Why Shared Space?

An Exploration of the Motivations for Shared Space Development in Nine European Cities

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ABSTRACT

Many cities in the developed world are suffering from the plight of the automobile and its effect on urban planning and design. Roads break up neighbourhoods and people have become more individualistic with the increased reliance on private transport options. One of the emerging methods to reclaim cities back for the people is the concept of shared space. The idea seeks to redesign urban areas in a way that allows pedestrians, cyclists and drivers to have equal priority when traversing in an area.

As the shared space concept is gaining ground in some places, it is still apparent that there are some knowledge gaps about how and where it will work. This study has been conducted with nine European cities that are interested in shared space and have varying levels of experience with it. The research seeks to understand the reasons for this interest by looking at the current circumstances in the cities. By understanding which types of situations motivate a desire for shared space, the knowledge of the topic is expanded and preliminary conceptions of the effects in these locations is made. Generally, every location studied was unique in its requirements and goals for improvement, but there were also some trends and similarities found among the different locations. The findings are informative for how shared space is seen to have an effect in these specific locations, and also possibly how the concept could be expanded further within the city, or even within the similar cultural context at a wider scale. The study creates openings for further research with regards to the actual implementation of shared space in these locations, but also for expanding these findings through the study of more cities in a similar way.

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Chapter 1: Introduction

The influx of automobiles in Western society throughout the last several decades has changed and influenced cities quite extensively. Rather than the traditional city, which focused on the ease of movement for walkers and cyclers, the modern city is now concentrated on the ease of automobile traffic. This has been a gradual change as people began to experience the benefits of owning a personal vehicle, such as the ease of travelling further distances, and the ability to complete many more errands in one trip. However, the result of this increasing dependence on individual transport has been the sprawling of cities, as well as many other traffic related issues. As motorized vehicles have gained prominence in today's society, problems of traffic congestion, health, safety, social degradation and environmental concerns have infiltrated the discussions of many different divisions of professionals.

In response to these issues, many different methods have been developed and implemented, resulting in a variety of benefits or potential solutions. These include traffic calming methods such as round-abouts, speed bumps, and raised crosswalks, as well as several others. One of these methods in particular is the concept of shared space, which has begun to turn heads towards a different type of solution. Rather than continually increasing regulations in hopes of addressing some of the issues mentioned above, the idea of shared space is to eliminate all traffic regulations and return the responsibility of safe travel and manipulation to the road users. In this way, road users are made to be more aware of their role in traffic. As coined by and further developed by Hans Monderman of the Netherlands, the basic notion of shared space is to widen "opportunities for communities and individuals to shape and influence the built environment in ways that encourage diversity, distinctiveness, urban quality and civility" (Hamilton-Baillie, 2008a, p. 162).

The concept of shared space is beginning to gain acceptance and use in several European cities, and administrators, advisors, and implementers are gathering more and more information. Shared space can generally be seen from the outside as a solution to traffic problems, however it can also provide a wide range of benefits for other aspects of the city as well. Since each location in a city has a unique identity and setting, it is equally necessary to develop a unique solution for each location. Consequently, new information can be gleaned from each resulting development. Then the sharing of this knowledge becomes crucial to future developments and creating solutions for similar types of problematic areas. As expressed by the World Health Organization (WHO), "the international community must also play its part in halting and reversing the current global trend of increasing road traffic delays… by intensifying support for prevention." (WHO 2009, p.x(10)) It is therefore imperative that an effective method for dealing with these issues should be further researched and developed to test the effectiveness in additional international contexts. The expansion of this idea may be limited to developed countries, and may not yet be a solution for cities in developing countries (Mohan, 2002) as they may first need to gain some structure in traffic regulation. However, the expansion of knowledge of shared space in the European context may prove to be beneficial.

"Shared space is an approach that is still in its infancy, and there remain many barriers to overcome, observations to be made, evaluations to be conducted and experience to gain" (Hamilton Baillie, 2008a; 178). In response to this need for continued knowledge gain about shared space, an international initiative has been formed to promote this knowledge sharing throughout the European context. It has been identified that upon completion of a different European level project (titled 'Shared Space'), that there are still some major barriers for new cities to implement shared space in their locations. These are a lack of practical knowledge, such that cities do not know how to implement the concept into their city, and there is also a lack of cross-cultural/cross-national

examples, which causes a question of whether it will work in different cities' specific contexts. In response to these shortcomings, city administrations from several European countries have joined up with a group of technical firms in order to address these issues, and thereby discover the position that shared space may have in their cities. With the approval and funding from the European Union, the resulting knowledge gained will be promoted and shared with further potential locations. One of the major parties involved in this initiative is the traffic consulting company Goudappel Coffeng, with whom this research has been conducted through an internship position.

For the first step in this process, it is important to determine why these cities are interested in adapting and adopting the shared space concept for themselves. As it will be described in the next chapter in more detail, shared space can have far reaching benefits for a city, or neighbourhood in which it is implemented. Therefore, it is important not only to understand the current situation of a city as a baseline against which to measure changes, but also as a starting point from which to increase the level of knowledge gained by the initiative. Through working with city administrators to determine the reason for their interest in shared space for a specific location within a city, it will be possible to help future developers determine whether shared space would be an option for them as well. Scientific knowledge gain is also possible through comparative analyses of the reasons for interest in shared space. As this concept has been developed as a way to deal with certain specific problems within a city, it is interesting to determine if the reasons for different cities' interest are along the same lines. New ideas may emerge, or different reasons may be expressed, and an analysis of these would help to expand the current knowledge on the subject. Accordingly, through a focus on the current literature related to shared space, this research attempts to answer the question:

> *Which types of urban circumstances motivate an interest and desire for the development of the shared space concept in cities of several different European contexts?*

And accordingly, it aims to further address the following questions:

1. What are the cities' motivations for their interest in shared space?
2. What is the role of the current local situation for these motivations?
3. What are the desired effects within a city's structure and community that are expected to result from the implementation of shared space?
4. Are there some similarities between the different cities or specific locations that relate to similar motivations for the interest in shared space?

In order to answer these questions, it is first important to establish an understanding of the history of how and why cities became so motor vehicle oriented and what impacts this has had on the city structure. It further moves on to propose how the concept of shared space attempts to deal with and ultimately solve these urban issues. These discussions will be followed by the research that was conducted with nine specific European cities that have shown interest in the Shared Space concept, and will explore the ideas and reasons behind this interest.

Chapter 2: Theoretical Background

2.1 Brief History of Urban Planning

Historically, city streets were the medium for several different activities, especially casual sidewalk contacts and movement between places. However, as technology has shifted towards increased speeds of transit with the advent of the automobile, planning changed courses. As outlined by Moran (2006), in his paper "Crossing the road in Britain, 1931-1976," there was a struggle to determine who would be allowed the right of way on the streets between the cars and the pedestrians. Starting in the 1920's, there were increasing numbers of accidents, and developments were needed to arrange the traffic in order to allow for a smooth and safe flow. An interesting idea surfaced, which is now the essence of shared space, that people need to work together, pedestrians and drivers, to ensure safe passage for all involved. This idea is captured by the following quote from the winner of an essay competition in the 1930's:

> "More ills are wrought by want of thought than by want of heart', says the poet, and how true to our everyday lives these words are… We cannot be made safe by Laws and Acts of Parliament alone, these only serve as a guide, we must have the will to become safe and each one must shoulder the wheel." (Moran, 2006; 481)

As a result of this debate, the chosen way to deal with the problems was to give the automobile a more direct right of way, and as a result, pedestrians were required to look both ways before crossing the street. Physical structures, such as painted lines, or pedestrian lights were experimented with and adopted in some instances, which further separated the need for contact between drivers and pedestrians.

One of the most influential reports along this course was the now well-known *Traffic in Towns,* which was more commonly known as the Buchanan Report. In this report, it was outlined that "the two principal purposes associated with streets and public spaces, those of movement and of social interaction, would need to be strictly segregated as traffic volumes increased" (Hamilton-Baillie, 2008a; 165). While this report suggested ways to do this in an extreme form, such as allowing cars on ground level and pedestrians on a built form one level higher, the report was very influential for future planning as the influx of automobiles was causing problems within the current structures (Buchanan, 2001). A further report was developed stating "Traffic segregation should be the keynote of modern road design" (Ministry of Transport, 1967). Together, these reports influenced the design of modern cities in order to deal with the increasing use of personal vehicles, and to design for both slow (pedestrian walkways) and fast (motorways) transport (Kärrholm, 2009). This separation was also part of the modernistic tendency towards monofunctionality of uses (Ehrenfeucht & Loukaitou-Sideris, 2010). While Jane Jacobs (1961) criticized this method of urban organization extensively for ruining the urban atmosphere, it seemed to be the most efficient way of dealing with the issues troubling cities, as "planners find it difficult to embrace messiness, spontaneity and unpredictability" (Ehrenfeucht & Loukaitou-Sideris, 2010, 461). Therefore, cities were designed for safety and efficiency through separation, which was especially important, since it was seen that travel time was wasted time between real activities (Lyons & Urry, 2005), and in order to reduce the travel time, pedestrians needed to be separated from automobile traffic.

This modernistic method of city planning and organization of public spaces and transport is still used quite extensively in many cities of the developed world. During this movement, planners believed that the separation of uses was important; living, working and traffic were all separated (Shared Space 2008). The belief that the segregation of traffic modes provides the safest and most efficient movement is a dominant belief

amongst planning professionals in cities today. It has influenced the current style of creating safe roads through increased levels of regulations. Generally, in response to accidents or locations of concern, the method to correct the problem is to put more signs or lights to guide both drivers and pedestrians through in a safe way. Through these increased regulations, the perceived travelling risk decreases, causing people to rely solely on these regulations rather than their own judgement.

