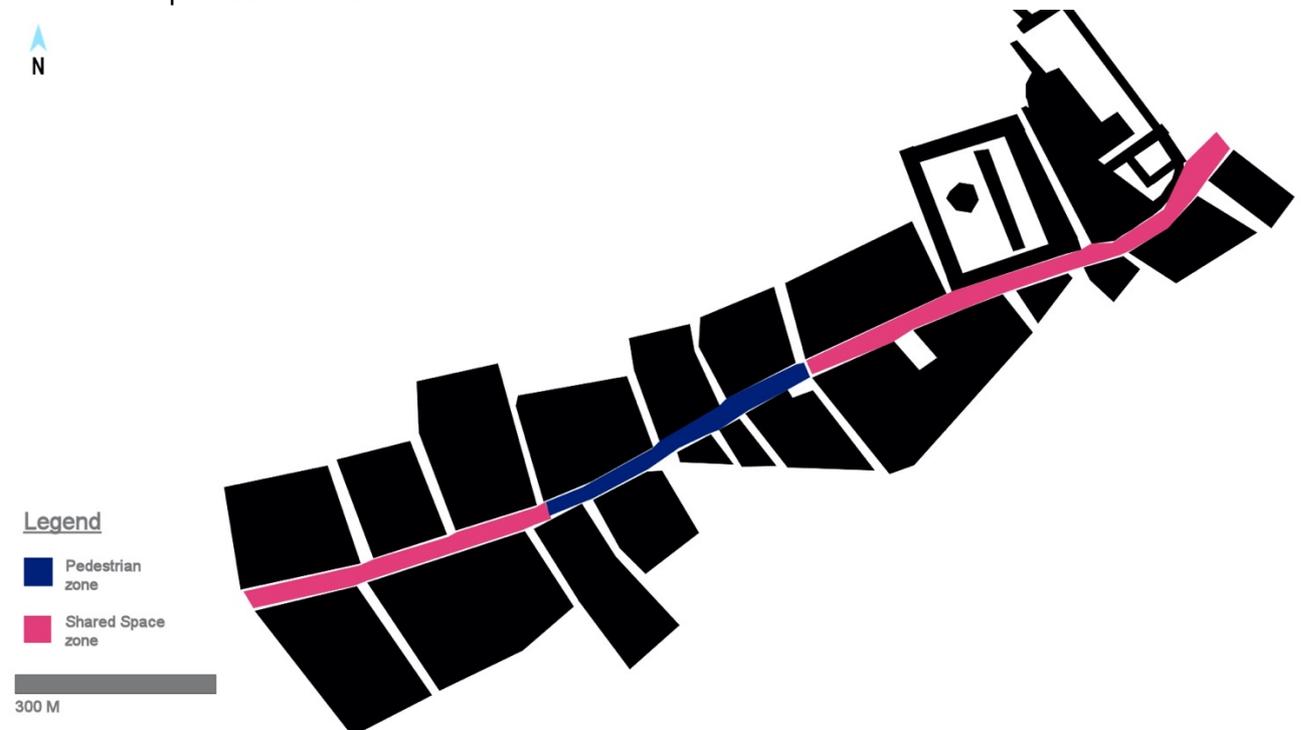
Since this research partially relies on conducting interviews with interviewees, complying to the code of ethics for social research (National Ethics Council for Social and Behavioural Sciences, 2018) is essential as well. This code emphasizes the importance of obtaining an informed consent from the participants. From every interviewee an informed consent was obtained regarding their participation as well as the recording and use of the interview. Additionally, the interviews were anonymized and all data (recordings, transcripts and ATLAS.ti-projects) were stored on a personal, password-secured laptop.

Now that the research approach, the methods for data collection and data

analysis and the research ethics are clarified, in the next paragraph a detailed description of this case study's case is provided.

### 3.4 Case study description

The Mariahilfer Straße is a shopping street in Vienna that is located between the Schloßallee and the Museumplatz/Getreidemarkt. The part that is central to this research, and thus the case study of this research, is located on the border between the 6<sup>th</sup> and 7<sup>th</sup> district of Vienna between the Neubaugürtel and the Museumplatz (Map 1). From 2011 until 2015 this part has been transformed into one pedestrian zone (Austrian-German: *FUZO*) and two Shared Spaces (Austrian-German: *Begegnungszonen*) under the project name 'Mariahilfer Straße Neu' (the new Mariahilfer Straße). The goal of this transformation was calming the traffic in the street (Austrian-German: *Verkehrsberuhigung*; Stadt Wien, n.d.). In the figure ground map below, the areas marked in pink are the Shared Spaces and the area marked in blue is the pedestrian zone.



Map 1: Figure Ground Map of the Mariahilfer Straße.

The first Shared Space in the Mariahilfer Straße is located between the Kaiserstraße and the Andreasgasse and covers circa 460 meters of the entire street. The second one is located between the Kirchengasse and the Museumplatz/Getreidemarkt and is circa 740 meters long (*Begegnungszonen in Österreich*, n.d.). In order to be able to reference clearly to either one of the Shared Spaces, the website *Begegnungszonen in Österreich* (on which all Austrian Shared Spaces are documented) uses the name 'Begegnungszone West' for the first Shared Space and 'Begegnungszone Ost' for the second. In this thesis the English equivalents 'Shared Space West' and 'Shared Space East' will be used.

On a last note, when referring in this thesis to both Shared Spaces simultaneously the singular form 'Shared Space' is used. Both Shared Spaces were initiated and designed with the same goal in mind, which is limiting the traffic in the Mariahilfer Straße. It would therefore not be illogical to consider them as *one* Shared Space. For the purpose of clarity however, the terms 'Shared Space West' and 'Shared Space East' will be used when pointing out a particular detail on a specific location in either one of the Shared Spaces.

## 4. Results

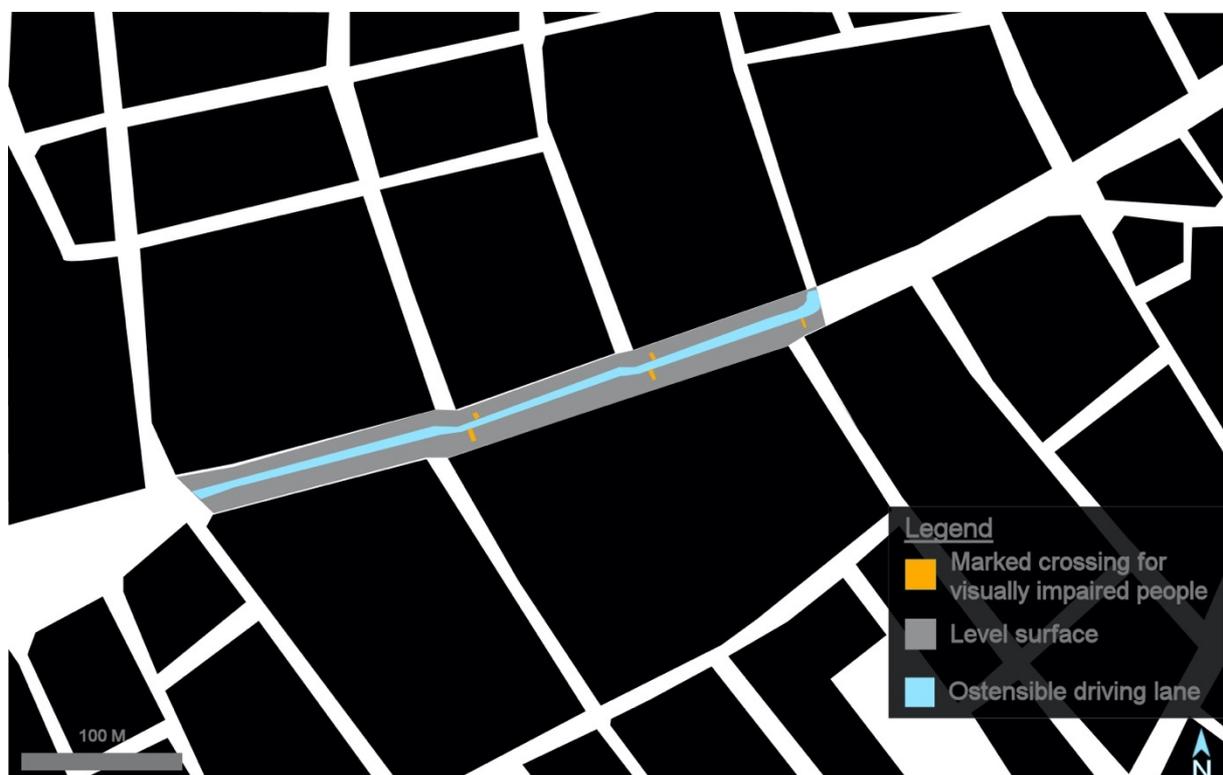
### 4.1 Spatial analysis of the Shared Space

This section will centre on the spatial dimension of the Mariahilfer Straße, for which *Google Earth* is used to identify the different spatial elements present in the Shared Space. This analysis will employ the same spatial elements as were mentioned in Chapter 2: lack of demarcation, lack of traffic control, clear marking of entry and exit, pavement/surface, furniture and the natural elements.

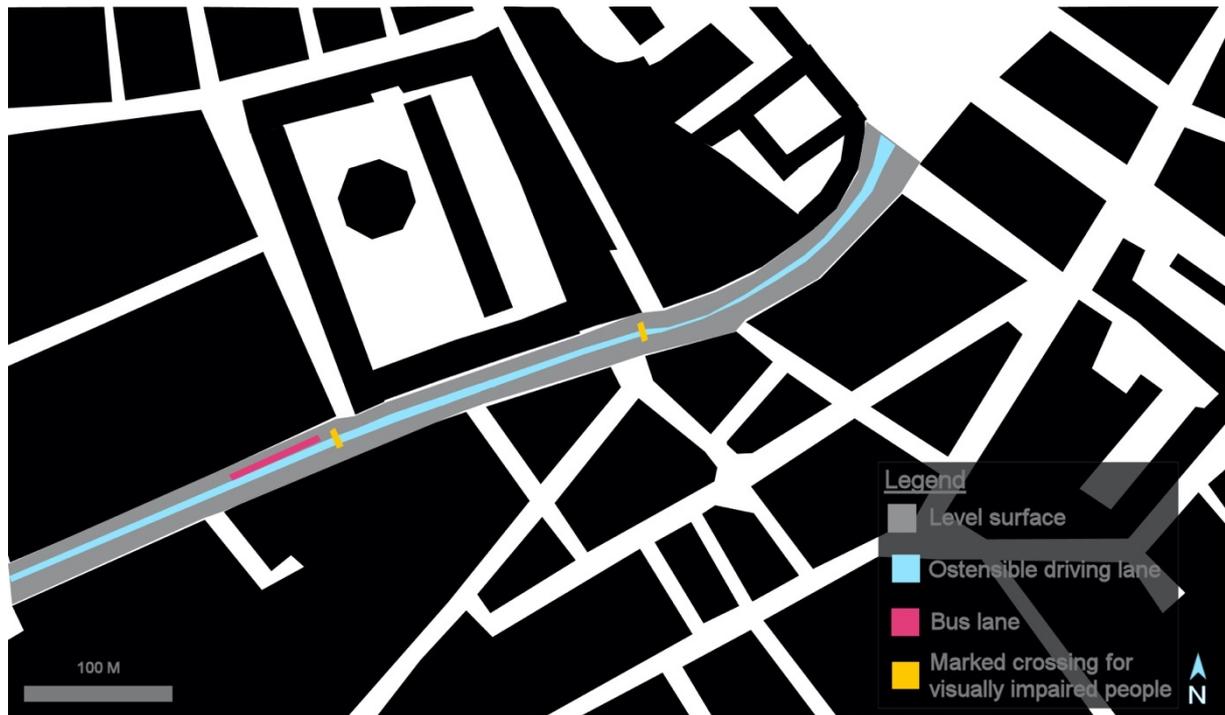
The output of this analysis consists of ten figure ground maps – five for Shared Space West and five for Shared Space East – in which the location of every single design element is indicated. It must be noted that the actual size and location of the elements might differ slightly from their size and location on the maps.

#### 4.1.1 Lack of demarcation (Map 2-3)

The lack of demarcation, that results in the integration of different road users, is characteristic to the concept of Shared Space (Karndacharuk et al., 2014). So too the Shared Space in the Mariahilfer Straße, which lacks curbs, ramps or other elements that could separate road users from each other. The street also has a level surface consisting of a continuous pavement (grey), which supports the integration of different road users. However, the street is not completely free of demarcation, as the paved surface in the middle of the street differs from the sides, resulting in an ostensible driving lane (light blue).



Map 2: Figure ground map demarcation in Shared Space West.



Map 3: Figure ground map demarcation in Shared Space East.

#### 4.1.2 Lack of traffic control & clear marking of the entry and exit (Map 4-5)

According to Karndacharuk et al. (2014) it is important to mark the entry and exit of a Shared Space because different rules apply to a Shared Space than to a conventional street. This spatial analysis and the secondary literature analysis (see §4.2 of this chapter) show that the Austrians mark the entry and exit with a particular traffic sign (red, Figure 6).

Furthermore, a combination of a traffic sign and a traffic light is used in two particular traffic situations (dark green). In one instance, this traffic control element is used to make road users aware of an approaching bus (see Figure 7). The other one is used to facilitate street crossings for the visually impaired (yellow in Map 2-3), together with the implementation of tactile delineator pavement. These measures are important due to their vulnerable position in a Shared Space (see §2.5 of the second chapter). The amount of traffic sign-lights, corresponds to the amount of side streets that intersect the Shared Space. These traffic control elements mentioned above, clearly contribute to the safety and viability of the Shared Space, which is corresponds to the findings of Jayakody et al. (2018; see chapter 2).

Some other traffic control elements, that do not contribute as much to the viability and safety of the area, are also present in the Shared Space, such as parking bans, road markings that indicate taxi stops, handicapped zones, bus zones and loading/unloading areas (green, orange and light blue). Again, the amount of traffic signs seems to correspond to the amount of side streets in the Shared Space.