While these methods of separation and regulation are effective in many intersections and major roadways, it is also causing problems in a more general sense. People are becoming reliant of these guiding regulations and rely much less on their own judgement. In this way, it is time that a new method of traffic regulation, or deregulation, enters into planners' toolboxes. "Planners need to accommodate the concerns and opinions of the community" (Trayers et al, 2006, 54) and develop in ways beneficial to more than just vehicles. The current planning climate has taken decades to form, and traffic mode separation has been the main method of creating safe transport climates since the advent of the automobile. However, this research attempts to challenge these methods, and expand on the knowledge of the shared space method, which will be explained further in section 2.4 below.

2.2 Shifting Towards Livable Cities

In more recent years, it has become apparent that this segregation may not actually be the safest method for reducing traffic accidents, and is definitely not the best way to create lively cities. With the current focus on designing for the automobile, many other aspects of city life are downgraded, and it is for this reason that there has been a lot of criticism regarding the current designs in urban areas. "Modernist urban landscapes were built to facilitate automobility and to discourage other forms of human movement… [Movement between] private worlds is through dead public spaces by car" (Freund and Martin, 1993, quoted in Urry, 2006; 22). In this way, it is not only the separation of people in cars and those outside, but also between neighbourhoods that are separated by roadways. "Movement through space in the car as an experience of individual autonomy is shown to be problematic; this is a direct consequence of how the impact of the automobile has restructured social space, especially in the city" (Thacker, 2006; 187). Altogether, these effects tend to result in a very individualized society, with people avoiding contact with strangers, especially as they are able to travel in isolated pods without requiring any direct interaction with other people (Urry, 2006). Not only does this have a large impact on the transport structures in a city, but it also affects the social, environmental, and economic aspects of a city as well.

In response to some of these concerns, a new movement, based on the more relational aspects of a city took the form of new urbanism and the compact city. "The central tenet of the new urbanism is that both civic architecture and pedestrian-oriented streets can act as catalysts of sociability and community" (Knox, 2011; 147). This has changed the focus from vehicles more as inanimate objects, to looking at the relational aspects of the people in and around them. While the notion of designing walkable cities was not entirely new with this movement, the focus has moved considerably towards "limiting sprawl, fostering community, civility and sense of place in compact, mixed use, walkable and relatively self-contained developments (Knox, 2011; 143). These goals go hand in hand with understanding the relations between people in society. The current segregation of traffic modes tends to place people at a distance from the public realm, and allows them to act in ways unlike themselves. In this way, road rage attitudes are enabled, as drivers are removed from direct physical presence. "Looking at one another is what affects the connections and interactions of individuals… [it is] the most direct and 'purest interaction" (Urry, 2006; 21). In this way, when people rely on the traffic signals provided, they do not need to work together using eye contact for safe travel, but rather

just need to obey the traffic laws. As a result, people lose touch with others, having lost the requirement for one of the most important aspects of interaction.

Current planning methods have begun to understand the relational aspects of people in society, however, they still take a very Euclidean and object-centred approach to planning as these relational aspects are not yet part of the planning conception (Graham and Healey, 1999). In this way, planners must consider the relations and processes of urban areas rather than just the objects and forms that compose a space. With this move towards relational planning, there has gained an understanding that urban areas are comprised of much more than just the physical design by planners, but that communities also have a role in the development of the places in which they live. The public realm is no longer just a medium through which to travel, but it can have intrinsic value in itself as well. These ideas have been will be expanded further in the subsections below.

This move away from modernistic planning styles has also encouraged a move towards sustainable development, as environmental issues have come to the forefront of current thought. This movement has come hand in hand with new urbanism as the sustainability goal is not only in terms of the environment, but also in terms of community development (social justice) and the economy (Connelly, 2007). Jabareen (2006) outlines several parameters that are effective in developing a sustainable urban form, including compactness, sustainable transport, density, and diversity. These aspects are all highly related to the effects that automobiles have on a city. A compact and dense city would require less long distance travelling for daily needs. This could possibly then encourage more active modes of transport. As well, if designed for sustainable transport systems, a city would have the infrastructure capacities to enable a diverse range of transport modes, such as biking or walking. If these types of motilities are designed for, it is more likely that people will feel safer and encouraged to use active modes.

2.3 Current Physical Urban Situation

2.3.1 Traffic Safety and Congestion

Traffic safety and congestion concerns have plagued urban and traffic designers for many decades, and still they continue to afflict modern road designs. Road traffic collisions are an important cause of death, injury, and disability (WHO, 2009), and these types of casualties are still on the rise (Shared-Space.org, 2008). While the causes for these problems include fast speeds, poor designs, or user faults, the leading way to eliminate, or even simply decrease the rates has been through the segregation of usage types. It is generally understood that in developing traffic systems, pedestrians (especially the elderly and children) and cyclists, are the most vulnerable in terms of safety concerns. This has led to a basic view that different flows of traffic should be separated in order to have safe transport systems. While the format may have evolved, this was the leading method in the 1960's (Hamilton-Baillie, 2008a), and still continues quite prominently. However, this separation is not always feasible due to limited space and money (Chong et al., 2010). And as well, research completed in the United States shows that using bicycle lanes in addition to pedestrian walkways and regular vehicle roadways, is still not very effective at reducing the amount of collisions due to the increased risk at intersections (ibid). In effect, it is necessary to determine other possibly more innovative ways of dealing with the issues of safety and of peoples' behaviours in this regard.

As well, along with the general trend towards increased car ownership and usage, traffic congestion continues to rise. As a result, commuter journey times tend to be unreliable, which can not only have economic and environmental impacts, but also social impacts due to effects that congestion tends to have by creating aggression in drivers (European Commission, 2007; Wegman, 2008). Therefore, it is necessary to develop attractive, effective, and safe alternatives for commuters. This includes a need for seamless

accessibility to collective transport as well as safe infrastructure for walking, cycling and private vehicle use (European Commission, 2007).

Solutions to these problems could stem from the understanding that the current trend is quite cyclical. As private car use increases, pedestrian/vehicle collisions rise and pedestrian safety concerns rise, decreasing the comfort of being a pedestrian, and essentially encouraging these people to drive a private car. As a result, road designs are continually modified to reduce these collisions, however this tends to take the form of accommodating and making private vehicle use easier, which encourages the continued use of vehicles, and in essence contributes to rising congestion and collision levels. However, it has been suggested that roads are actually safer when cars and pedestrians are further integrated (Hamilton-Baillie, 2008a). This will be further explained in the section below on an introduction to shared space. First, however, the basis for this can be understood by looking at the differences between the traffic world and the social world. The current traffic system is very uniform, predictable, planned, compulsory, and vehicle oriented; however, the social world is much more diverse, unpredictable, spontaneous, voluntary, and people oriented (Engwicht, 2005). In effect, it is becoming clear that the responsibility of safe road travel should be a shared effort between road designers and road users (Larsson et al., 2010). In the face of such high levels of road collisions, it is easy to blame the design, and seek remediation through increased regulation. "But what if the *inherent nature* of rules also makes it more difficult to decide and do the right thing? …rules might actually (albeit ironically and unintentionally) undermine ethical decision-making" (Michael, 2006). It is becoming evident that increased regulation is not always the solution, and working hand in hand with road users, designers may be able to find more effective solutions.

2.3.2 Health Concerns

Health concerns are also very directly related to the issues in traffic safety. As safe manoeuvrability for the more vulnerable types of road users (pedestrians and cyclists) becomes less safe and accessible, it becomes more attractive to drive a personal vehicle; effectively leaving these active modes of transport to the wayside. Traditionally, daily exercise was easily achievable by either cycling or walking to the workplace or to conduct errands, however, the tendency towards commuting by motor vehicle has increased the numbers of injuries caused by collisions, increased the cases of respiratory illness, and has resulted in a lack of physical exercise (WHO, 2009). While physical exercise is actively promoted and encouraged in some places, it is becoming more common to add it as another activity, rather than combining it with a daily commute. As well, if streets are physically unattractive, it becomes undesirable to walk or cycle places. Chong et al. (2010) conclude that even in the light of upward trend of bicycle sales in several countries, the effect has not been as complete as would be possible through cooperation with road designers. It is possible to see this cooperation in the recent publication from the Greater London Authority (2010) in which there is a focus on the benefits of walking. These benefits range from improvements on community viability to improvements on public health (both in terms of increased exercise and air quality as discussed in the next section) with a definite trend towards the creation of more vibrant cities. Encouraging healthy lifestyles through active modes of transportation has been a challenge in today's society, especially with the continued dominance of motorized transport, and as such, it is imperative to focus on a new way of dealing with transportation issues.

As health conditions degrade due to the increased use of the automobile, it has become an important part of planning to design areas in order to encourage walking and cycling. While this is highly correlated with the level of safety experienced by the individual, there are also many other aspects incorporated in spending time in active transportation. This can be seen in regards to the creation of attractive walkways in order that a person may enjoy their walking experience. If people can enjoy the experience of getting somewhere

in an active way, they are more likely to engage in active modes, and thereby getting exercise while completing regular tasks. Travel is often seen as simply time wasted in between real activities, but it can also be seen as having intrinsic value in and of itself (Mokhtarian, 2001). A trip could be more enjoyable if the surroundings are more attractive, and people may chose to take more active methods over private vehicles if there is a positive experience involved. According to Jane Jacobs (1961), one of the requirements of a vital city atmosphere is having people on the street interacting with one another. The results could be part of a positive feedback to help encourage more people to become active, and thereby helping to increase the health of the city residents. It is important to note that while it may seem simple to address these issues in terms of physical planning and designing, there are other aspects as well. The involvement of the citizens in planning processes is expressly important as it is impossible to know will have a positive effect on their active mobility behaviour without their input (Trayers et al, 2006).