Map 4: Figure ground map traffic control elements in Shared Space West.



Map 5: Figure ground map traffic control elements in Shared Space East.



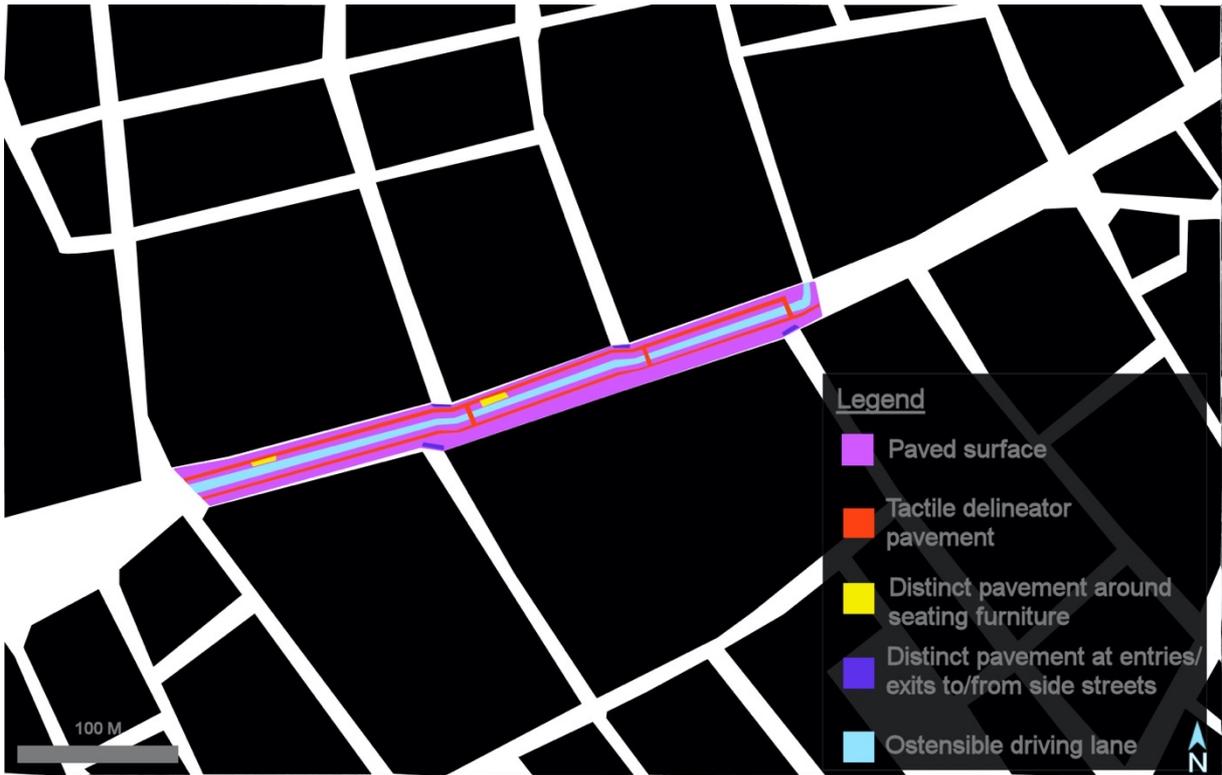
Figure 6: Traffic sign 'Start of Shared Space'. Source: Rechtsvorschrift für Straßenverkehrsordnung, 2013, p.69.



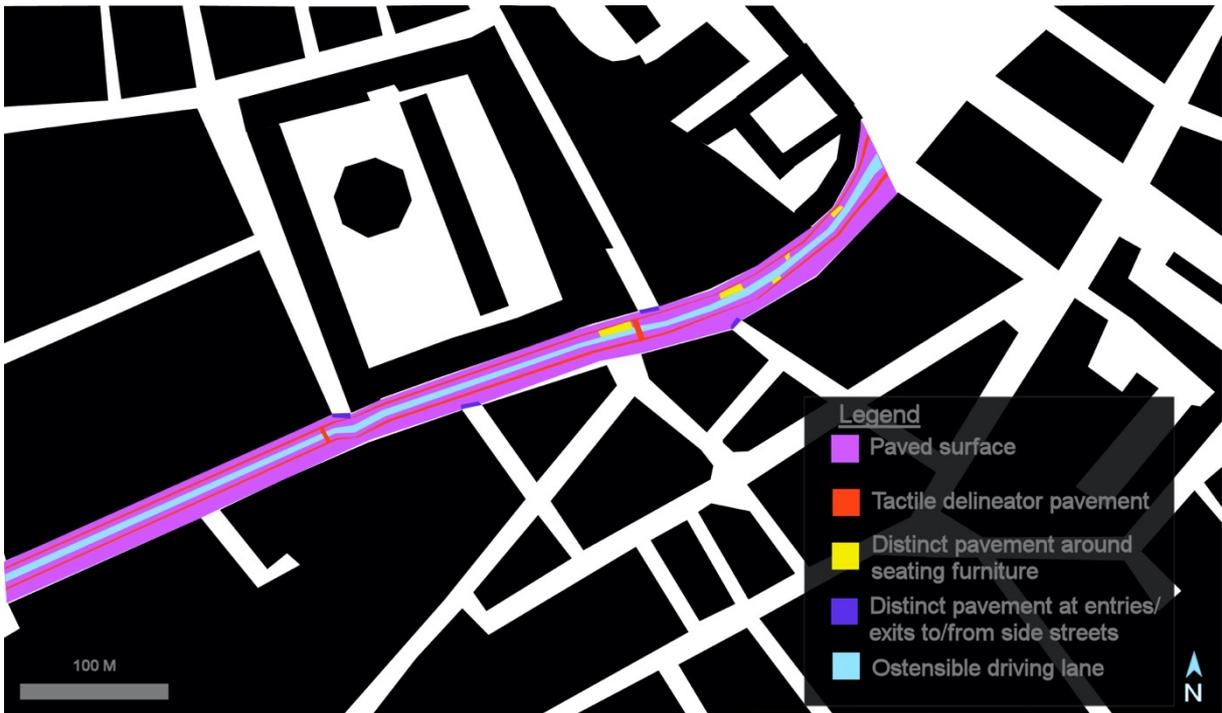
Figure 7: traffic sign + light that indicates an approaching bus on the intersection of the Capistrangasse and the Mariahilfer Straße. Source: Google Earth, 2019.

#### 4.1.3 Pavement (Map 6-7)

The analysis shows that both Shared Spaces contain a continuous, paved surface (pink). Additionally, several deviations can be found in this pavement. First of all, there seems to be a driving lane in the middle of street (light blue), which was already pointed out in §4.1.1 of this chapter. Secondly, in the Shared Spaces along both sides of this driving lane tactile delineator bands are applied (orange). In addition, this pavement for visually impaired people is crossing the driving lane at several spots as well in order to enable them (in combination with the special traffic sign-light, as highlighted in §4.1.2 of this chapter) to cross the street safely. Thirdly, at every intersection of the Mariahilfer Straße with one of its side streets, the pavement deviates slightly (purple).



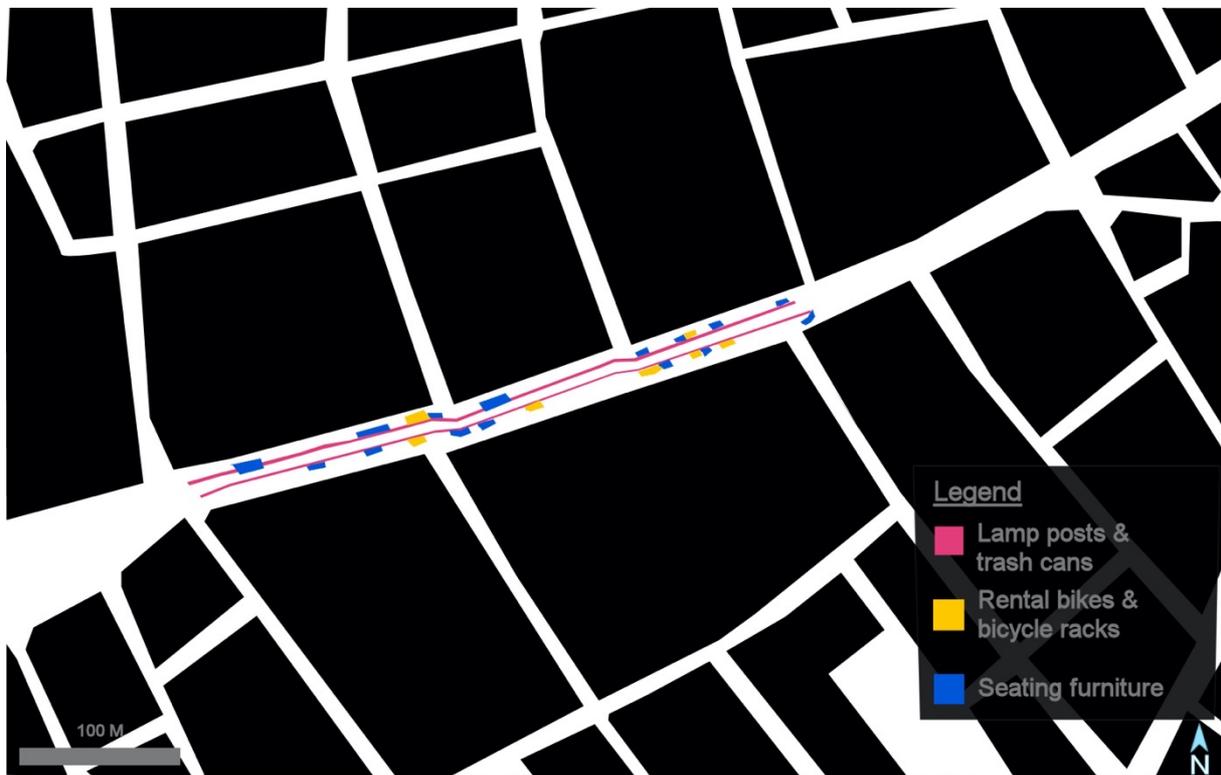
Map 6: Figure ground map pavement in Shared Space West.



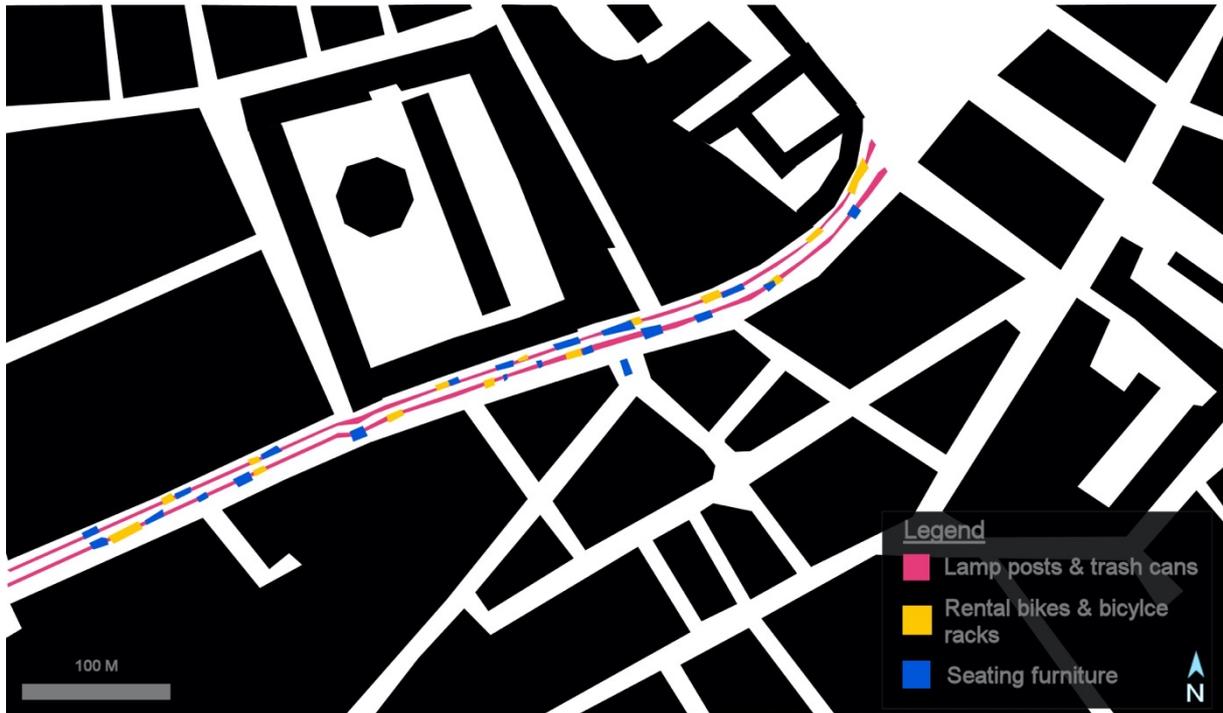
Map 7: Figure ground map pavement in Shared Space East.

#### 4.1.4 Furniture (Map 8-9)

The analysis shows that all types of furniture that are mentioned in the academic literature (see §2.4.5 of this chapter) are present in the Shared Space in the Mariahilfer Straße. Bicycle racks (yellow) were put in place in order for cyclists to be able to stall their bicycles and in each Shared Space rental bikes are available (yellow). In Shared Space East there are significantly more bicycle racks. This could correspond to the number of restaurants in this part of the Mariahilfer Straße and to the length of this Shared Space. Lamp posts were erected along both sides of the ostensible driving lane in order to improve the visibility and overall atmosphere at night (pink). Lastly, public benches were constructed on several spots along the Mariahilfer Straße (blue). These benches are often combined with planters (see Figure 8) and sometimes with a deviating pavement (yellow on Map 6-7). The furniture in the Shared Space clearly contributes to the additional function of a Shared Space as a place to sojourn (Methorst et al., 2007).



Map 8: Figure ground map furniture in Shared Space West.