2.3.3 Environmental Concerns

There are several environmental issues that relate quite extensively to the excessive use of motor vehicle transport in today's developed world. Most obviously, the high levels of vehicle exhaust are contributing to poor air quality and smog in urban areas, and are of a major concern for the environment and for the health of residents. This is especially recognized as a problem worldwide as can be shown by the many initiatives in place to reduce these CO_2 levels and their effects on people. In a study done by King et al (2009) it was tested and shown how both noise and air pollution caused by motor vehicle traffic is very detrimental for both the health and quality of life of people who walk near roadways. "Thus, if noise and air pollution are taken in combination, they represent significant environmental hazards to urban pedestrians" (p.309). Not only is there a problem for pedestrians, but there is also a severe problem with environmental degradation that can be associated with this dependence on the automobile. In one regard, as cities continue to sprawl due to the ability and freedom of people to drive private vehicles, more land is taken over by cities and roads and threatening the natural and rural environments (EEA, 2006).

One other important environmental aspect with regards to cities is the amount of green spaces in the urban area. As vehicles have taken over priority in city planning, many natural areas are lost to roadways that are built to allow for easier transport. However, it is important to realize and value the positive effects that these natural elements can have. Natural elements within an urban area can increase the aesthetic and cultural appeal of an area, while at the same time helping to reduce levels of air pollutants (Tyrväinen et al., 2005). This can have positive effects for the environment, as well as social effects. However, as the dominance of the automobile continues to rise, and road networks increasingly take priority, natural elements tend to be reduced and highly segregated.

2.3.4 Economic Concerns

The influx of automobiles in modern cities has also resulted in some severe design concerns and the decline of streets and streetscapes. With a focus on development for ease of motor vehicle traffic, streets have been widened, and road signs litter the streetscapes (Hamilton-Baillie, 2008a). These tendencies can have severe economic effects on businesses as they suffer from a poor image. As is generally observable, the more attractive a street is, the more people will want to walk on it, and thereby increasing the chances that they will enter small stores. The opposite is also true, if a streetscape is unattractive; people tend to avoid it, in search of more attractive streets. In effect, investors are attracted to pedestrian friendly and unique street designs. This realization is taken to heart by an initiative in London called "Save Our Streets" in which

there is an understanding that the streets are blighted with a large amount of signs, and as such planners are working to return them to places that people want to be (English Heritage, 2004). As well, work to promote walking can be seen to encourage "people to spend money in their local communities [which] is vital to making a more vibrant, better balanced city" (Greater London Authority, 2010; 14). This in effect cannot only encourage people to walk along these attractive streets and spend money, but can also attract people to live there. This is also a very important aspect as in the current state of globalization, and intercity competition, the attractiveness of a street can definitely impact the livability of a city (Shared Space, 2008).

> *"The city centre should offer an appealing atmosphere. It should be a space that people want to visit and a space in which people want to spend time and money. It should not be a space in which people just do their shopping and leave afterwards" (Mayor, 2003* as quoted in Spierings, 2006)

The current state of declining streetscapes has a negative effect on the economic viability of many smaller stores and is encouraging people to drive cars out to big stores that are much less accessible by active modes of transport. These stores continue to be supported in this way, and there is a downward spiral of street vitality. This cyclical trend is apparent in many aspects of society, and as these problems continue, the need for change is becoming more apparent.

2.3.5 Social and Community Cohesion

The huge reliance on the automobile for personal transport has affected the development of cities to such a great extent that public areas tend to revolve around conveniencing the driver. However, this has resulted in many negative aspects for both the community and the individual. While many see the automobile as a great way for privatized individual transportation, it is this individualization that is generally the cause of the degradation of community. There has been a marked decrease in social cohesion due to this limited social interaction, which historically had been developed through casual daily interaction with strangers when travelling by means other than the automobile (Hamilton-Baillie, 2008a). It can be understood that "There is a dawning collective guilt about how we've allowed the car to wreck not just the physical environment, but also the social environment" (Casselman, 2007).

The strength of the social capacity of a city or neighbourhood can depend on many factors, and is built up through a long process. There are no direct ways in which physical plans can create a sense of community, but rather it is a process that involves the build up of mutual trust within the community (Roseland, 2000). This level of community can be measured as social capital, a value that cannot be planned for, but rather is developed over time through various activities that require space to occur (such as parks, community centres, etc). This can include informal groups such as mother's watching out for other children playing even if they do not know each other. However, with increasingly dangerous streets, and society's tendency towards individualism, parents often no longer allow their children to play in the street, which thereby reduces the chance for mutual trust with neighbours, and also reduces the children's ability to learn social skills in an informal way (Hamilton-Baillie, 2008b).

Social cohesion is an aspect of society that cannot be planned for, but rather only encouraged for through the use of different design methods. "The sheer physical presence of roads, schools, and houses does not render them meaningful. It is the collective intentionality, the capacity of humans to assign functions, to symbolize these objects beyond their basic presence that makes them part of the social reality" (Cuthbert, 2003, p. 139). The presence of people in public areas helps to create a sense

of place of an area, which is an important aspect for community sustainability (Roseland, 2000). In this way, the public identity of a place can only be "formed over time from many, many little sidewalk contacts...a web of respect and trust, and a resource in time of personal or neighbourhood need...And above all, *it implies no private commitments*" (Jacobs, 1961, 73-74, original emphasis). The emphasis on these contacts is that they are purely casual, voluntary, and not institutionalized in any way.

It is important to note here that while talking about social cohesion, it does not necessarily mean that a person's network is located within their neighbourhood. With the growing use of ICT's to connect people, networks tend to be much further spread out rather than with their neighbours (van Kempan, 2010). As such, "living at the same place does not automatically mean living together" (ibid, 6). However, just because people are not close friends with their neighbours, it does not mean that social cohesion does not have a place. As Jane Jacobs (1961) explains, both mutual trust of neighbours, and the liveliness of streets, can work together to create safe neighbourhoods where people voluntarily look out for each other through "an intricate, almost unconscious, network of voluntary controls and standards among people themselves, and enforced by the people themselves" (ibid, 40). This is a very important factor as "the bedrock attribute of a successful city district is that a person must feel personally safe and secure on the street among all these strangers" (ibid, 19). A socially cohesive community can create a very attractive area, as it tends to have a livelier and friendlier atmosphere. Currently, while this may be present in some areas of cities, there is definite downgrade of the social cohesion of cities with the current focus on the automobile and individuality. In reducing the level of privatization of people and increasing these casual contacts with people on the street, the scariness of the unknown would tend to decrease (ibid.). In this way, it would be possible to develop a truly cosmopolitan neighbourhood where there is acceptance and respect for differences rather than exclusion (Young, 2006). Thereby, neighbourhoods would be increasingly diverse, and the goals of planners for inner city areas would be achieved.

Through the development of social capital in an area, there is also a production of a community identity. This is especially becoming a clear trend with regards to the creative class of young urban professionals (yuppies). Richard Florida (2002) discusses how cities should be planned with the new creative class in mind. In this way, the city itself should be planned and developed in a way to attract these people, rather than simply relying on and investing in businesses to attract young workers. A city's infrastructure will remain even if businesses leave, and in this way, a neighbourhood identity can be shaped through design methods that incorporate outdoor recreation and uniqueness by mixing both young and old elements (buildings and people). In all these ways, the design of a city can have a large impact on the level of social cohesion among the citizens, but with the dominance of the automobile, this aspect of society has been degraded to a large extent.

2.3.6 An Integrated Approach through Public Space

Urban areas are comprised of a series of different public and private spaces, which vary in the levels of accessibility for different people. There has been an advent of privately owned and managed public space (Smidt, 2010), which has resulted in a limited availability of entirely public spaces in cities. As it will be described below, shared space does not try to take back these privately owned public spaces, but instead makes the available public spaces accessible to all. This means that areas that are currently dominated by traffic may be redesigned to allow more people to experience the area in ways other than just to travel through. It is for this reason that a discussion about public space is so important to this topic, as in many ways, "City space is not natural but is constituted by a physical presence *and* social processes" (Leary, 2009; 195, original emphasis); social things do not happen in an empty container of space.

The presence of public space in a city can have far-reaching benefits in many aspects of public life. In general, well-designed public spaces attract people to spend time in the public realm. This can be beneficial in terms of health, as people are more willing to walk if they have a comfortable and attractive area to walk through. Through this, there can be an economic benefit for adjacent stores and cafés, and people are able to socialize with others around them, albeit in mostly indirect ways. These benefits however all rely on one key aspect: *the public space needs to be designed well*. As such, "Planners will best serve their many urban publics by providing better infrastructure and adaptable spaces throughout the city and by realizing that by *controlling less*, residents and visitors alike would benefit from the sidewalks' wealth of offering" (Ehrenfeucht & Loukaitou-Sideris, 2010, 469 emphasis added).

It is very important to understand that a well-designed public space does not rely only on designers and planners to develop a place in the physical sense, but also on the active production of the space by society. This is one of the fundamental attributes of Lefebvre's ideas on the production of space and the trialectics of urban space as a social construction (Leary, 2009). In this theory, a space is comprised of three aspects: perception, conception, and lived, or in other terms, spatial practices, representations of space, and spaces of representation (ibid). It is through the interaction of these three aspects that urban space is created, and it cannot be created devoid of any of the three. Without going into too much detail, an urban space can be conceptualized and conceived by planners and subsequently produced in the physical sense though construction of the plans. This physical space is then perceived by users as a built physical environment, filled with material images and daily routines. However, there is a third aspect, which is more symbolic in nature, the lived spaces of inhabitants as they attach emotional meaning to the places where they spend time. In this way, people do not only simply move through urban spaces, but they interact with it and develop emotional feelings of attachment, or dis-attachment depending on their feeling of the space. As a result, the intentions for the area as conceived by the planner affect the space, but what people perceive and do may be entirely different. Together, the space is created, not only in terms of the physical design, but also following a social construction as well.

Bringing this back to the benefits of public space, if the physical and social construction of an urban public space complement each other, people are more likely to develop a positive emotional relationship with the space, encouraging them to spend more time there. As well, in the move towards this more relational understanding of urban planning, it is understood that when people walk between places, they experience an embodied reaction to their surroundings (Middleton, 2010). Urban spaces have an effect on people, and in this sense, both the social and the material realms have the same importance in planning.

Along with these ideas, there is also the suggestion that public space can only have meaning so long as it is the site of the public sphere, as the public sphere requires space to proliferate (Smidt, 2010). Having open spaces in urban areas does not mean they are suitable or attractive for the public sphere, something that requires a lot more development than can even be done through consultations with public entities. Public culture is

> "… produced by the many social encounters that make up daily life in the streets, shops, and parks - the spaces in which we experience public life in cities. The right to be in these spaces, to use them in certain ways, to invest them with a sense of our selves and our communities - to claim them as ours and to be claimed in turn by them - make up a constantly changing public culture … public space is inherently democratic. The question of who can occupy public space, and so define an image of the city, is open-ended" (Zukin 1995, p11)

In this way, "there should therefore be no cause for surprise when a space-related issue spurs collaboration… between very different kinds of people" (Lefebvre, 1991; 380, as quoted in Leary, 2009). Public space is a very important aspect of urban life as it creates the space for activities that otherwise would have no place. It can bring together communities, along with designers, and improve the image of a city.

2.4 Shared Space as a Possible Solution

> "*If the findings from the increasing number of shared space schemes continue to demonstrate the positive outcomes from treating drivers as intelligent citizens, governed by the same social protocols that underpin civility in other public places, there is a hope that the segregated world of post-war urban planning will no longer need to blight the coherence and quality of the built environment*." (Hamilton-Baillie, 2008a)

In response to these issues that are plaguing modern cities, many different methods have been devised; however, none with such an ambitious goal as shared space. It is a pretty lofty claim for one method to propose a solution to so many problems, but following its implementation in several locations, including locations in both the Netherlands and the UK (Hamilton-Baillie, 2008a); it is proving to be a promising solution. When considering implementation in a new location, the opportunity is given to develop the space in a unique way, which is suitable for that specific setting. In this way, and along with the nature of the concept, it is not possible to define rules for the implementation of shared space, but rather provide some general ideas that that could help to create a more integrated plan. It is especially because of this adaptability that it has shown such success.

While the idea of shared space has recently been developed as a concept for bettering cities, and implemented as a strategy of traffic control in several cities, it is not a brand new idea. Historically, the idea of sharing road spaces has been apparent in many locations, but was not researched much as a potential system for adoption in the highly regulated areas of the modern city (Hamilton-Baillie, 2008a). In 1976, a concept was developed by the Dutch government called '*woonerf*', or yard for living (ibid). This concept was designed to allow both traffic and social activities to share the same space, and has been an essential part of the movement towards the more recent concept of shared space. This has also been marked by a trend in traffic literature suggesting the need to share the responsibility of road safety between designers and road-users rather than simply increasing regulations and clutter on the roads (Larsson, 2010; Wegman, 2008).

This integrated approach is encouraged by the European Commission 'Action Plan on Urban Mobility' (2009) in which it is understood that urban areas are facing challenges in transport in terms of environmental sustainability and congestion issues, while still dealing with social concerns. Therefore the need for an integrated approach is explained as necessary to develop infrastructure and policy making to link transport with environmental protection, health, land use planning, housing, social aspects of accessibility, and mobility.

2.4.1 Traffic Safety and Congestion

The basic idea of designing shared spaces is to eliminate road demarcations and signage. This allows designers to work with the users of the area to create spaces much more fit for human scale movement. In this way, the responsibility for safe movement is placed on the road users by requiring them to be more aware of their surroundings rather than simply relying on set rules. Conventional traffic situations have been designed to

eliminate all possible risks associated with travel, but "if you try to banish all risks, dangers and irritation from public life, you also suppress everything that might happen unexpectedly, spontaneously" (Shared Space, 2008; 41). By generating space for unregulated manoeuvrability, people are able to ensure safe passage for themselves through the use of eye contact with other road users. In effect, the responsibility is placed on at least two parties, rather than only one, as is the case in most conventional traffic systems (Shared-Space.org). For example, when travelling through a traffic light, one user has a green light, and if another runs their red light, the resulting accident would be the fault of only one party. However, with the concept of shared space, there are always at least two parties equally responsible for safe passing. As a result, vehicle and bicycle traffic tends to move slower due to the increased risk, which has been shown to effectively reduce the amount and severity of any accidents that do occur (Hamilton-Baillie, 2008a). "In the absence of rules, predictability and certainty, drivers have to rely on cultural signals and informal social protocols. Speeds reduce, eye contact becomes the norm, and the driver becomes a part of her or his social surroundings and context" (Hamilton-Baillie, 2008b; 133).

As well, one of the main foci of the shared space initiative is to reduce and eliminate traffic congestion. Many cities are faced with congestion problems due to the stop and go patterns of the current regulation styles. This can be seen in intersections that are regulated by traffic lights, where a line of cars can pile up behind a red light, and the whole line will not even get through the light during the green part of the cycle. A lot of time is wasted in this manner, however, with shared space, the idea is that vehicles will be able to flow at a more or less steady pace through an area, which results in little to no congestion.

2.4.2 Health Benefits

Along with increased safety, the shared space concept has many further benefits for the city and the individual. Not only are many of the intruding traffic signs and demarcations that were littering the streetscapes absent, but also spaces are redesigned with people in mind. As such, the quality of a space is measured according to its contribution to the quality of life experienced by the people using the area. Thus, the goal is for the creation of people places (Shared Space, 2008). With the availability of attractive urban spaces, people are given the opportunity to express themselves and move freely. This in turn can increase the desirability of walking and cycling in areas that were previously dominated by automobiles. This has obvious health benefits, as people who were previously only comfortable with driving could find it easier to travel by active modes of transport if they involve moving through attractive areas. As well, there could be results in terms of people walking or cycling for shorter distances that normally would have been traversed by driving. People friendly spaces can also work to attract people to substitute other indoor activities with spending time outdoors in these spaces. Informal meetings could also take place in these attractive urban spaces, allowing people the health benefit of fresh air. Shared spaces are created through consultations with the public that will use them, and as a result would hopefully become desirable places to subside. In this way, the health of these users could be quite positively affected.

2.4.3 Environmental Benefits

These health benefits also link directly to current concerns over traffic related environmental pollution. With more people using active modes of transportation, private vehicle use would decline, and there would be a marked decrease in exhaust emissions. While this sounds like a very simple result, it is a very core outcome of shared space. As it relates closely to the traffic benefits described above, speeding and congestion problems can be alleviated if the shared space development proves to be successful as designed. Thus, more constant traffic flows can result, and the rapid speeding up and

slowing down which is customary of the stop and go traffic style of conventional traffic models will be eliminated. Essentially, this would result in lower levels of fuel consumption, and a more environmentally friendly alternative is created. As vehicle speeds are smoothed out as described, these shared spaces also witness a reduction in noise volumes. Noise pollution can have very negative impacts on the quality of place experienced by users of the space, by creating uncomfortable situations. In this way, shared spaces are designed to encourage slower, more constant vehicle speeds, and with less intense accelerations. In this way, shared space can combine two seemingly opposing arguments for protection of the environment. It can be described that environmental advocates push for an increase of public transit and cycling, but that automobile advocates say that with the right conditions (traffic flows, speed limits, engines, etc) vehicle traffic could also be environmentally friendly (Bonham, 2006). Shared space works to combine these two arguments and create conditions for efficient use of vehicle traffic, while still encouraging walking and cycling.

The development of shared space also has the potential to include some natural elements in its design. With more sharing of space between the different modes of transit, there comes available more spaces for trees and other vegetation within an otherwise completely paved area. Through a more free style of design, these added natural elements are meant to improve the attractiveness of the area and encourage slow speeds. By making streets more interesting through the use of things like interactive gardens or sculptures, people would be encouraged to be active in the spaces. It can be understood that nature may provide support for physical activity and that people with access to natural areas are more likely to use them (Wells *et al*, 2007). Therefore, if the urban areas are designed to incorporate these aspects, there is a higher chance that people will be drawn to spend time outdoors in these shared spaces.

2.4.4 Economic Benefits

The economic benefits that can be achieved through the introduction of a shared space in an area are highly related to the improvements mentioned above. Hence, by eliminating gaudy road signs and speeding motor vehicles, public space can become more usable, friendly and attractive for all people using all different transport types. Then, with more people being active at the street level, places can become more vibrant and the general atmosphere of the space can be inviting to more people. The effect of this improved street life can result in economic benefits for the businesses located on or adjacent to the space. Potential customers would be more common, and small restaurants and cafés could possible have space for terraces. Another outcome that could result from this vibrant streetscape would be the movement into the housing in the area. With the attractiveness of the space, it may create a new economic centre, and in turn could increase the economic status of the city itself (Hamilton-Baillie, 2008a). Accordingly, these vibrant and unique city areas tend to attract investors resulting in further benefits for the area. All of these advantages would of course take a long time to develop, and they would also depend on the size and location of the shared space. Nevertheless, the development of a shared space has the potential for far reaching effects on the economic situation in an urban area.

2.4.5 Social and Community Cohesion

The effect of developing an area into shared space encourages people to interact much more during commuting. Through making eye contact, and working together to follow social protocols for safe manoeuvrability, people build a sort of camaraderie between each other. As well, with the increase in amount of people walking on the street, it is more common to come into contact with strangers and develop social bonds. Another important aspect is that social life is created by the collective achievement of a group of people (Fine, 1999). It is important for the development of social capital that the process

of development includes a large participatory aspect: to "plan *with* stakeholder rather than *for* stakeholders" (Roseland, 2000, 107). One of the key elements of shared space is that it relies on a highly participative process, and the community that is involved in the development may in turn develop a higher level of social cohesion as they can have a collective sense of pride in their achievement.