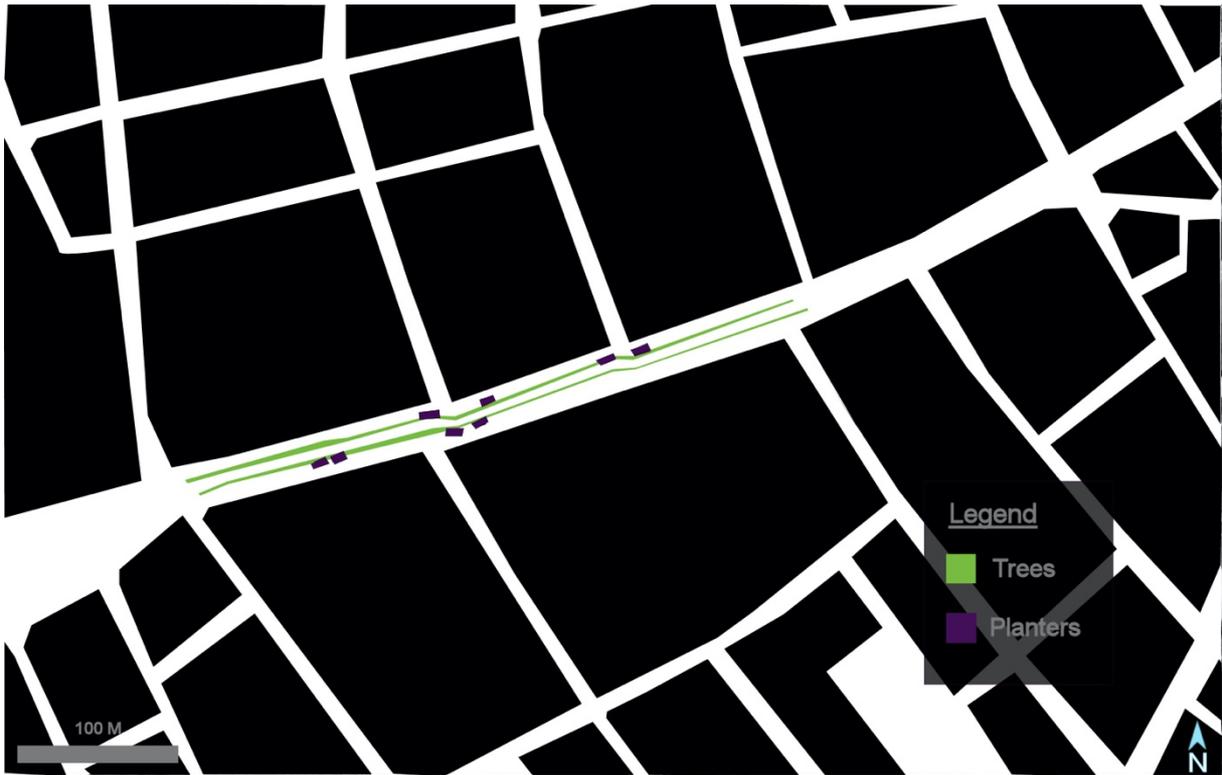
Map 9: Figure ground map furniture in Shared Space East.



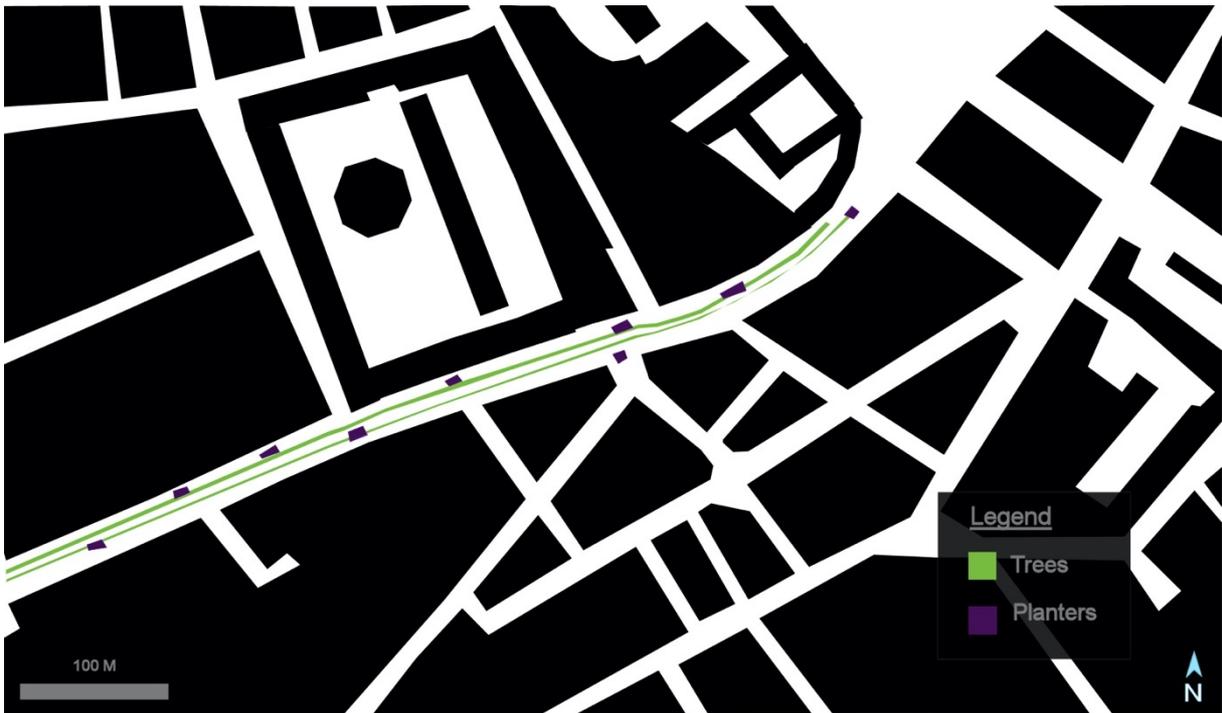
Figure 8: Seating furniture combined with natural elements and deviating pavement near Mariahilfer Straße no.103. Source: Google Earth, 2019.

#### 4.1.6 Natural components (Map 10-11)

The analysis shows that several natural components were integrated into the Shared Spaces in the Mariahilfer Straße. Firstly, trees were placed at regular intervals on both sides of the driving lane (green, in between the trees there are lamp posts and trash cans, pink on Map 8-9). The trees are not the only natural elements in the Shared Spaces, as there are numerous planters as well, that are filled with grasses and small trees (dark purple, Figure 8).



Map 10: Figure ground map natural components in Shared Space West.



Map 2: Figure ground map natural components in Shared Space East.

## 4.2 Secondary literature analysis

For an immediate understanding of the coding results, see Table 2 below. In this table the occurrence of each code in the secondary literature enumerated above is specified. In the following paragraphs, these results will be placed into the context of this research.

**Code occurrence table *Secondary literature analysis***

Code	Occurrence	Code	Occurrence
Advantages	12	Disadvantages	1
Amenities and design	8	Flanieren	8
Austrian law	18	Furniture	3
Beloved elements	4	Grand opening	2
Beneficial for local economy	1	In favour of transformation	4
Budget	1	Negative opinion car drivers	1
Conflict in Shared Space	1	Participation process	9
Confusion among road users	3	Pedestrians stay on sidewalk	2
Critique concerning bus line	5	Politics	1
Critique concerning cars	4	Prestige project	2
Critique from shop owners	5	Protest	1
Critique on process	2	Reduction of traffic	1
Critique on Vassilakou	3	Safe feeling pedestrians	3
Danger for visually impaired people	1	Shopping	1
Description Shared Space	2	Social activities	1
Design	18	Traffic calming strategy	1
Design for visually impaired people	3	Youngsters in favour of the transformation	3
Desires before transformation	1		

*Table 2: Code occurrence table Secondary literature analysis.*

### 4.2.1 Austrian traffic regulation

The concept of 'Shared Space' (in Austrian: *Begegnungszone*) was added to the Austrian traffic regulation document in 2013 (RIS, 2013). This is remarkable because the Shared Space-concept cannot be found in any document on traffic regulation in the concept's country of origin, The Netherlands (*Reglement verkeersregels & verkeerstekens 1990; Wegenverkeerswet 1994*). The reason for this might be that the Dutch professionals perceived Shared Spaces as neither a traffic concept nor a traffic safety concept. Instead, they consider Shared Spaces to be an integral vision on an area (CROW, 2011). As appears from the expert and in-depth interviews and the newspaper articles as well, the design and functioning of the Shared Space in the Mariahilfer Straße is strictly governed by Austrian regulations.

In these regulations both the design and the behaviour of the road users has been established. For instance, the entry and exit of a Shared Space-zone must be indicated by a particular traffic sign (see Figure 9). Furthermore, the areas where cars,

taxi's and trucks are allowed to load and unload or park their vehicle must be indicated with road markings. Concerning the behaviour of road users, the regulation prescribes that road users are not allowed to hinder each other in the Shared Space (see Figure 9; excerpt from §76c on *Begegnungszonen*):

(2) In Begegnungszonen dürfen die Lenker von Fahrzeugen Fußgänger weder gefährden noch behindern, haben von ortsbundenen Gegenständen oder Einrichtungen einen der Verkehrssicherheit entsprechenden seitlichen Abstand einzuhalten und dürfen nur mit einer Geschwindigkeit von höchstens 20 km/h fahren. Lenker von Kraftfahrzeugen dürfen auch Radfahrer weder gefährden noch behindern.

(3) In Begegnungszonen dürfen Fußgänger die gesamte Fahrbahn benützen. Sie dürfen den Fahrzeugverkehr jedoch nicht mutwillig behindern.

*Figure 9: excerpt from Austria's document on traffic regulation. Source: RIS, 2013.*

#### 4.2.2 Publications prior to and during the process of implementation

The decision-making and implementation process of the Shared Space in the Mariahilfer Straße was followed very closely by multiple newspapers. The Mariahilfer Straße dominated Viennese politics for a long time, which appears, *inter alia*, from the statement:

*'Seit dem Vorjahr dominiert sie die Kommunalpolitik, die Einkaufsstraße schaffte es sogar in die TV-Debatten zur Nationalratswahl'* (Die Presse, 15-02-2014).

The analysis of the newspaper articles shows that they share a common theme, mainly discussing the most recent developments in the project. Furthermore, various points of view in the debates were highlighted by displaying what kind of critique was expressed against the project, by whom and for what reason. The following groups expressed their doubts or negative opinions about the transformation of the Mariahilfer Straße.

First of all, *Die Linien*, which is the bus line authority, was concerned about the safety of their drivers and that of the other road users in the street. For a while the company deployed extra bus drivers in the front of the bus to offer an extra pair of eyes to ensure the safety of its passengers and that of its environment (Der Standard, 10-09-2013; Die Presse, 12-09-2013). Secondly, *Die Wiener Wirtschaftskammer* stood up for the shops in the Mariahilfer Straße (Die Presse, 16-02-2014; Der Standard, 31-07-2015). There were concerns about the accessibility for their delivery vehicles, and a decrease in customers due to the reduction of motorized traffic. Thirdly, the *Autofahrerclub* argued against the transformation of the shopping street due to the expected increase in travelling time (Der Standard, 31-07-2015). Lastly, within the Viennese political system there were some parties against the project as well, of which the FPÖ and ÖVP in particular (Die Presse, 15-02-2014).

In addition, the newspaper articles sometimes expressed a somewhat negative opinion about the course of the project and the actions of the project's initiator, Vienna's (now ex-) vice-mayor Maria Vassilakou. In *Der Standard* an article was published in May 2013 which states that:

*'Das Projekt "Fuzo in der Mahü" macht einen unentschlossenen, undurchdachten Eindruck'* (Der Standard, 03-05-2013).

Despite the fact that this quote refers to the pedestrian zone, it can be argued that the same (the indecisive and misguided impression) holds for the Shared Space-zones in the Mariahilfer Straße since these and the pedestrian zone were presented and addressed as one project. In a blog in *Der Standard* an author writes the following about Maria Vassilakou:

*'Vassilakou fehlt es offensichtlich an politischer Erfahrung und Professionalität'* (Der Standard, 06-02-2014).

Besides the above-mentioned critiques, the various sources of secondary literature on the Shared Space in the Mariahilfer Straße – including the newspaper articles – mainly discussed two topics. First of all, the design of the Mariahilfer Straße is discussed in great detail in every source. Secondly, the options for participation in the decision-making process are listed, especially in the newsletter published by the Viennese urban development department.

#### 4.2.3 Publications after the completion of the Mariahilfer Straße

After the festive opening of the new Mariahilfer Straße in July 2015 (Der Standard, 27-07-2015), several sources reported on the finished project. The Shared Space in the Mariahilfer Straße was described on the website *Begegnungszonen in Österreich*, where one can find information on the design and amenities in the Shared Space. Furthermore, a handful of newspaper articles were published which reported predominantly positive opinions. Lastly, two reports were published on the functioning of the new Mariahilfer Straße. In these reports, the following outcomes were appointed.

Firstly, the most prominent outcome was that the percentage of people that was in favour of the new Mariahilfer Straße rose from 53% prior to the transformation to 71% after the transformation (Buchhart, 2015; SORA, 2015). This means that people generally perceive the Mariahilfer Straße in its new form positively. Secondly, it was also concluded that mostly youngsters seem to be in favour of the new traffic situation in the Mariahilfer Straße (SORA, 2015). This outcome also emerged from the in-depth interviews, since the Viennese student perceives the Shared Space in the Mariahilfer Straße very positively while the other, older interviewees are more reluctant. Thirdly, the SORA-evaluation (2015) showed that people feel safe in the transformed Mariahilfer Straße. Lastly, the new Mariahilfer Straße seems to be used mostly for shopping and visiting restaurants (SORA, 2015). Additionally, in almost all secondary sources a reference to *flanieren* can be found, which demonstrates the frequent prevalence of this activity.

In conclusion, the transformation of the Mariahilfer Straße and all of its aspects have been widely discussed in the secondary literature. The analysis shows that the design of the street, the critique on the project, and the positive evaluation of the final product have been highlighted to particular extent in newspaper articles, newsletters and reports. Finally, the secondary literature, and especially Austria's traffic regulation, show that the rules and regulations are important in the Austrian context.