2.4.6 Public Space

As a whole, shared space is basically a public space that is accessible to all, including motor vehicles. This may seem rather unconventional, but as described, it opens up the previously restricted urban areas for wider public use. The implementation of shared space requires input from across disciplines and users, and works to give currently restricted areas (such as roads that are restricted to cars) back to the public realm. This then becomes a location where relational planning is important, and all interested parties work together to develop a public space where they can agree on the design. Rather than having semi-private or regulated 'public' spaces, shared space sets forth to achieve the goal of communal planning.

> "*A great public space cannot be measured by just its physical attributes; instead, the function of the public space should be put ahead of its form. The community should be a source of inspiration for the public space in order for the citizens to feel it is their own. A mixed-use space should take advantage of a local community's assets, inspiration, and potential, ultimately creating good public spaces that promote people's health, happiness, and well-being*"
>
> (Gri, 2010, 376).

With the collective design of the area, all users that would have a stake in the area can be represented and planned for. As such, a shared space is a public space that is designed by and for the people that will use it or be affected by it.

2.4.7 Shared Space in Practice

To give a better idea of how the concept works in reality, it is helpful to use an example where shared space has already been implemented. While there are several areas outlined and discussed in depth by Ben Hamilton-Baillie (2008a&b) and the Shared Space Institute (2008), one example has been extracted:

> "In 1998 a five-way intersection in the nearby town of Oosterwolde was redesigned. All the former standardized priority markings and highway kerbs were removed, to be replaced by a simple paved square on a slightly raised platform, recalling its history as the focal point at the head of an ancient canal system. Cars, bicycles, trucks, pedestrians, wheelchair users negotiate their way across the space employing an intricate and unspoken set of protocols reminiscent of the ice-skating rink. It is not unusual to see conversations taking place in the middle of the intersection as lorries and cars weave through the apparent chaos of the unregulated space. Yet in its nine years of operation, speeds and serious accidents have reduced, traffic flows remain unaffected despite significant increases in numbers of vehicles, and the space has been transformed into a lively focal point with rejuvenated cafés and shops around its perimeter." (Hamilton-Baillie, 2008a; 169).

De Brink, Oosterwolde, The Netherlands   Hamilton-Baillie, 2008a; 169

2.5 Critiques of Shared Space

While shared space can be painted as a spectacular solution to some of the worst problems plaguing cities is this day and age, it is not without opposition. One of the main issues is the problem it can pose for people who have physical limitations. As safe manoeuvrability relies on eye contact between the different people, it can place blind and partially sighted people at a severe disadvantage when crossing or moving around the area (Ramboll Nyvig, 2007). "The kerb edge is fundamental to the mobility of blind and partially sighted people, particularly guide dog owners and long cane users who are trained to use it as the key orientation cue in the street environment. Its removal exposes blind and partially sighted people to greater risk, undermines their confidence, and so creates a barrier to their independent mobility" (Guide Dogs, 2007, 2). While there has not yet been developed entirely successful solutions to this problem, some have been explored and research continues (ibid). As well as blind people, other physical limitations can reduce the agility or ability to comprehend the more random style of movement. While there is an understandable barrier for these people to accept a new method, it has generally been overcome with a site visit to a current location as has been done with concerned elderly people in the North of the Netherlands (Arnold Bosma, personal communication).

Another area of concern is how different people would react when trying to traverse such an unknown area, such as aggressive versus passive drivers. It would seem that by opening up an area to move about however a person sees fit, that speedy drivers would take advantage, and cause problems for other users. While this may be true to some extent, the problem is not as extreme as it would seem. Through a personal visit to an existing shared space site, it was observed that fast drivers still move through fast, but that they do so with a heightened level of observation of the area around them. With the increased risk, they tend to slow down more than they would have otherwise. Conversely, people that aren't sure how to pass through an area take their time and move slowly waiting for the other users to clear. While this was observed at an intersection with relatively low activity, the principle could work at busier sites as well.

These concerns relate to shared space areas following the implementation, however, there are also problems that arise during the development stages. There are a lot of people that have interests in these areas, as they are public spaces and can have the

capacity to define an area. This means that there can be big barriers relating to the requirement for a mentality shift from conventional regulation methods to a more seemingly chaotic method. Of course this is often met with a lot of opposition, as people can be very critical of the concept. Developing something that is unknown is often met with opposition, especially as the conventional methods have been the form of regulation since it was required near the time of the advent of the automobile.

In a more theoretical sense, the ideas of shared space can also be criticised in terms of their claim for benefits concerning social cohesion. This topic is highly debated, as it is difficult to measure the levels of social cohesion in society. Some people claim that in this technological age, peoples' networks are no longer in their neighbourhoods, and the place they live has less of an effect on them (van Kempan, 2010). Space does not have the same determining factor as it once did, since people now have their activities in very diverse areas, and there is an erosion of space as a determinant of social relations. In this regard, shared space may not create a sense of social cohesion in an area, but rather just provide a new way for people to move through to their other social engagements. In response, the idea of shared space is to develop a rather unwritten level of social cohesion in which people create bonds based on sharing the same space. This does not mean that the strangers on the street need ever become friends, or even acquaintances, but rather, they are able to develop the ability to interact with others and develop social skills.

Chapter 3: Research Design and Methodology

3.1 Design

This research has been designed as a way to provide a preliminary understanding of the reasons for a specific interest of European cities in the shared space concept. As this is the first step in the process of the spread of knowledge from some experts on the concept, to others that know very little about it, there are several different perspectives to be gained in this regard. The focus of the research is on specific European contexts where there is some level of interest for the possible implementation of shared space.

As the research was done in conjunction with an internship with Goudappel Coffeng (GC), the research format was guided by their needs. GC is part of a consortium that has written a proposal for the Intelligent Energy Europe call for proposals in which they wish to work with cities to promote and develop the shared space concept. As such, this consortium has combined several technical partners from several countries in Europe, and further branched out to include specific cities in the proposal. These cities have shown some interest in the implications of shared space in their contexts, and as such have joined the consortium as a way to further the knowledge about the concept through shared methods. The first stage of the project is to involve and develop seventeen pilot projects in nine different cities, and further expand the knowledge gained to other interested cities. As such, these first nine cities have been found and included through known contacts of GC and the other technical partners. Due to this, depending on the size of the city, the contacts are generally not the heads of departments, but rather they are the active members of these departments who meet with consultants and attend conferences. In this way, they tend to be informed of current trends, allowing them to determine whether their city would be interested in these new concepts. This means that the cities which have been included in the consortium, and therefore in this research, have been able to gain approval from the city administration in order to allocate certain amounts of time and funds to the project upon acceptance of the proposal.

As part of the proposal development, it was determined that it would create a stronger application if the motivations for a city's interest were included. As well, it was important to conduct the research in a way that would be meaningful for the topic as well as develop a broader understanding of the European climate for the implementation of shared space. In this regard, it was chosen to use a comparative research design using a multiple case study approach. This method would "allow distinguishing characteristics of two or more cases to act as a spring board for theoretical reflections about contrasting findings" (Bryman, 2008; 61). While this method of research and analysis is not highly detailed in its approach, it offers a way to go deeper into specific cases and compare the outcomes by suggesting possible links between phenomena (Yin, 1994). In this way, it was determined that qualitative research would allow for a broader understanding of the phenomena at play. Secondarily, it was determined that the most useful data collection method would be through an online questionnaire. One of the main reasons was based on the language barrier between the different countries, and having written questions would make them more understandable. As it has been shown in the previous sections, shared space is very adaptable and is uniquely developed for each specific site, and therefore it is not reasonable to ask quantitative questions. The design on some of the questions allowed for a set response in order to maintain some consistency between the respondents, but generally the contact persons were given the freedom to express their motivations in their own words, which would allow for a more complete understanding.

3.2 Questionnaire

The focus of the questionnaire was to look at the various aspects of city life relating to the themes that have been developed in the sections above. Through some research, these themes were expanded to include four chapters of related questions. The first chapter focuses on the specific locations of interest within each city, ranging from one to four sites. It was formulated to develop an understanding of the current situation of each location in order to recognize possible trends in the reasons for the interest of different cities in the shared space concept. Questions in this chapter dealt mostly with the current physical formation of the areas such as the current division of the types of traffic modes and uses surrounding the proposed areas. This chapter was also formulated to create an understanding of the policies and solutions that are in place and have been explored within the city prior to this interest in shared space. As a result, a complete picture of the current policy climate and the physical situation of the area could be articulated.

The second chapter of the questionnaire deals with the reasons for a city's interest in shared space by ranking two different lists of potential reasons according to their relevance. The first list was formulated according to the themes of traffic safety, health concerns, environmental concerns, economic concerns, and social cohesion. It asked whether there were concerns in these areas, or whether they were rather just seeking improvement in the area regardless of the current situation. In this way, the different reasons for interest in shared space would be comparable between the different cities, as well as helping with the language barrier. The second list asked the correspondent to rank a list of five potential expectations (with the option to add more) as a result of participating in the shared space initiative project. These deal with a broader perspective for the whole city, and together the motivations from the city can be directly determined.

The third chapter takes the focus of determining the level of involvement of various stakeholders in the shared space development and implementation process. This section listed the potential groups of people and organizations that might have a stake in shared space in each city. In this way, correspondents were asked to rate whether each stakeholder would be involved in the process, and whether they would be benefitted or hindered by shared space. Following these ratings, correspondents were asked about how these stakeholders (including citizens and city administrations) would be included in the development process. This is an important aspect of the research because the development and implementation of shared space is meant to be unique to each location, and in this manner requires the input of the people who would be most affected by the changes made. As well, understanding which stakeholders are seen to benefit from or be hindered by the project is helpful to complete the picture of the motivations for the interest in shared space.

The fourth chapter was developed mainly to understand the financial motivations for the participation in the proposal. This was a very brief section simply asking for a clear statement from the cities about why they would co-finance the project if it were approved.

Following the generation of the questionnaire, it was presented to many of the technical partners in a start-up meeting for the proposal. It received positive feedback here, and was further sent out for a more critical analysis from some of the technical partners and also one test run from a city contact who had a high level of knowledge of shared space. The detailed feedback was helpful in adjusting some of the questions to have a clearer focus. (It may be helpful to note that on several questions, a five point scale was used, and when describing these outcomes in the results sections, they are described as: not at all, minimal, moderate, high, extreme.)

3.4 Data Collection

Upon completion, the questionnaire was published online and sent out to the contacts at the interested cities. These correspondents were then given several weeks to respond, which allowed for time to conduct possible necessary research and consultations. As there were many questions, respondents were asked to respond with any questions or concerns they had in regards to the answers expected of them. The questionnaire was sent out to ten cities, and only one failed to respond. Completed questionnaires were received from six cities first, and several weeks later, three more responses were received. In total, nine cities with a total of seventeen locations provided responses to the questionnaire.

3.5 Data Analysis

As mentioned above, the research method used for this research was through a comparative multi-case study analysis. In this way, following the collection of data, the responses were analyzed individually in order to develop a case description of each city and its locations. In this step, each of the completed questionnaires was examined for missing information and possible inconsistencies within the responses. As well, interesting details and responses were explored for new ideas or different perspectives.

Following this initial analysis of the first six responses, the identified points were addressed through comparison across the different cases. This resulted in some common identified issues within the responses, and several questions were raised that regarded all the cities. As well, certain inconsistencies or points of further interest were addressed in specific questions for those specific cities. This led to a follow-up set of questions, which was e-mailed out to the respondents for clarification and further detail collection.

Upon receiving the responses to these follow-up questions from all but one city, each case was summarized, examined, and explained in the city profiles section below. This allowed for the creation of a descriptive framework of each city and its circumstances that led to a desire for shared space. In this way, the main research question along with the first three sub-questions was addressed. The fourth sub-question deals with a somewhat different focus, as it requires the comparison between the different cities in order to find patterns or similarities using pattern matching as a technique (Yin, 1994). In this way, the cities can be grouped according to similar circumstances or goals and checked for patterns in other areas, such as their motivations for shared space. This then has the potential for use in evaluation following the implementation of shared space, but also possibly for future interested cities, which could possibly be categorized in the same ways as a potential way to determine how shared space may affect their locations.

Chapter 4: Results

4.1 City Profiles

As a first step in the analysis of the data, each city was examined separately and a profile was developed for each as a potential place for the implementation of shared space. These profiles are described in this section, along with the main motivations of each city for the participation in this shared space initiative (the main motivations for each city are summarized in Table 5 in Chapter 5). This section provides the basis for the response to the main research question of '*which types of urban circumstances motivate an interest and desire for the development of the shared space concept in cities of several different European contexts?*' As well, it addresses the first three sub-questions, *(1) 'What are the cities' motivations for their interest in shared space?', (2) 'What is the role of the current local situation for these motivations?',* and *(3) What are the desired effects within a city's structure and community that are expected to result from the implementation of shared space?*

4.1.1 Lisbon, Portugal

Lisbon is one of the larger cities included in the initiative with a population in 2008 of 489,562 people (City Population, 2011), and is the capital of Portugal. As discussed in the responses, there is a large focus on the improvement of the pedestrian climate within the city through the use of several initiatives. Lisbon is a city with a rich history, and there has been some work done to restrict traffic accessibility in some historical areas. This improvement of the pedestrian climate has been a part of 'Lisbon's Pedestrian Accessibility Plan', along with several other initiatives based on energy reduction. One important step that was taken in the city was the installation of more than 600 supply centres for electric mobility within the city. As well, there has been the implementation of 30 Km/h areas to reduce vehicle speed and increase safety. In line with this current trend towards sustainability, shared space is seen as a very important solution that has potential to be part of the city's improvement. "The width of many consolidated streets cannot fully accommodate mandatory widths set by law for pedestrian and motorized traffic. Although shared spaces is not specifically considered in national traffic regulations, its implementation in these streets, among many others, is a legal necessity" (Lisbon questionnaire).

With this high level of interest about what shared space could do for their city, Lisbon is interested in exploring its implications in four different locations within the city. Each of these locations varies in its situation and may contribute to a different aspect of the interest in shared space; as such, each will be analyzed and discussed separately.

1. Sol ao Rato Street

The first location is located at Sol ao Rato Street, an area that is equally mixed between historical and modern elements. The streetscape is made up of a mixture of offices, retail, restaurants/cafés, and residences, as well as a public square and street-side parking. However, the area is dominated by personal vehicle use (90%) as the main mode of transportation, with a small percentage of pedestrians (10%), which are minimally integrated. While there is a relatively low level of traffic flow (0-500 vehicles/hour), it is still considered to be highly dangerous with regards to traffic, as there are problems with both speeding and congestion in the area. Currently, the area is busiest for through traffic in the early morning as there is access to a subway station through here. As a result of implementation of shared space, the modal separation is hoped to achieve 50-50 distribution of pedestrians and vehicles.

2. Bacalhoeiros street

The second location of interest, Bacalhoeiros street, provides a very different type of situation, where there are currently already high percentages of pedestrians (80%) with only a small percentage of freight and personal vehicles (10% of each). In this way, the area is moderately integrated between the different modes, and is considered as not at all dangerous in this regard. This is supplemented by being an historical area that is commercially active, with offices, retail, restaurants/cafés, and a public square. The levels of traffic flow are also low within the area (0-500 vehicles/hour) and spread out throughout the day, as the main generators of this activity are the restaurants along the street. The main goal in this location is to improve the pedestrian environment and resulting with 50% walking, 20% cycling, and 30% freight traffic.

3. Caminhos de Ferro

Caminhos de Ferro, the third pilot location is again a clearly historical area surrounded with retail options, restaurants/cafés and a public square. As well, there is a train station nearby and the main pedestrian access to a nearby residential area. However, it is currently dominated by personal vehicle use (70%), with only ten percent pedestrians and then several bus lines running through the area, making up twenty percent of the traffic on the street. This has created an extremely dangerous situation, with problems of speeding and congestion even though there is a relatively low level of traffic flow through the area (0-500 vehicles/hour). In this way, as shown in the photo, the space is very limited, and the change anticipated with the implementation of shared space would result in a more even distribution of modes (personal vehicle 30%, bicycle 20%, walking 20%, and bus 30%).

Lisbon Caminhos Ferr Street
Received through personal correspondence

4. Estrada de Benfica

The fourth location offers a unique situation, as it is blocked off from personal vehicle traffic. The historical portion of the Estrada de Benfica street serves over five bus lines, resulting in this as the main transport type (70%), while pedestrian traffic constitutes the other portion (30%). This allows for a moderately integrated style of planning between the different modes, but is also considered as moderately dangerous, which could be related to the speeding problem in the area. Regardless, there are both retail and restaurant options mixed with residences, and through the development into a shared

space area, the hope is that there will be equal distribution between bicycles, walking, and buses.

While these are the four locations that have been included for the purpose of the project, there are similar situations throughout the city of Lisbon, especially in regards to the lack of space on many streets. "In these streets (and many others that are very similar), where the street width (from façade to façade) is defined and very limited, it is very difficult (and in many cases impossible) to fit legally mandatory widths for pedestrians (on sidewalks on both sides) and traffic. As a result, sidewalks are very narrow, and although some pedestrians can freely and frequently hop from sidewalk to road and back (as cars are far or near), those with sensory or physical limitations do not have the same flexibility, and as a result have to choose just one option, and this often means walking on the road" (Lisbon questionnaire). Currently, this causes dangerous situations, which is listed as the main concern that could potentially be remedied by shared space. Another benefit that can be attributed to the implementation of shared space is the potential for a rise in social cohesion. This is an important factor from the correspondent's point of view, as it was ranked second. While this is a difficult aspect to measure, it can be a noted benefit. It is also interesting to note that the concern over the health of citizens (with regards to both pollution and exercise levels) constitutes a major factor in the search for a new method of traffic regulation. It was noted above that there are city wide initiatives in place to encourage pedestrian activity, and it is seen that shared space may be one solution that could help to achieve a better pedestrian climate.

As discussed earlier, the implementation of shared space in a city location requires the support of the users of that space, and in this regard must allow for their participation in its development. This is understood as an essential part in order to achieve the best results possible. When asked in supplementary questions about the largest expected barrier to this implementation, it was mentioned that "Local experience tells us that the implementation of shared space will probably have to deal with the resistance of those who presently park or drive cars through these streets, the doubts of local merchants and the safety concerns of residents and city traffic officials."

4.1.2 Rauma, Finland

The city of Rauma provides a different type of situation, not only in geographical position, but also in terms of population size, which is less than a sixth of the population of Lisbon, at 39,715 residents (in 2010, City population, 2011). As well, it offers a very unique situation, as it has been declared a UNESCO World Heritage Site since 1991, which seems to be the main reason for the interest in shared space. By implementing shared space into this historical area, it would be possible to return it to a more pedestrian friendly area, without prohibiting motorists in the area. Currently, 80% of the city's inhabitants live within a three kilometre radius of the centre, which has the potential to create a perfect situation for increased levels of walking and cycling. As such, there is a direct need to diminish the intensity of traffic within these areas, and to create good conditions for each of pedestrians, cyclists, and motorists. The traffic climate is primed for this type of change, as there is already a speed limit of 20 km/h in the area, as well as the permission of people to cross the street anywhere, not only at zebra crossings. It was noted that there is generally no concern over the health of the citizens, and the only environmental concern is over street dust in the spring. This creates the impression that the desire for shared space is based on a desire for a only a few of the potential benefits.