### 4.3 Social media analysis

Through the analysis software for qualitative data *ATLAS.ti*, 77 Instagram posts and their comments have been coded inductively. The word cloud in Figure 10 visualizes how often each code occurs in this dataset. The size of the word in the code cloud indicates how frequent the code occurs in the dataset, as compared to the other codes in the dataset.

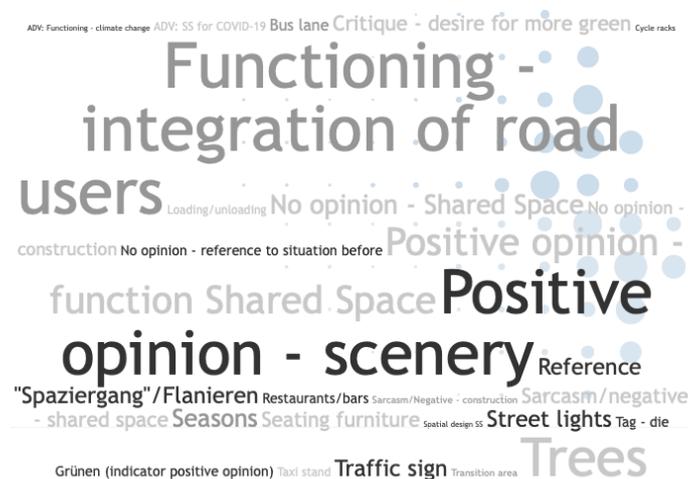


Figure 10: Tag cloud of inductive codes in dataset Instagram posts. Source: *ATLAS.ti*.

First of all, the cloud shows that the public opinion on Instagram regarding the Shared Space in the Mariahilfer Straße is mostly positive and often capture a scenery in the Shared Space. The remaining positive posts pointed out the functioning of the area as a Shared Space. The negative expressions either point to the construction works or to the concept of Shared Space. Lastly, there was a substantial number of posts on Instagram that did not express a particular opinion. See Appendix A for examples of Instagram posts that express no opinion or a positive opinion

An interesting negative opinion about the Shared Space can be found in the comments accompanying a post of *Die Grünen Wien*. The person (@pebellemapebelle) commenting stated that taxis and cars often drive too fast in the Shared Space and that it is therefore safer for pedestrians to divert to the edges of the shared environment (see Figure 13). This would suggest that the Shared Space's underlying principle, the integration of road users, was not achieved in the Mariahilfer Straße.

Secondly, the tag cloud revealed which aspects of the Shared Space were frequently chosen to publish in a post on Instagram. On the one hand, the pictures

on Instagram often represented a traffic situation in which road users were clearly integrated in the same space (see Figure 11). Assuming that a person deliberately photographs a certain situation, publishes it on Instagram and comments on it positively, it can be argued that this person understands what the concept of 'Shared Space' entails. This relates to the cognitive outcome of perception that is described by Sheppard (2005).

A remarkably high amount of people expressed their desire for more trees in the Shared Space in the comments below the posts of the political party *Die Grünen* concerning the Shared Space (see Figure 10, 12 & 13; code: 'Critique – desire for more green').

Some posts in the dataset referred to the Shared Space in the Mariahilfer Straße as *Flaniermeile* or *Spaziergang* (see Appendix A), which relates very well to the Walter Benjamin's theory that boulevards attract 'Flaneurs' (1983, see §2.6.3 of the second chapter) and the German term for *Der Flaneur*; 'Spaziergänger'. Through such expressions, a perception of Shared Space as a place to 'sojourn' and to stroll becomes apparent, confirming what was already assumed in §2.6.3 of the theoretical framework.



Figure 11: Instagram post that shows the integration of road users. Source: Instagram Edda, July 28, 2017.



Figure 12: Comments on Instagram post of Die Grünen. Source: Instagram Die Grünen Wien, November 14, 2019.



Figure 13: Comments on Instagram post that express a desire for more trees. Source: Instagram Die Grünen Wien, November 14, 2019.

#### 4.4 Interviews

In the following paragraphs, the results of first the interviews with politicians, then the interviews with experts from academia and practice, and lastly the interviews with the general public are elaborated on. At the beginning of each paragraph, the coding results of the interviews are presented by means of a code occurrence table.

#### 4.5 Expert interviews: politicians

In this paragraph, the perception of the Shared Space in the Mariahilfer Straße from two Viennese politicians will be discussed. One is a member of the green political party *Die Grünen*, the other represents the social democrat party *SPÖ* in the city council. These parties (including my interviewees) were both in the coalition of the city council during the implementation process of the Shared Space. The perception of the Shared Space during COVID-19, of both the political experts, theoretical experts and the general public, will be elaborated on in the last paragraph of this chapter. In Table 3 below, the coding results of the interviews with the politicians are presented.

**Code occurrence table *Expert interviews with politicians***

<b>Code</b>	<b>Occurrence</b>	<b>Code</b>	<b>Occurrence</b>
Active mobility – beneficial	3	Future challenges – spatial planning and design	0
Active mobility – not beneficial/no change	0	Local businesses – beneficial	3
Climate change – reduction of emission	2	Local businesses – not beneficial	0
COVID – future challenges	1	Physical distance – enabling	2
COVID – physical distance	8	Physical distance – no change	3
Functioning – active mobility	7	Political challenges – awareness	30
Functioning – behaviour of people	2	Quality of public space – bad quality	1
Functioning – climate change/emissions	4	Quality of public space – good quality	7
Functioning – integration of road users	2	Safety – not safe	0
Functioning – local businesses	8	Safety – safe	3
Functioning – natural components	7	Staying area	5
Functioning – quality of public space	12	Traffic area	1
Functioning – safety	4	Traffic flow – no change in speed + bad traffic flow	1
Functioning – traffic area/staying area	4	Traffic flow – reduction of traffic	5
Functioning – traffic flow	9	Traffic flow – slow speed + good flow	3
Future challenges – other	0		

*Table 3: Code occurrence table Expert interviews with politicians.*

#### 4.5.1 Political process

In the interviews both politicians mentioned a number of political challenges that accompanied the discussions about and the implementation of the Shared Space in the Mariahilfer Straße. About the entire process the member of the SPÖ stated:

*‘The political challenge back then was a bit bigger than we were aware of. It was not really clear what was going to be implemented’ (Expert interview 1).*

The Shared Space in the Mariahilfer Straße was going to be the first one in Vienna and therefore the city council could not fully anticipate or plan out its implementation. The project became even more complex due to protests and criticism expressed by various organizations and parties.

Besides this political pushback, the interview with the party member of Die Grünen also brought to light other difficult circumstances in Vienna in which the

project had to be implemented. One of such difficulties arose from Austrian legislature, as several laws hampered the process and forced the politicians to accede to some compromise regarding their initial policy, as the quote below shows:

*'the beginning is a shared space and then there's a pedestrian zone and then there's shared space. The reason for that is that in Austria, if you are the owner of a garage in the street, you must be allowed to go to this garage by car. And luckily, in the inner third, there was no garage' (Expert interview 2).*

An example of another law that hampered the implementation of the Shared Space in the Mariahilfer Straße pertains to parking places, as is described in the quote below by the politician of Die Grünen:

*'there's a law in Austria that says you have to mark the parking lot in shared spaces. If they are not marked on the street, then you can't implement the shared space zone. [...] Laws have to be changed' (Expert interview 2).*

Both quotes show that Austrian legislature complicated the implementation of the principles of the Shared Space-concept. Besides this, the political system in Vienna appeared to be another hampering factor in the process. The interviewee from Die Grünen explained that the city of Vienna consists of several districts, which wield certain powers. He tells:

*'there has to be a majority in the district about measures like paying for the streets, the traffic signs, [...] and stuff like that' (Expert interview 2).*

These circumstances appear to have been decisive for how the concept was eventually implemented. As the politicians primarily perceived the Shared Space-concept as a complex political process, the above-mentioned political circumstances had a major impact on their perception of the concept. In the next paragraph the perception of the functioning of the Shared Space of both politicians is discussed.

#### 4.5.2 The functioning of the Shared Space

In the interviews, the politicians expressed positive opinions about the functioning of the Shared Space. The reason for this could be that the decision-making and implementation process was so complex that they view the proper functioning of the Shared Space as an achievement in its own right

The political experts perceived the main function of the Shared Space in the Mariahilfer Straße to be the reclamation of the streets for people, and aimed to achieve this by limiting traffic:

*'The thing is that our idea is to reclaim the streets for people, not for cars. [...] It's about three quarters of the people don't use the car, but the car drivers have got two thirds of the space' (Expert interview 2).*

This quote shows that the member of the Green Party perceives Shared Space as a more just distribution of space in a city.

Another motive than the Green Party member's distributive justice outlook is voiced by the SPÖ-member, who perceives Shared Space as a sufficient way to improve the quality of the public space and therewith the life quality of the people using the Shared Space. He argues:

*'[In a Shared Space] you're not only moving, but you are also, we say in German 'flanieren', just go and walk, enjoy your life quality' (Expert interview 1).*

This statement of the SPÖ-member can be linked to the theory about *Der Flaneur* and the act of *flanieren*, as described by Benjamin (1983, see §2.6.3), and proves that the political expert perceives the Shared Space in the Mariahilfer Straße as a nice environment to spend time or stroll about in.

In the interviews, the politicians highlighted several benefits of a Shared Space, ranging from offering cool spaces in the urban heat island to stimulating the local economy. Whether the concept of Shared Space is also beneficial to the road users in the Mariahilfer Straße remains debatable. The interviewee from the SPÖ explains that the Shared Space is a safe environment where the different road users coexist and take care of each other in his experience. However, the member of the Green Party observes:

*'This is a problem in our culture in Vienna, that we have to learn everybody to take care of the other traffic participants' (Expert interview 2).*

This statement proves that the socio-cultural circumstances of the environment should be taken in consideration as well when implementing a Shared Space. Adjusting the spatial environment is not enough, a Shared Space is after all based on social interaction.

All in all, this analysis shows that the perception political experts have of the Shared Space-concept in the Mariahilfer Straße is highly dependent on the political context. The eventual functioning of the concept seems to be subordinate to the decision-making and implementation process prior to its functioning. The following paragraph sheds light on the perception experts from academia and practice have of the Shared Space in the Mariahilfer Straße.

#### 4.6 Expert interviews: experts from academia and practice

Besides these political experts, three other experts, working in academia and practice, were interviewed about their perception of the Shared Space in the Mariahilfer Straße. The first is a Professor in Public Space at the TU Wien, the second is a traffic planner/expert and the third is an architect whose office is located in the

Mariahilfer Straße. Before the perceptions of these three experts are discussed, table 4 shows the coding results of these interviews.

<b>Code occurrence table <i>Expert interviews with experts from academia &amp; practice</i></b>			
<b>Code</b>	<b>Occurrence</b>	<b>Code</b>	<b>Occurrence</b>
Active mobility – no change/not beneficial	0	Local businesses – shared space is beneficial	1
Active mobility – shared space supports active mobility	3	Negative opinion about decisions government	13
Climate – no change/not beneficial	1	Observation	2
Climate – shared space is beneficial	1	Observation – people	4
Confusion shared space & FUZO	3	Observation – spatial environment	14
Context	13	Physical distance – enabled by shared space	1
Context – role of culture	4	Physical distance – no change	2
Context – role of laws&rules	12	Political motives	11
COVID-19 – physical distance	4	Preference for FUZO	2
Functioning	3	Quality of public space – higher quality	2
Functioning – active mobility	4	Quality of public space – no change	2
Functioning – climate	2	Safety – safer	0
Functioning – local businesses	9	Safety – safety not ensured	3
Functioning – quality of public space	4	Segregation of road users	2
Functioning – safety	3	Sojourn area	7
Functioning – traffic flow	5	Spatial environment – no change/no shared space	7
Functioning – traffic/sojourn area	14	Traffic artery	2
Future challenges for cities	4	Traffic flow – beneficial	0
Local businesses – no change/not beneficial	1	Traffic flow – not beneficial/no change	5

*Table 4: Code occurrence table Expert interviews with experts from academia & practice.*

#### 4.6.1 Political dimension of the Shared Space

Throughout the interviews, it became clear that the political dimension weighed heavily on the way the experts from academia and practice perceive the Shared Space in the Mariahilfer Straße. First of all, they critically discuss the political motives for implementing the Shared Space in this shopping street. According to the Professor of Public Space, the project of redesigning the Mariahilfer Straße was driven by economic reasons:

*'I guess the wider motive behind it was also doing a favour for commerce' (Expert interview 3).*

The architect points to another motive, which is that the Green Party used the project as a flagship for their party. She criticizes this motive because the initiator of the project, Maria Vassilakou, was at the time vice-mayor of Vienna and therefore she should have been acting for the entire Viennese population instead of for her own political party.

However, as the interviews with the politicians showed, the motive for implementing the Shared Space in the Mariahilfer Straße at the time undoubtedly was calming the traffic in the 6th and 7th district, of which the Mariahilfer Straße is the border. But since there is an apparent lack of understanding among experts from academia and practice about this motive, it could be argued that politicians did not clearly communicate their motives when promoting and implementing the Shared Space from 2011 until 2015.

Another political dimension that emerges from the interviews with these experts was the impact of Austria's laws and regulations on, mainly, the functioning of the Shared Space in the Mariahilfer Straße. The architect explains:

*'It's ruled very much by prohibition, not so much by enablement. It says 'don't enter the space with car', [...], 'enter only as'. A lot of rules that are put there and are mostly only for drivers and cars' (Expert interview 5).*

The traffic planner also explains what he thinks is the reason behind this:

*'They [the government] don't have to trust in the social aspect of humanity. Also, the government or the politicians have a lot of fear that if something happens, they are to blame' (Expert interview 4).*

This impact of Austrian laws and regulation already became apparent in the interview with the Green Party-member. However, he only elaborated on why certain choices were made and did not focus on rules that are currently in force.