Old Fishmarket

The participation in this project is based on one specific location in the old town of Rauma. The Old Fishmarket area is mainly used as a parking lot and through-route for vehicles, which severely degrades the potential quality of the area. It is interesting to

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note however, that there is already a pretty even distribution between the different modes of traffic, as walking takes up 50% of the total, cycling 30%, and the personal vehicle level is only at 15%, leaving the last 5% for buses. By looking only at these percentages, it may seem that there is already a good climate for pedestrians, however, it is discussed that there is only minimal integration between the different traffic modes, and a desire to improve the historical attractiveness of the area. This suggests that while there seem to be no problems in the area in terms of traffic safety (minimally dangerous, no accidents, no speeding, and no congestion), there are still concerns over the attractiveness of the area. In this regard, there are many different aspects that could be incorporated into a new shared space area. These include such things as retail and restaurants options, as well as residences and both green space and public space. Together, these different uses could work together to create a vibrant city life, which currently is absent in the area.

Rauma Old Fishmarket (area between black pen marks)
Received through personal correspondence

This historical fishmarket centre is the only location currently under consideration for shared space methods. However, it could be possible upon the success of the project that the concept could be expanded throughout the old city and possibly even further as the majority of the people live close to the centre. This would of course highly depend on the people living in and using the area, as they would be a major part of the process. In Rauma, there is a public authority that will hold open briefings for the various stakeholders, as there is a realisation for the importance of involving citizens in decisions of this manner. In this regard, it is interesting to note that when looking at the motivation for this project, the most important factor is a concern over the current level of social cohesion in the area. Overall, the biggest barriers to implementation are understood to be opposition from the motorists who currently use the area for parking, and elderly who may feel that decreased regulation would result in lower levels of safety. Generally, it is assumed that businesses such as retail and restaurants, and active transport users, will be benefitted from the introduction of shared space, and that private automobile users and elderly people will be hindered by the implementation.

4.1.3 Graz, Austria

The city of Graz provides a great opportunity for testing shared space designs as they have been working on several initiatives surrounding traffic design possibilities. This city of 257,328 people (in 2010, City Population, 2011), currently as a whole has a rate of 47% using motorized private transport, and the goal of the city is to reduce this number to only 40%. This is currently planned to be achieved through political guidelines of:

focusing on sustainable transport modes, being a city of short distances, considering mobility as a whole, understanding that mobility in urban space means the priority for gentle and sustainable mobility, and looking at the city as a part of the whole region. In this way, shared space is seen to be a helpful tool in creating high quality urban spaces, resulting in a better quality of life in the city. This political climate within the city provides a perfect base for the testing of the shared space concept, as the goals are already there and oriented in the same way. The previous guideline of "gentle mobility" was able to enforce the use of environmentally friendly modes of transport through the use of pedestrian areas in the city centre, and bike lanes along priority streets. As well, the plans for the development of shared space in one area, as described below, are already underway, and in this way, the city of Graz may become a leading example for the implementation of shared space.

Sonnenfelsplatz

The main location of interest for a pilot project is located in a mainly historical area of the city, where there are offices, restaurants/cafés, residences and a market. The current situation is quite balanced between the different traffic modes, as there is about one-third of each of personal vehicles, cycling, and walking in the area. It is interesting to see that the goal of implementing shared space in the area is not to shift this balance, but rather to encourage pedestrians to remain in the space longer due to a more pleasant and better quality atmosphere. Currently, the traffic flow through the area is quite high compared to the other cities, with 1001-1500 vehicles per hour going through the area,

Graz, Sonnenfelsplatz design plan
Received through personal correspondence

and as well, the area is considered to be moderately dangerous, with approximately 60 registered and unregistered accidents over the last five years. However, it is exceptional that there are currently no problems with congestion or speeding in the area, even with a speed limit of 30km/h. One further detail that makes the area unique is that it is in close proximity to a university campus, which is the main generator of traffic through the area.

As work to develop this area into a shared space is already underway and is nearing the completion of planning, it is helpful to see how certain details are viewed. One of the most important aspects to recognize is the role of citizen participation throughout the process of planning. A new form of citizen participation was developed, called "Charette", which is a very concentrated process over one week in which to work on a new concept for an area. During this week, an interdisciplinary team of architects, civil engineers for traffic planning, commissary for traffic safety and commissioner for the disabled people, worked together with citizens in a café in place, to develop and agree on the concept for the location. In this way, it was possible to include and allow for citizen participation in the plan development, which is seen by the city as a basic required principle for traffic guideline creation.

As was expressed in the questionnaire response, the main reason for the implementation of shared space in this location is for the increased level of attractiveness that would result. Also, shared space is seen as a potential solution to the problems in the area in terms of creating a safer traffic environment, as well as encouraging social cohesion among the people using the area (while there are more benefits mentioned, these were ranked as the top three). The choice to use shared space as the method to achieve all of these aspects was based on the fact that in this historical area, the space is very limited, and with heightened regulation requirements, the separation of traffic modes is not feasible. As well, with the current goals of the city, the shared space concept is able to fit in and create situations that may help to encourage sustainable modes of behaviour even in the face of potential opposition from certain people. As mentioned in the follow-up questions, "the structure of a place influences peoples' behaviour; without street signs, surface markings, paths, cycling lanes and lanes for car traffic, the car driver feels insecure. This leads to an increase in attention and decrease in speed, which is beneficial for physically challenged people, but also children. In addition, the whole space is supplied with tactile lines and tactile cross marks" (Graz follow-up questionnaire). In this way, no stakeholders were identified as being hindered by the implementation of shared space.

4.1.4 Parma, Italy

The Italian city of Parma can be classified as a medium sized city in this study with a population size of 186,690 (2011, City Population, 2011). The work with shared space in this city provides yet another different perspective, as there has been work done to create a more sustainably mobile city in the past several years. This work has been led by concerns over air and noise pollution that derives from traffic and other agents. One aspect of this has come in the form of establishing a large 'ZONA 30' area, in which the maximum speed is 30 km/h. In this way, shared space would be able to work at further improving the area in order to increase the benefits already achieved, but also help to reduce the dependence on personal vehicles as the main source of transportation. The goals of the sustainable mobility movement in the city have been to increase the safety of vulnerable road users, reduce pollution, improve the accessibility of urban spaces, and improve the environmental and aesthetic quality of the city. These goals are directly in line with the claims of shared space, and the site provides a good starting point with the changes that have already been made.

ZONA 30 Lubiana

This area within the city has been established as a large zone of 30 km/h in hopes of achieving some of the goals mentioned above. It has nearly 40 kilometers of roadways that are highly regulated with special lighting and signage for 30 km/h, but there are still improvements to be made. One of the main goals is to reduce the amount of personal vehicle traffic flowing through the area, as this currently accounts for 76% of the total traffic flow. As well, a further 13% can be accounted for by bus traffic, which leaves only 6% for bicycle

Parma, ZONA 30
Received through personal correspondence

traffic (including mopeds), and 5% for walking. In this way, there is a lot of room for change, especially as the area is considered moderately dangerous and through the area there is a flow of more than 2000 vehicles per hour. Throughout the area, there are many different types roadside uses such as restaurants/cafés, residences, schools, offices, as well as place for green space, public space, and a playground. It was mentioned also that there used to be several problems with speeding and congestion throughout this area. However, with the implementation of the 30-km/h zone, these problems have been alleviated as a large amount of through traffic has been diverted to other peripheral roads.

The position of the city of Parma on the road to dealing with several problems relating to sustainable mobility could provide an interesting perspective on the application of unconventional traffic regulations. The methods that have been used thus far have included the implementation of more regulation to address issues within the area, but may prime the area for further changes. The implementation of the 30 km/h zone was initiated by an organized group of local residents, and shows the importance of public involvement in the development of new systems. In this way, the city of Parma realizes the need for stakeholder support, and plans to present and explain the shared space project development to citizen groups and schools. Subsequently, they can obtain observations and suggestions and develop results through a conclusive public conference. In essence, the work done to change the area into shared space is seen to provide benefits for several stakeholders in the area, including the elderly and physically challenged people, since it is understood that shared space focuses attention on vulnerable road users. As a response to this inclusive method, the interviewee does not anticipate any serious barriers to the implementation of shared space in the area because it is prepared for this type of change through the prior use of citizen participation and the zona 30.

As there have already been some changes in the area due to this zona 30, it is difficult to determine what the main goals of shared space would be. Prior to the introduction of this regulation, there were severe problems with safety due to speeding and congestion, and as such, the main goal in the area was to reduce these problems. However, as changes have been made and have reduced these problems (which were ranked as the first and second in the reasons for interest in shared space) the next motivation relates to the environmental situation in terms of air and noise pollution. Subsequently, the next ranked concern is over a desire to improve the health condition of citizens. This benefit could relate both to the environmental concern over pollution levels, but also to the desire to encourage active modes of transportation. In this way, as suggested by the next goal, the use of shared space could have largely beneficial results in terms of social cohesion. As such, shared space could have a big impact on the neighbourhood, and it may even show that through a prior introduction of other traffic calming methods, it might be even more effective.