All in all, the political dimension of the Shared Space clearly influenced the way the experts from academia and practice perceived Shared Space. In the case of the Mariahilfer Straße, these experts did not appraise this political dimension of the Shared Space positively. However, the eventual functioning from the point of view of these experts showed more diverse perceptions, as the next section will attest to.

#### 4.6.2 The functioning of the Shared Space

The most remarkable outcome of these expert interviews was that two interviewees perceived the Shared Space in the Mariahilfer Straße not as a Shared Space, but rather as an exceptional conventional street. The Professor of Public Space even

mentioned that she would not have conceived the Mariahilfer Straße as a Shared Space if it was not pointed out to her in the interview. One of the main reasons for this is the frequent flow of traffic, as mentioned by the professor and endorsed by the traffic planner:

*'It's just the normal street which is completely dominated by the cars [...]. It's a simple, straight ahead street, for motorized cars and they will never think about 'hey, there's a pedestrian who wants to cross it'' (Expert interview 4).*

The academic expert argued that this high frequency of cars along with the presence of other traffic such as bicycles in the Shared Space results in a segregation of road users because it forces vulnerable groups such as pedestrians to walk on the 'old' sidewalks:

*'You have some sections where people can walk in the middle of the street, although most do not do that. [...] Nevertheless, [...] most of the people still stick to the [old] sidewalks. Because every now and then bikes pass and there's busses, there's taxis. And in the morning, this also a lot of cars coming and doing the delivery work for the shops' (Expert interview 3).*

All three experts argued that the spatial design of the Shared Space is an important factor contributing to this segregation of road users. Especially the architect emphasized this point, stating that the *Gestaltung* – the design of the surface in the Shared Space – is not conceptual and extreme enough:

*'Gestaltung and design is important, because it's meant that the design on the streets leads all these different people to coexist in a very intuitive way' (Expert interview 5).*

With this term *Gestaltung* she points to various international examples of colourful surface designs that result in intuitive behaviour and integration of road users (such as Superkilen Urban Park in Copenhagen; see for one of these examples Figure 4 in chapter 2). The traffic planner and the academic expert also agreed that the straight street accompanied by straight lines of trees and street lights contributed to the lack of intuitive behaviour as well.

However, somewhat contradictory, all experts argue that they think the Shared Space is functioning well and is in fact integrating road users. According to both the professor and the architect it was a '*long process of adaptation, but at some point, it worked*' (Expert interview 5). The architect argued that both pedestrians and cyclists feel empowered in the Shared Space and are therefore 'reclaiming' the street. According to the traffic planner this results in:

*'A slower atmosphere. It's not people in a hurry running from shop to shop. It's an interaction' (Expert interview 4).*

In conclusion, experts from academia and practice perceive the Shared Space in the Mariahilfer Straße as a well-functioning Shared Space, despite its rule-driven environment, and state that it just took some time before people got used to it. However, they do mention that there is a slight form of road user-segregation as a result of the spatial design. Whether this is perceived by the general public as well, will be discussed in the next paragraph.

#### 4.7 In-depth interviews: general public

In this paragraph, the perception of the Shared Space in the Mariahilfer Straße of four Viennese inhabitants will be discussed. Table 5 below shows the coding results of these interviews.

**Code occurrence table *In-depth interviews with general public***

<b>Code</b>	<b>Occurrence</b>	<b>Code</b>	<b>Occurrence</b>
Activities – using furniture	3	Own behaviour – car driver	2
Activities – bars, restaurants	7	Own behaviour – cyclist	6
Activities – shopping	8	Own behaviour – general	1
Activities – social activity	3	Own behaviour – pedestrian	9
Activities – sports	2	Preference	5
Activities – travelling through	3	Safety not ensured	10
Activity – strolling	5	Situation before transformation	3
Behaviour – bus driver	1	Visual perception – accessibility	9
Behaviour – car drivers	10	Visual perception – bars	1
Behaviour – cyclists	17	Visual perception – bus line	4
Behaviour – other people confused	4	Visual perception – delivery trucks	1
Behaviour – other people general	6	Visual perception – driving lane	4
Behaviour – pedestrian	9	Visual perception – environment	22
Behaviour – scooter driver	3	Visual perception – furniture	6
Behaviour other people during COVID-19	2	Visual perception – green space/natural components	3
Behaviour towards other people	7	Visual perception – impact on people	9
COVID-19 situation description	7	Visual perception – lack of traffic control	1
Description – Shared Space	1	Visual perception – other people	3
Description Austria or Vienna	1	Visual perception – pavement	1
Feeling – annoyed	4	Visual perception – pedestrian area	4
Feeling – anxiety	3	Visual perception – tactile pavement	4
Feeling – positive opinion	8	Visual perception – traffic control	4

Feeling – relaxing	5	Visual perception + feeling: safe place	4
Feeling – stressful	3	Visual perception + feeling: unsafe	8
Feeling – unsafe	8	Visual perception + problems impaired people	12
FUZO – spatial distance	1	Visual perception – spatial distance enabled COVID-19	2
Need to be cautious	14	Visual perception: avoid the area	5

Table 5: Code occurrence table In-depth interviews with general public.

The four interviewees represent different age groups and all have different occupations. It is important to note that one of the interviewees is blind and can therefore offer useful insights into the way that the visually impaired perceive Shared Space environments. As his point of view is rather unique, it will be discussed in a separate paragraph. The rest of this paragraph consists of three parts, corresponding to the three components of the concept of 'perception' as discussed in both chapter 2 and 3: visual perception, feelings/emotive outcome and behaviour/cognitive outcome.

#### 4.7.1 Visual perception

The in-depth interviews show that the spatial environment was generally not the determining factor for the way the general public perceived the Shared Space in the Mariahilfer Straße, rather, the presence and behaviour of other people in this environment determined their perception of Shared Space. Of course, the four members of the general public notice all kinds of spatial elements in the Mariahilfer Straße such as benches and trees. An interesting observation of the public – that was also made by the experts from academia and from the field – is that there is a driving lane in the Shared Space in the Mariahilfer Straße:

*'In the middle, there is the road where the cars are supposed to ride' (In-depth interview 2).*

This observation indicates that there is still segregation of road users. It can therefore be called into question whether there is a real lack of demarcation. Indeed, there is a level surface without lines, which is one of the principles of a Shared Space-design (see §2.4.1 of the second chapter), but both the expert interviews and the in-depth interviews showed that the spatial design of the Shared Space functions as demarcation nonetheless. This can be related to the traffic planner's statement that the Shared Space in the Mariahilfer Straße is not a Shared Space, but actually a somewhat special conventional street. Furthermore, this quote might indicate a lack of understanding about the concept of 'Shared Space'.

As already mentioned above, the general public predominantly regards the presence and behaviour of other road users as the core of Shared Space, when they were asked to describe the Shared Space in the interview. According to the general

public the bus drivers drove very carefully, as did the car drivers. But generally, the interviewees observed that road users were confused about where they were allowed to go and how they should behave:

*'I feel like nobody really knows where to be on the streets' (In-depth interview 2).*

This observation also appeared from the interviews with both the politicians and the other experts.

With regard to this problematic behaviour of road users, the general public especially pointed to the behaviour of cyclists. All interviewees explained that the cyclists in the Shared Space in the Mariahilfer Straße cycle too fast. For instance, the third interviewee stated:

*'What I do not like that much is that some cyclists [...] think that they can go as fast as they can' (In-depth interview 3).*

Some interviewees explained why they think that cyclists drive so fast in the Shared Space. On the one hand, because the spacious spatial design of the Shared Space allows cyclists to do so, on the other, because cyclists know that there are less cars. Besides that, the Dutch interviewee that is living and working in Vienna argues that Viennese cyclists generally drive like they are *'riding the Tour de France'* (In-depth interview 2). This speed of the cyclists results in feelings of unsafety, which is discussed in the next paragraph.

#### 4.7.2 Feelings in the Shared Space

The interviews show that the feelings of the interviewees in the Shared Space in the Mariahilfer Straße are determined particularly by the presence and behaviour of other road users in the Shared Space. Especially the behaviour of cyclists results in feelings of unsafety. The other feelings that are expressed are anxiety, stress, annoyance and relaxation. In addition, their feelings are highly dependent on their role as a pedestrian, cyclist or car driver.

According to the interviewees, the feeling of anxiety and stress are mainly fuelled by being a car driver and the presence of pedestrians in the Shared Space because:

*'I would be so afraid to run somebody over because pedestrians are getting a bit loose. Now they know that there's not so much traffic. And the cyclists are driving so fast that this can also be a problem' (In-depth interview 3).*

The same interviewee concludes:

*'I think the best thing to do is to not drive through it' (In-depth interview 3).*

This conclusion is endorsed by another interviewee, who argued that she avoids the Mariahilfer Straße when she drives in a car because she is afraid to bump into someone. This is also a result that has been indicated by both the politicians and the other experts, who all observe that car drivers avoid the Mariahilfer Straße since the transformation of the street.

Another concern was raised by one of the interviewees that lives in the Mariahilfer Straße and cycles through it every day. She mentioned that she feels annoyed when she is cycling through the Mariahilfer Straße because pedestrians are everywhere and have the following inattentive attitude:

*“oh, I'm pedestrian and people have to watch out for me so I can go wherever I want to”* (In-depth interview 2).

All interviewees, including the visually impaired man (his interview has been discussed in §4.6.4 of this chapter), express a preference for the pedestrian zone in the Mariahilfer Straße because they feel safer in that part of the street. This corresponds to the findings of Reid et al. (2009).

One of the feelings that has been expressed is exceptional since only one interviewee feels relaxed in the Shared Space, while the others do not feel relaxed at all. The interviewee explains:

*‘It's relaxing to walk there. [...] It looks nice. There's a better area because there are not so many cars, it's more space for the people who walk’* (In-depth interview 3).

The interviewee argued that the transformation of the street into a Shared Space made the environment more beautiful and the reduction in the number of cars makes it a relaxing area to walk through. More interviewees in this research are of the opinion that the environment became more beautiful because of the Shared Space.

However, this expression of relaxation resulting from a reduction of cars and an improvement in the quality of the public space does not correspond to the perception of experts from academia and practice. These experts all mentioned that there still is a dominance of cars in the Shared Space-areas in the Mariahilfer Straße. Nevertheless, the SPÖ-member endorses the perception of this third interviewee by arguing that the life quality for pedestrians improved in the Mariahilfer Straße due to the transformation and that *flanieren* became a more attractive activity.

All in all, the general public feels somewhat unsafe and anxious in the Shared Space, especially when they are driving a car. The improvement of the quality of the public space clearly resulted in positive opinions (not extensively discussed here) about the Shared Space in the Mariahilfer Straße. The interviews showed that both the visual perception and its resulting feelings have an impact on the way people behave in the Shared Space. This is discussed in the paragraph below.

### 4.7.3 Behaviour in the Shared Space

It became apparent from the in-depth interviews that the behaviour of the interviewees in the Shared Space in the Mariahilfer Straße can be divided into two categories: behaviour during activities in the Shared Space and behaviour as road users in the Shared Space.

Regarding the activities, the interviews showed that almost all interviewees visit the Mariahilfer Straße for either shopping or social activities that take place in the bars/restaurants in the Mariahilfer Straße. The interviewee that lives in the Mariahilfer Straße used the street as traffic artery, which is probably the case for everyone living or working in the Mariahilfer Straße. Furthermore, one interviewee specified that she sometimes visits this street just to stroll, and that she thinks that:

*'A lot of people are just strolling around'* (In-depth interview 3).

This corresponds to the theory of Walter Benjamin about *Der Flaneur* and it confirms the expectation put forward in §2.6.3 of the second chapter, being that a Shared Space in a shopping street is similar to an open-air department store that attracts *Flaneurs*.

Furthermore, the behaviour of road users in the Shared Space in the Mariahilfer Straße seems to be determined by the role they perform (pedestrian, cyclist or car driver) and is influenced by both their visual perceptions and the way they feel because of this perception. This is also visualized in the conceptual framework in §2.5 of the second chapter. The interviews with members of the general public showed that the interviewees generally behaved cautiously in the Shared Space, as the following quote attests to:

*'I take a step back and let the others go cause it's better to let them do their things than what to do before we crash'* (In-depth interview 1).

This quote shows that the interviewee's behaviour is led by a feeling of anxiety. However, the interviewees did not behave this cautious in other roles. The interviewees argued that they moved about more freely in the role of pedestrian, because they felt relaxed in the environment. This may also result from the fact that they feel empowered, as the architect stated (see §4.6 of this chapter). The interviews prove that the objective of reclaiming the streets for people – as has been mentioned by the member of the Green Party and in the academic literature – has been achieved.

The interviewees seem to behave similarly as car drivers and cyclists. They behave very careful and concentrated when they are driving a car, and in most instances, they try to avoid the Mariahilfer Straße (see §4.7.2 of this chapter). The interviewees mention that they prefer not to cycle there either, when there are many other people there:

*'When it's busy, you don't wanna bike there because you really have to watch out' (In-depth interview 2).*

In addition, the behaviour of car drivers and cyclists is also determined by the spatial environment, because there is a slope in one part of the Shared Space:

*'the pit [slope] needs more concentration for the cyclists, also for the car drivers and the pedestrians. I think it's a bit more stressful to move on this pit [slope]. The flat one it's better, I think there is more flowing together' (In-depth interview 1).*

This quote shows that one of the Shared Spaces in the Mariahilfer Straße is perceived as more of a Shared Space than the other, as it does a better job of integrating road users ('there is more flowing together').

In conclusion, the behaviour of the general public seems to be influenced by several aspects. Firstly, the visual perception. The slope in one of the Shared Spaces results in more concentrated behaviour but also in higher speeds of cyclists. Secondly, the feelings of the road users. The high quality of the public space results in feelings of relaxation, but the behaviour of other road users also leads to feelings of unsafety. These feelings allow for the public to walk freely in the Shared Space but, on the other hand, also lead to cautious behaviour. All in all, the interviews show that these three elements – visual perception, feelings and behaviour – are interrelated. In the next paragraph the perception of the visually impaired interviewee are focussed on.

#### 4.7.4 The perception of a visually impaired person

In chapter 2, the usefulness and insightfulness of the perception of the visually impaired of a Shared Space was already discussed extensively from a theoretical point of view. In this paragraph, the results of the interview with a blind man will be discussed. Although the interviewee thinks that a great effort was made to make the Shared Space in the Mariahilfer Straße accessible to the visually impaired, by applying tactile delineator pavement and special traffic lights, he does still encounter some difficulties in the Shared Space in the Mariahilfer Straße. These are outlined below.

In the interview, the visually impaired man explained that he is dependent on his hearing combined with either his guide dog or his white cane. However, the use of his cane alone did not warrant a feeling of safety or independent mobility in the Shared Space:

*'Unless I go with my dog, [...] that's when I feel more at ease. But with my cane alone, I'm just lost' (In-depth interview 4).*

He explained that, even with a guide dog, moving through the Shared Space can prove a challenge. The interviewee explained that the spatial design of the Shared Space and especially the lack of curbs is problematic for guide dogs since they are

trained to recognize and anticipate on curbs.

Furthermore, the slow pace of cars as well as the presence of electric cars in the Shared Space present even more danger for a visually impaired person:

*'When the cars are not moving very fast, you know, by the time I notice, it's already very close. [...] So that is the danger' (In-depth interview 4).*

*'And then the cars, since they are running at low speed [...]. That's not how I can hear them from far away [...] that poses a big risk for me, because I can't hear them' (In-depth interview 4).*

Moreover, the interviewee argued, the traffic lights bring some difficulties to visually impaired from outside the European Union (EU). The reason for this is that the traffic lights can be operated by the visually impaired with a special key that is only available to EU citizens. Visually impaired people from outside the EU thus cannot make use of this special amenity.

The interviewee stated that these difficulties result in feelings of unsafety and discomfort as well as very cautious behaviour. He perceived that the Shared Space in the Mariahilfer Straße limits the mobility – and thus the independent behaviour – of the visually impaired for several reasons. First of all, moving through the Shared Space with a cane alone is problematic. Secondly, a guide dog is very useful but does not eliminate every difficulty, as they have trouble with the lack of curbs. Thirdly, a visually impaired person relies on acoustics and the Shared Space reduces the noise of cars since they are driving very slowly. Lastly, the movement of people is unpredictable in a Shared Space because multiple types of road users are integrated, which proves difficult to navigate for a visually impaired person. All in all, these reasons result in a clear preference for the pedestrian zone in the Mariahilfer Straße, where cars are not allowed to drive.

So far, the perceptions of the Shared Space in the Mariahilfer Straße of the interviewees in general are discussed. As was already mentioned in the introduction, the current COVID-19 pandemic leads to several challenges for public life and public space. In the following paragraph, the perceptions these groups of people have of Shared Spaces during the pandemic are discussed.

#### 4.8 Perception of Shared Space at the time of COVID-19

The final paragraph of this chapter highlights the relationship between Shared Space-design and the possibility to maintain spatial distance at times of a pandemic like COVID-19. In all interviews, the interviewees were asked about the way in which they perceived this possible advantage of the concept of 'Shared Space'. The results are discussed below.

In the first period of the COVID-19 pandemic the Austrian government declared a lockdown, which meant that people only were allowed to leave their house for a walk on their own or to do groceries on their own (Stadt Wien, 2020). This

lockdown lasted until the 1<sup>st</sup> of May 2020 (Ibid.). Therefore, as several interviewees also pointed out, there were hardly any people in the Mariahilfer Straße.

The interviews with politicians showed that the city of Vienna indeed appointed some conventional streets in Vienna as Shared Spaces in order to enable spatial distance by providing road users the opportunity to divert for other road users. The member of the SPÖ evaluates the newly functioning Shared Spaces in the light of the pandemic as follows:

*'When there's only a few cars parking and there's trees, people like to use that'* (Expert interview 1).

The Green Party-member endorses this evaluation and he adds that people tend to avoid Shared Spaces were many cars are parked because, in that case, they cannot divert that easily. In relation to this and to the Mariahilfer Straße, the Professor of Public Space mentioned that cars were not allowed to park in the Mariahilfer Straße, which resulted in the fact that:

*'People feel free-er to walk, to take more distance when they walk'* (Expert interview 3).

However, all interviewees argue that people did not visit the Mariahilfer Straße because:

*'Those who wanted to walk and go to the green areas or spaces, they use the parks nearby'* (Expert interview 1).

*'If I want to do a walk, I got two parks right around the corner'* (In-depth interview 3).

There is thus no proof that people visited the Mariahilfer Straße in particular during the pandemic, because people preferred to go to parks for a walk. Nevertheless, the interviewees from the general public did endorse the idea that the Mariahilfer Straße is a better option to go to for a walk than a conventional street with narrow sidewalks, because:

*'it's a very wide street so if you pay attention and you want to, you can easily avoid bumping into people and keeping your distance'* (In-depth interview 2).

The visually impaired interviewee mentioned that a Shared Space is an even more difficult space to be in during a pandemic compared to being in the Shared Space normally or compared to being in a conventional street. He explains that he cannot see his distance to other people and that he therefore chooses to stay in the district where he lives and always wears his facemask.

Lastly, the architect expressed doubts about the need to transform conventional streets into Shared Spaces:

*'I'm not sure whether you need this kind of huge shared spaces to move with a pandemic and kind of other crisis situations because people tend to stay at home and space is actually more available' (Expert interview 5).*

All in all, it could be argued that the COVID-19 pandemic is too recent an event to evaluate its impact on people's perceptions of a concept like 'Shared Space' already. In the case of Vienna, both users and experts preferred to go to parks when they wanted to go outside during the lockdown and/or pandemic. Nevertheless, the interviewees did see the advantages of the spatial design of the Mariahilfer Straße as a Shared Space in the light of the Coronavirus.

## 5. Conclusion & discussion

In this thesis, the research evolved around the following research question: *How is the Dutch concept 'Shared Space' perceived by users and experts in the Austrian context of the Mariahilfer Straße in Vienna?* The rationale for this research was to unpack the spatial, social and political dimensions of the Shared Space-concept. Another motivation for this research was the current COVID-19 pandemic, which put pressure on life in public places as Gehl's recent report showed (2020). In order to prevent the Coronavirus from spreading, governments and experts encouraged or imposed people to maintain a certain spatial distance from each other. According to Gehl, this measure is difficult to achieve in popular places, like this study's case: Vienna's largest shopping street the Mariahilfer Straße.

In the final pages of the report, Gehl posed *inter alia* two questions that can be (partly) answered by the research elaborated on in this thesis. First of all, the company questions how cities can be designed in such way that people can *'responsibly take part in public life across cities in a healthy and comfortable way'* (2020, p.52). Secondly, Gehl asked whether there are street types or street features that are more conducive to COVID-19. In this research both questions are explored using the Dutch concept 'Shared Space', with the Mariahilfer Straße in Vienna as case study.

A fairly limited amount of academic papers has been written about this concept in the academic literature, as is displayed in chapter 2 – the theoretical framework. This chapter functions as the answer to the first sub question: *How is the Dutch concept 'Shared Space' internationally interpreted and applied?* The available academic papers are valid and useful theoretical tools to conduct research on the concept of Shared Space. However, this literature review also shows that there is only one study that conducted research on the perception of Shared Space, which is the study of Karndacharuk et al. (2016). This thesis therefore attempts to add knowledge about this aspect of Shared Space to the field of spatial planning and design by using both qualitative and quantitative research methods (as is explained in chapter 3).

In the fourth chapter the second and third sub question were the focal point. For the second sub question – *How and under which circumstances is the Shared Space in the Mariahilfer Straße implemented and designed?* – both a spatial analysis and a secondary literature analysis were performed, in order to gain and provide insight in mainly the spatial and political circumstances of the case of the Mariahilfer Straße. The third sub question was investigated by means of a social media analysis of 77 posts on Instagram, four in-depth interviews with the general public of the Mariahilfer Straße, two expert interviews with politicians from Vienna and three expert interviews with experts from academia and practice, likewise from Vienna.

The first conclusion of this research is that the case of the Mariahilfer Straße was particularly exposed to political and economic circumstances which proved to have important complications for the functioning of the Shared Space-concept. Prior to the implementation of the Shared Space in this popular shopping street in Austria's

capital, a heated debate of several years took place in which various parties such as the local shops and the bus line company expressed criticism. Furthermore, the concept of Shared Space had been included in Austrian traffic regulation (under the name *Begegnungszone*), which results in a Shared Space that is ruled by regulations and prohibitions. This is remarkable because this concept is usually not included in traffic regulation, as a lack of traffic control is precisely what constitutes a Shared Space (Hamilton-Baillie, 2008).

The second conclusion is that the perception of Shared Space differs per person and per background. The interviews show that politicians primarily perceive the Shared Space as its decision-making and implementation process. The politician from the Green political party explains that the original idea for the Mariahilfer Straße had to be adjusted into its current form due to the debates and the Austrian regulations on traffic. The eventual functioning of the Shared Space is of less importance to them, even though they evaluate the functioning very positively. They argue that their objective of traffic calming has been achieved and that the Shared Space is beneficial to the quality of life of the people traversing the Mariahilfer Straße.

Besides that, the interviews with the experts from academia and practice show that these experts are focused on the political circumstances of the Shared Space in the Mariahilfer Straße as well. They are critical about certain choices that have been made and argue that the street is still dominated by cars resulting in a segregation of road users, while the politicians reported the opposite. Furthermore, the experts emphasize that the Austrian traffic regulation and the rules that are in force in the Mariahilfer Straße's Shared Space negatively influenced the spatial design of the street and hamper the functioning of the Shared Space as a place where road users are integrated. Nevertheless, the experts do experience an integration of road users in the Shared Space, which they attribute to both the empowerment of pedestrians and cyclists, and to a long process of familiarisation with the transformation of the street and the concept of Shared Space.

Moreover, the general public perceives the Shared Space in different manners. To investigate this perception, the definition of perception as formulated by Sheppard (2005), appears useful. Perception consists of three parts: visual perception, the feelings or emotive outcomes that result from these observations and the behaviour or cognitive outcomes that the person performs due to these visual perceptions and feelings.

The interviews show that the general public predominantly perceived the Shared Space as the presence and behaviour of other road users, and that they do not focus that much on the spatial environment. Some interviewees report feelings of unsafety in the Shared Space, predominantly due to the speed of the cyclists. The behaviour of cars was not experienced negatively, but the behaviour of pedestrians was described as somewhat careless. The interviewees explained that these observations and feelings resulted in cautious behaviour, irrespective of their own role in the Shared Space (car driver, cyclists or pedestrian). Overall, the interviewees

preferred a pedestrian zone. This preference could be caused by their experience in the pedestrian zone adjacent to the Shared Space-zones in the Mariahilfer Straße. Further research could reveal whether users of a Shared Space that does not have a pedestrian zone in its proximity, also prefer a pedestrian zone.

One interviewee – a student – perceived the Shared Space as a beautifully transformed environment, which she sometimes visits for just strolling. First of all, this result is in line with the findings of the SORA evaluation report about the Mariahilfer Straße (2015) since this report states that especially young people are in favour of the new Mariahilfer Straße. Secondly, her perception confirms the assumption made in the second chapter, based on the theory of Walter Benjamin on *Der Flaneur* (1983). In his book he argues that open-air department stores – which could be a Shared Space in a shopping street in my view – attract *Flaneurs*: people that stroll around. He argues that *flanieren* can be beneficial for lonely people, which also seems to be reflected in the Austrian-German term for the concept 'Shared Space', which is *Begegnungszone*; a zone in which people can meet each other.

The last noteworthy interviewee is the visually impaired man. He provided a useful insight in how blind people perceive the Shared Space, which problems they run into and how they move through a Shared Space. This interviewee explained that he cannot move independently in the Shared Space, because even with his guide dog he encounters difficulties (such as the lack of curbs). As a visually impaired person he is dependent on his hearing, rendering the slowly driving cars a danger to him, as he does not hear them until they are already close. Even though he admits that the city of Vienna put much effort in making the Shared Space accessible for the visually impaired, he still perceives the Shared Space as a dangerous environment to be in.

In chapter 2, a conceptual framework was created based on the academic literature discussed in the chapter. While the data from the in-depth interviews fits into this framework especially well, the data from the expert interviews, Instagram posts and secondary literature correspond less aptly to this framework. The general public visually perceive road users – and some spatial elements – in the Shared Space, and because of this they feel either comfortable or uncomfortable in the Shared Space. This subsequently influences their behaviour in the Shared Space, becoming either more careless or cautious. The visual perception influences the behaviour in a direct manner as well, because the design of the Shared Space should in itself result in intuitive behaviour without being caused by the presence of other people in the Shared Space. However, according to the architect that has been interviewed this latter point is where gains can be made because the surface in the Shared Space in the Mariahilfer Straße is too little conceptual and not really generating intuitive behaviour.

The third conclusion that can be drawn from this research is that Shared Space is often expressed in academic literature and reports as a set of 'streetscape treatments' (Kaparias et al., 2015), while the human aspect of the Shared Space is often missing. This research shows that the people that use the Shared Space

eventually mainly perceive the Shared Space as the presence and behaviour of other road users. This underwrites the importance of incorporating the human aspect into the planning and design of a Shared Space, for which this research can be a starting point together with the research of Karndacharuk et al. (2016).

With regard to the possibility of using Shared Space as a tool to enable spatial distance at the times of the COVID-19 pandemic, it is too soon to draw general conclusions since the pandemic is a very recent (and still ongoing) event. Nevertheless, the results from this research can hopefully provide an impetus to conduct more research on the relationship between spatial design and the spread of a virus.

This study shows that people prefer visiting parks and green spaces at the times of a pandemic and avoid shopping streets like the Mariahilfer Straße. When they do visit the shopping street, all groups of interviewees argue that it is easier to maintain spatial distance in the Mariahilfer Straße as compared to other, conventional streets due to its spacious design. In addition, the temporary streets that have been appointed as Shared Space appear to be successful, according to the political experts, as long as there are not too many parked cars in combination with the beneficial presence of trees.

Based on these results, answers can be formulated on the questions posed in the report of Gehl. On the one hand, implementing more green space and removing parking places in cities could be the way to design cities in such way that a healthy and comfortable participation in public life is ensured. On the other hand, it could be argued that Shared Space is a 'street type' that is less conducive to the spread of the Coronavirus due to its spacious design. It is important to point out that these conclusions are only preliminary, and that further research into this topic is necessary.

Furthermore, this thesis leaves much room for further research. Firstly, a large-scale questionnaire on perception of Shared Space could provide more insight in how the majority feels and behaves in Shared Spaces and which spatial elements contribute to this positively and negatively. Secondly, the concept of 'Shared Spaces' is not commonly found in the context of a commercial street. The impact of this context was briefly discussed in this research, but further research could reveal whether this context is enhancing or hampering the functioning of the Shared Space and shed light on the reasons behind it. Thirdly, this research showed that the international context of the Mariahilfer Straße in Vienna is characterized by regulations and rules that are in force. The precise impact of this political dimension onto the functioning of the Shared Space-concept is also an interesting relationship to investigate.

Lastly, there are many more supposed beneficial effects of Shared Spaces that are worthy of investigating since that has not been done so far. For instance, Shared Spaces are related to achieving a Healthy City by promoting active modes of mobility, a Low-carbon City by limiting motorized traffic and therewith reducing carbon emissions in cities, Smart Urban Growth by creating walkable networks through both

Shared Spaces and other walkable environments. Last but not least, Shared Spaces are related to the Sustainable Development Goals since rethinking urban design might contribute to and result in a better future for all.

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Lastly, I would like to express my appreciation to my dad for explaining how PaintShop Pro works and for adjusting some elements in the figure ground maps when I did not have access to the software anymore because I moved very suddenly to Utrecht.

## Appendix A: Instagram posts

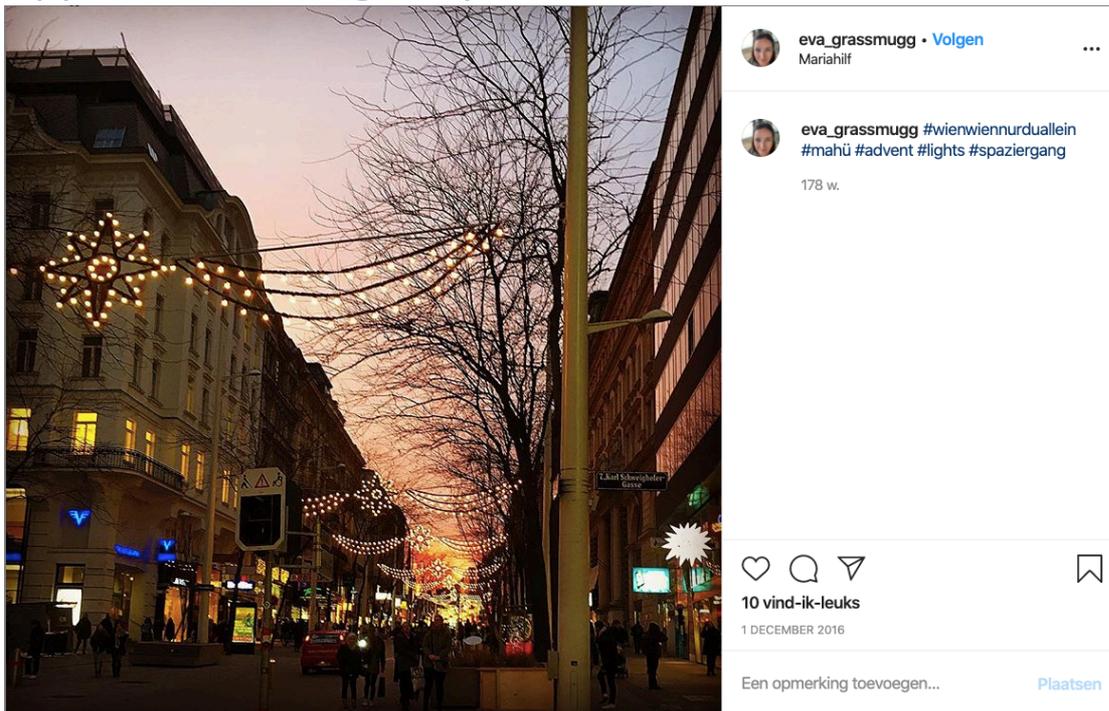


Figure 14: Instagram post that refers to Shared Space as 'Spaziergang'. Source: Instagram Eva Grassmug, December 1, 2016.

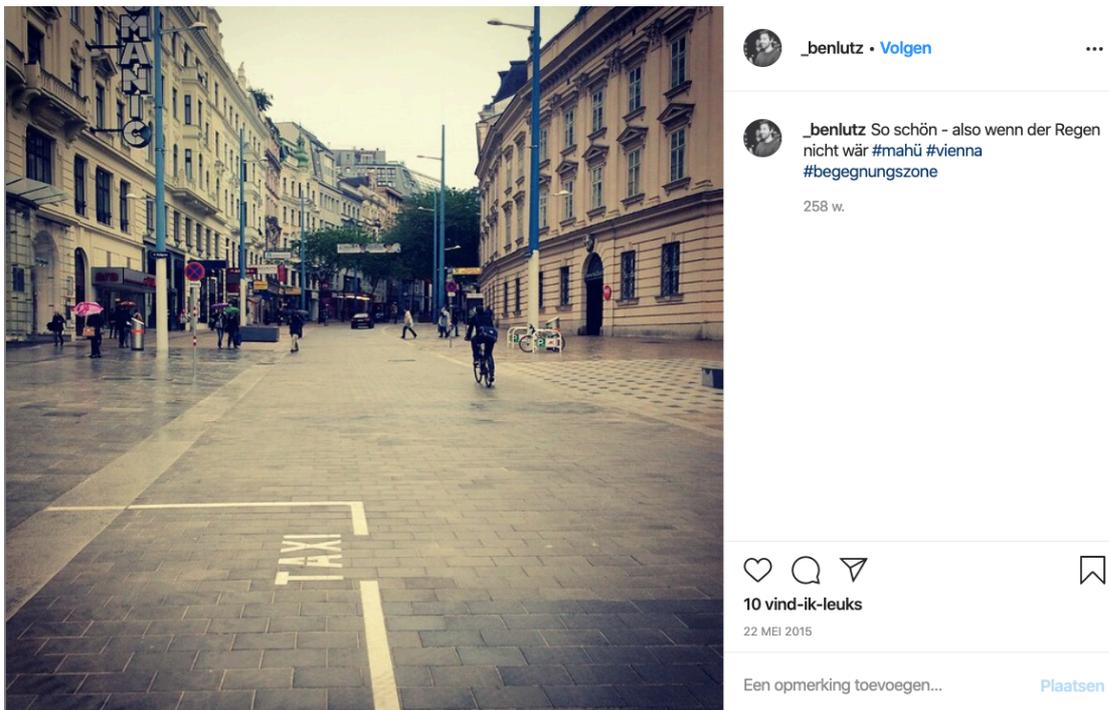


Figure 15: Instagram post that reflects positive opinion about Shared Space Mariahilfer Straße. Source: Instagram Benjamin Lutz, May 22, 2015.



 **d.s.8530** • [Volgen](#)  
Vienna, Austria

 **d.s.8530** #vienna #mahü 🍁🍂🌿 #wien  
238 w.

**10 vind-ik-leuks**  
11 OKTOBER 2015

[Een opmerking toevoegen...](#) [Plaatsen](#)

Figure 16: Instagram post that does not express an opinion about the Shared Space. Source: Instagram d.s.8530, October 11, 2015.

## Appendix B: Interview guides

### Expert interviews: political experts

#### Opening

Thank you for taking the time to meet with me. This interview will last about one hour. Your answers will help me with my research, which tries to understand how the Shared Spaces in the Mariahilfer Straße have been implemented and how they are experienced by both users and experts.

- **Consent:** I need to have your consent that you participate in this research voluntarily. Your participation in the interview can be ended at any time and the answers you provide are confidential. I will not use any of your direct quotes without your prior consent. **Is it alright if I record the interview so that I can make a transcript?**
- To begin, can you confirm you have about an hour for this interview?
- Please note that you are welcome either to answer questions in this interview from your own individual perspective, or from your role as XX, but it will be helpful if you indicate for each answer indicate which perspective you are speaking from.

#### Main questions

*Political dimension of the Shared Space in the Mariahilfer Straße (before COVID-19)*

1. In 2011 the political party *Die Gruenen* initiated the implementation of Shared Spaces – or: *Begegnungszonen* – in the Mariahilfer Straße in Vienna. Not everyone responded positively to this idea in Vienna but eventually the street has been transformed into two Shared Spaces and one Pedestrian zone/FUZO. I am interested in how different groups of people perceive these Shared Spaces in the Mariahilfer Straße. Did you know about the political challenges (busses in the Shared Space, impact on entrepreneurs) of the Mariahilfer Straße back then?
  - a. If yes: what is your view on this?
  - b. If no: what could the pros and cons of implementing a Shared Space in the Mariahilfer Straße?

*Functioning of Shared Space*

2. The Shared Spaces in the Mariahilfer Straße are almost five years functioning now. Could you describe the *Begegnungszonen/Shared Spaces* in the Mariahilfer Straße to me?
  - a. *Probes: Safety, climate, area to stay instead of for traffic (people central, strolling), quality of the public space, local businesses, traffic flow, active mobility.*

### Shared Space during COVID-19

3. In March this year the COVID-19 pandemic started. As a result, city streets became empty in many countries. The city of Vienna is currently transforming several streets into *Begegnungszonen* due to COVID-19 in order to enable physical distance between people. What is your view on this?
  - a. *Probes: to what extent does spatial design support physical distance, does the Mariahilfer Straße attract people due to its spatial design in times like these?*
4. COVID-19 probably is not the last pandemic we will have to deal with. With this in the back of your mind, what are future challenges for cities?
  - a. *Probes: social challenges, physical distance, role of spatial planning and design.*

### Probes:

- Ask the interviewee to be specific:
  - Could you give an example of that?
  - What do you mean exactly?
  - Representation: taking the interviewee to a specific situation.
- Keeping the flow into the conversation:
  - Short silence.
  - I understand/that's interesting.
  - Ahh/hmhm.
- More depth/follow-up questions (non-directive)
  - Echo: repeat the last part of the interviewee's last sentence.
  - Do you mean to say..?
- Transition to another subject:
  - Coming back to earlier made statements.
  - Continue on the last statement of the interviewee.

### Closing

- Is there anything that you would like to ask me or any last points you would like to add?
- If you have any questions or concerns, you can contact me at any time (**provide interviewee with contact details**).
- Note to self: After turning off the recorder ensure to also pause/ make a sentence of reflection so as to give them a chance, if they wish, to comment further. Although you may not be able to quote it in your research often people say very interesting things once the tape is turned off which can really help with contributing to your wider understanding!
- THANK YOU VERY MUCH FOR PARTICIPATING IN MY RESEARCH.

Expert interviews: academics, spatial planners, architects.

### Opening

Thank you for taking the time to meet with me. This interview will last about one hour. Your answers will help me with my research, which tries to understand how the Shared Spaces in the Mariahilfer Straße have been implemented and how they are experienced by both users and experts.

- **Consent:** I need to have your consent that you participate in this research voluntarily. Your participation in the interview can be ended at any time and the answers you provide are confidential. I will not use any of your direct quotes without your prior consent. **Is it alright if I record the interview so that I can make a transcript?**
- To begin, can you confirm you have about an hour for this interview?
- Please note that you are welcome either to answer questions in this interview from your own individual perspective, or from your role as XX, but it will be helpful if you indicate for each answer indicate which perspective you are speaking from.

### Main questions

*Perception of Shared Space in the Mariahilfer Straße (before COVID-19)*

5. In 2011 the political party *Die Grünen* initiated the implementation of Shared Spaces – or: *Begegnungszonen* – in the Mariahilfer Straße in Vienna. Not everyone responded positively to this idea in Vienna but eventually the street has been transformed into two Shared Spaces and one Pedestrian zone/FUZO. I am interested in how different groups of people perceive these Shared Spaces in the Mariahilfer Straße. Could you describe the *Begegnungszonen/Shared Spaces* in the Mariahilfer Straße to me? [visual perception & interpretation]
  - a. *Probes: types of activities in the Shared Space (people), the spatial design of the Shared Space (spatial environment).*
  - b. *Probes (functioning): Safety, climate, area to stay instead of for traffic (people central, strolling), quality of the public space, local businesses, traffic flow, active mobility.*

*Viennese context*

6. The concept of Shared Space is of Dutch origin. Are you familiar with the Dutch original concept of Shared Space?
  - a. **If yes:** Could you tell me what are the similarities and differences between the Dutch concept and the Viennese execution of the concept? (To what extent does the Shared Space in the Mariahilfer Straße deviate from the Dutch concept and why?)

- i. *Probes: role of culture, role of shopping street as context, main function of the Shared Space.*
- b. **If no:** The Dutch concept is focused on improving the safety on the street by putting the human being central and removing all traffic elements (signs, lights, curbs, etc.). What do you think could be the similarities between the Dutch concept and the Viennese execution?

#### *Shared Space during COVID-19*

1. In March this year the COVID-19 pandemic started. As a result, city streets became empty in many countries. The city of Vienna is currently transforming several streets into *Begegnungszonen* due to COVID-19 in order to enable physical distance between people. What is your view on this?
  - a. *Probes: to what extent does spatial design support physical distance, does the Mariahilfer Straße attract people due to its spatial design?*
2. COVID-19 probably is not the last pandemic we will have to deal with. With this in the back of your mind, what are future challenges for cities?
  - a. *Probes: social challenges, physical distance, role of spatial planning and design.*

#### **Probes:**

- Ask the interviewee to be specific:
  - Could you give an example of that?
  - What do you mean exactly?
  - Representation: taking the interviewee to a specific situation.
- Keeping the flow into the conversation:
  - Short silence.
  - I understand/that's interesting.
  - Ahh/hmhm.
- More depth/follow-up questions (non-directive)
  - Echo: repeat the last part of the interviewee's last sentence.
  - Do you mean to say..?
- Transition to another subject:
  - Coming back to earlier made statements.
  - Continue on the last statement of the interviewee.

#### **Closing**

- Is there anything that you would like to ask me or any last points you would like to add?
- If you have any questions or concerns, you can contact me at any time (**provide interviewee with contact details**).
- Note to self: After turning off the recorder ensure to also pause/ make a sentence of reflection so as to give them a chance, if they wish, to comment

further. Although you may not be able to quote it in your research often people say very interesting things once the tape is turned off which can really help with contributing to your wider understanding!

- THANK YOU VERY MUCH FOR PARTICIPATING IN MY RESEARCH.

## In-depth interviews: general public

### Opening

Thank you for taking the time to meet with me. This interview will last about one hour. Your answers will help me with my research, which tries to understand how the Shared Spaces in the Mariahilfer Straße have been implemented and how they are experienced by both users and experts.

- **Consent:** I need to have your consent that you participate in this research voluntarily. Your participation in the interview can be ended at any time and the answers you provide are confidential. I will not use any of your direct quotes without your prior consent. **Is it alright if I record the interview so that I can make a transcript?**
- To begin, can you confirm you have about an hour for this interview?
- Please note that you are welcome either to answer questions in this interview from your own individual perspective, or from your role as XX, but it will be helpful if you indicate for each answer indicate which perspective you are speaking from.

### Main questions

*Perception of Shared Space (before COVID-19)*

7. In 2012 the political party *Die Gruenen* initiated the implementation of Shared Spaces – or: *Begegnungszonen* – in the Mariahilfer Straße in Vienna. Not everyone responded positively to this idea in Vienna but eventually the street has been transformed into two Shared Spaces and one Pedestrian zone/FUZO. I am interested in how different groups of people perceive these Shared Spaces in the Mariahilfer Straße. Could you describe the *Begegnungszonen/Shared Spaces* in the Mariahilfer Straße to me? [visual perception & interpretation]
  - a. *Probes (other people): what are other people doing in the SS?*
  - b. *Probes (spatial environment): nice elements, elements that are not nice, what could be changed?*
8. How do you feel in the Shared Space in the Mariahilfer Straße? [the impact of the environment of a person's feelings]
  - a. *Probes (other people): situations in which the interviewee felt (un)comfortable or (un)safe because of other people, being seen/flanieren.*

- b. *Probes (spatial environment): situations in which the interviewee felt (un)comfortable or (un)safe due to the design of the spatial environment, possibilities to move freely (or not).*
- 9. How do you behave in the Shared Space in the Mariahilfer Straße? [the impact of the environment on behavior]
  - a. *Probes (other people): how do other people in the Shared Space influence your behavior? Are you careful (or not) towards them?*
  - b. *Probes (spatial environment): what elements in the SS determine your behavior? Are you more cautious and alert as compared to 'normal' streets?*

#### *Perception of Shared Space during COVID-19*

- 10. In March this year the COVID-19 pandemic started. As a result, city streets became empty in many countries. Also in Austria this is the case. In order to enable physical distance in the city centre, the city of Vienna is currently transforming several streets into *Begegnungszonen*. Could you describe to me if and how your feelings and behaviors in the Mariahilfer Straße have changed due to the pandemic?
  - a. Yes, they have changes: what are the spatial elements that contribute to this change?
  - b. If no: what are the activities you do mostly in the Mariahilfer Straße?

#### **Probes:**

- Ask the interviewee to be specific:
  - Could you give an example of that?
  - What do you mean exactly?
  - Representation: taking the interviewee to a specific situation.
- Keeping the flow into the conversation:
  - Short silence.
  - I understand/that's interesting.
  - Ahh/hmhm.
- More depth/follow-up questions (non-directive)
  - Echo: repeat the last part of the interviewee's last sentence.
  - Do you mean to say..?
- Transition to another subject:
  - Coming back to earlier made statements.
  - Continue on the last statement of the interviewee.

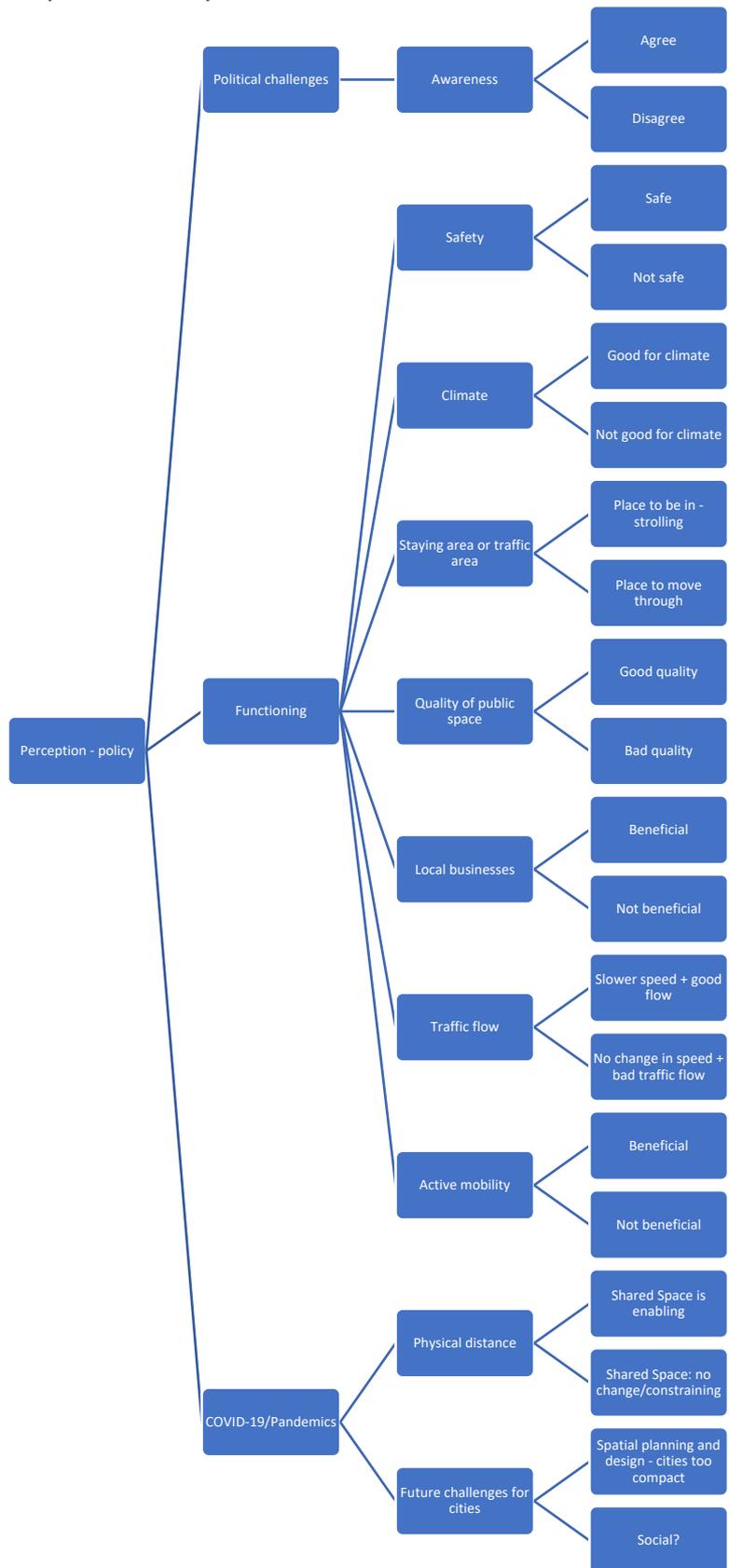
#### **Closing**

- Is there anything that you would like to ask me or any last points you would like to add?

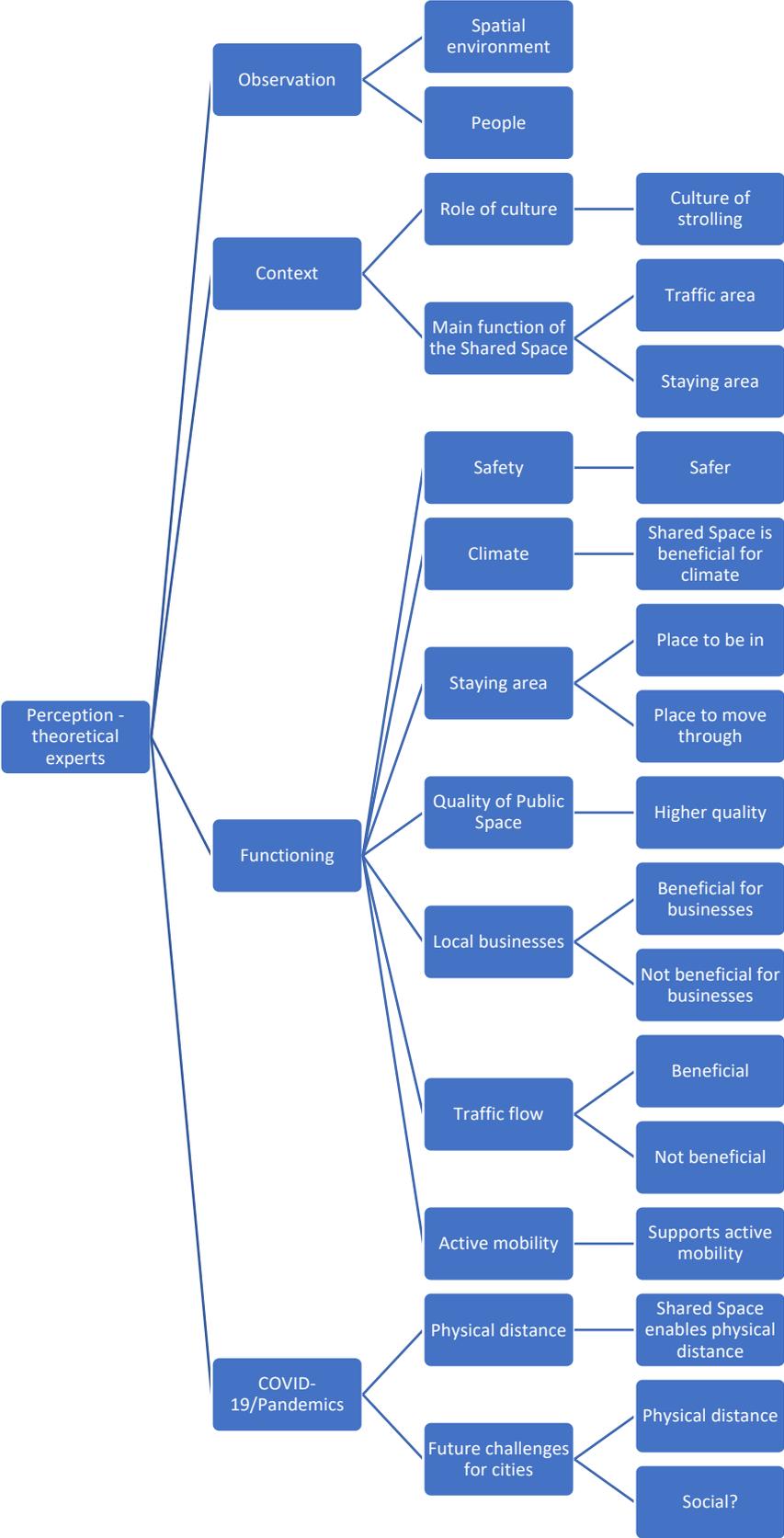
- If you have any questions or concerns, you can contact me at any time (**provide interviewee with contact details**).
- Note to self: After turning off the recorder ensure to also pause/ make a sentence of reflection so as to give them a chance, if they wish, to comment further. Although you may not be able to quote it in your research often people say very interesting things once the tape is turned off which can really help with contributing to your wider understanding!
- THANK YOU VERY MUCH FOR PARTICIPATING IN MY RESEARCH.

# Appendix C: Coding trees

## Coding tree Expert Interviews: political experts



Coding tree Expert Interviews: academics, spatial planners, architects.



## Appendix D: Reflection

*What went well?*

Right from the beginning I made a very enthusiastic start with my thesis and I think it has been one of my strongest points that I maintained this attitude throughout the entire process. This attitude helped me especially when I started approaching different people and organizations to conduct interviews with. This was a very laborious task but I managed to keep motivated because the interviews gave me the opportunity to speak to various interesting persons. Furthermore, I had never worked with the software *ATLAS.ti* before and based on YouTube tutorials I managed to get acquainted with the software and its possibilities. I also used the software to analyze the secondary literature and the Instagram posts, something of which I did not think was possible beforehand. Moreover, in order to benefit the most from the meetings with my supervisor, I prepared these meetings very well. I think this helped me very much in making progress. Finally, the COVID-19 pandemic resulted in a big change in my research design. I think I have been able to switch quite smoothly and deliver a thesis of good quality despite the circumstances.

*What did not go well and what would you have done differently in hindsight?*

In hindsight I could have shown more initiative when the COVID-19 situation appeared to be serious. The idea to conduct interviews came from my supervisor and I think I could have come up with this idea myself. Furthermore, my time-management was not optimal. For instance, I could have written the theoretical framework earlier but I postponed it because of the courses I was following. Overall, I am quite satisfied with how the process evolved and in hindsight I would have only done things differently with regards to timing and time management.

*Do the outcomes appear convincing to you?*

I believe that the interviewees that are included in my research represent a very nice mix of people in Vienna: a blind man, a student, two politicians from different parties, three different experts from the field of spatial planning, a young working woman and an older working woman. Additionally, the interviewees are from various nationalities as well. The outcomes of the interviews are diverse, they offer interesting and differing insights from different points of view. Therefore, the outcomes appear convincing to me. In hindsight, I think the interviews maybe touched upon too many different aspects. The interviews could have been narrowed down more in my opinion.

## Appendix E, F & G: Transcripts, code books and *ATLAS.ti* reports

Submitted through additional files.