4.1.5 Municipality of Opsterland, Netherlands

The inclusion of the municipality of Opsterland (29,991 residents, City Population, 2011) offers a very valuable perspective as they have experience with the implementation of shared space in several locations within the region. As such, the input that has been received from them is very beneficial as they have first hand experience in dealing with certain issues that may arise during the development and implementation of shared space. Through several successes within the area, it is realized by the residents that shared space is a desired and effective solution to the problems they previously experienced in these locations. As a result, this is the desired method to use for dealing with problematic situations, especially in terms of traffic safety. The expertise they have obtained through these developments provides a valuable resource for the other cities, but also in regards to this research. It is possible to see that there are benefits realized

through this type of deregulation, and is supported by the residents that currently use previously developed sites. However, the resulting participation in this project is mainly in hopes of gaining funding for the realization of the project, since the development of the plans are nearly completed. Despite this though, there are still benefits mentioned with regards to the implementation of shared space in one specific location.
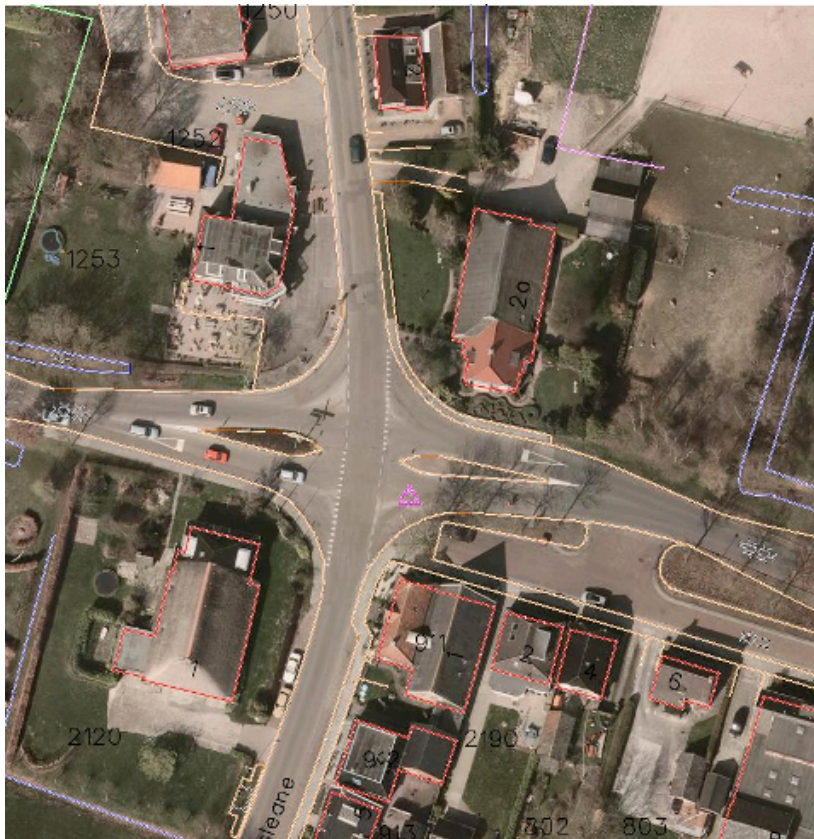
Frieshe Palen Center

The Friesche Palen center is currently dominated by the use of personal vehicles (approximately 74%), and is an area that entirely separates the different modes of traffic. Cycling (10%) and walking (10%) rates are rather low comparatively, and as this location is in a historical area, this can cause concerns. This location provides the local people with many types of services such as green space, public space, restaurants/ cafés, resid- ences, and schools, and could greatly benefit from a re-routing of motorized traffic (including freight which currently accounts

Opsterland, Friesche Palen Center
Received through personal correspondence

for 5% of the traffic in the area). This is especially seen as important as the area is currently rated as moderately dangerous, and there are problems with motor vehicle speeding through the area, even though a speed limit of 30 km/h has been implemented. In this way, it seems that residents have come to realize the benefits of shared space, and see that it may provide a solution to these problems where previous speed reductions have been unsuccessful. The main goal in this specific location is not to change the rates of the different methods, but rather, reducing the speed of these automobiles and allowing people to experience better safety on the street could provide many benefits. Another main concern with the area is the level of attractiveness, which is understandable due to the dominance of the automobile. The resulting desire for change to the area in this regard, is also seen to have positive effects on the level of social cohesion experienced by people using the area, as they would be able to spend more time on the street, rather than just pass through.

It is clear that shared space is the preferred solution in the location, and as such, Opsterland has already begun the consultation process with residents. This is understood to be one of the most important aspects of the development of these projects, since it is for the residents that these areas are designed, and as such it only makes sense that they would be included in these proceedings. In this regard, citizen involvement has been used in the early stages of this development, and has shown their support of this initiative. As well, it is encouraging to see that the development of shared space is expected to support cross-discipline cooperation within the city administration. Another important aspect to note, especially from an expert in this area, is that shared space is

expected to be beneficial for both elderly and physically challenged people. These people are often of the highest concern in implementation of shared space, however, it is positive to see that there is no concern over possible hindrance of these people. It was expressed that while there is generally resistance from elderly people for this type of deregulation, upon showing these people a location where shared space has previously been implemented, they become much more positive about the prospect of having shared space in their location. One further benefit to shared space can be seen as the economic benefit that could result from the implementation of shared space. While this could be assumed to follow along with the idea that a more attractive place attracts more people, it is also expressed to be benefitted by an increase in tourism to the area as a result of the new (non) regulation style.

4.1.6 Donostia-San Sebastian

Donostia-San Sebastian is medium sized city with 185,506 residents in 2010 (City population, 2011) and provides a good opportunity to explore the possibility of shared space as a working concept in a Spanish setting. The current strategies within the city are focused mainly on the reduction of personal vehicle use as a way to reduce the noise and air pollution problems within the city. These concerns are not only for the environment, but also for the health of the citizens that are exposed to these levels of pollution. These reduction goals are currently being undertaken through the improvement of the public transit system by creating more bus lines and switching to the use of bio-fuels, increasing the amount of car sharing, and cycling by providing public bicycle services and building fifteen kilometers of bicycle lanes. These improvements have a common goal of improving the city, and shared space is seen in this context as a way to make the city friendlier and to allow the coexistence of all kinds of transport by allowing people to live together with respect. As well, these initiatives, while effective at reducing pollution levels, could be supplemented by creating a design that supports these goals, such as shared space. Donostia-San Sebastian has had some success with the implementation of some 30 km/h zones, which have successfully reduced the speed of vehicles resulting in increased security for pedestrians and cyclists, and essentially making the areas friendlier.

As part of this shared space initiative, there have been three locations identified for development of the concept. However, in a way contrary to the other cities, these locations have been chosen in low-density areas in the surroundings of the city. In this way, the goal of looking at shared space may not necessarily be for implementation, but rather as a way to add a new potential development style for future reference. With the current economic crisis, it will not be possible to implement shared space in these areas, but studying the option may provide the knowledge needed for future possibilities.

Donostia San Sebastian, Ciudad Jardin
Received through personal correspondence

1. Ciudad Jardin (Loiola)

This area is comprised mainly of residential units and a school with a library, of which tends to generate the most traffic flow within the area. Currently, the main form of transport is by personal vehicle (approximately 50%), but there are also bus and tramlines available

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(20%) and also a noticeable level of pedestrian traffic (20%). There is also a small level of freight that uses these roads (5%). This variety of uses is currently regulated through the use of complete separation of traffic modes, and from a limited perspective seems to be effective; there have been no accidents in the area in the past five years, or any problems with speeding or congestion, and is rated as not at all dangerous. Despite this, it is an interesting location to for the implementation of shared space, as it is a generally calm area that is seeking improvements rather than just solutions.
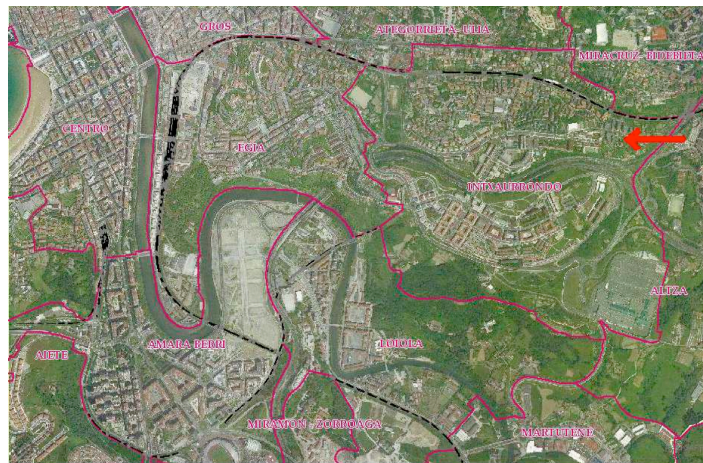
2. Antondegi

This location offers a slightly different situation, as it is still made up mostly of residential units, but is also bordered with offices and some green space. It can also be considered as quite modern in contrast to the other two locations, which are regarded as equally mixed between historical and modern. Despite these differences, the main transport divisions are quite similar. The main modes dominating the movement are by motor vehicles such as by personal vehicle transport (60%), freight movement (10%) and buses and tramlines (10%). As a result, the area is considered to be minimally dangerous; one level more than the previous location, and it is possible that these differences could be related. While this may affect the level of pedestrians, there is still a fair amount of people walking (15%) and less cycling (5%). All the different modes are still separated completely as a way to regulate and create a safe environment. The resulting situation is that there is no speeding or congestion in the area, even though the main reason for through traffic is a nearby industrial area where many people work.

3. Julimasene

The area of Julimasene is even more dominated by personal vehicle transport (85%), as it is comprised of only residential units with regards to development, and some green space. As a result, the traffic in the area is mainly comprised of people going to and from their homes. In this way, since the area is located near the edge of the city (see the diagram), there is a very low percentage of travel done by foot (8%), cycling (2%), or bus (5%). However, despite the dominance by motorized transport, the area is not considered to be dangerous at all, nor is there a problem with speeding or congestion, which could be expected since it is a residential area.

With regards to the chosen locations, it was questioned what the expected results would be if shared space were to be implemented here. In response, it was expressed that the goal in these areas is not to change the percentages of modes used, as they are not big enough to make modal changes, but rather help to create more security for people that would like to walk or

Donostia-San Sebastian, Location of Julimasene
Received through personal correspondence

cycle. This is explained with regards to the use of motor vehicles or public transport as necessary for travel to other areas of the city, while only the local movement within the neighbourhood could be done on foot. In this regard, the reasons for developing shared space generally have different motivations that relate to the expectations of shared space for use within the city in a more general sense rather than just in these locations. This can be seen as the highest ranked reason for interest in shared space was in terms of seeking to improve the level of safety. As was described above in the locations however,

there was generally no problem with safety in the areas. This potential disagreement was addressed in the follow-up questions, and it was explained as "the safety for pedestrians and cyclists (most vulnerable) is very important in the design of urban development even if before in the area there where not accidents or speed problems." Subsequently, the next two motivations relate to improving the health of citizens (which as described above tends to relate more to the effects of pollution) and improving the attractiveness of the areas. It is also interesting to mention that social mixing and cohesion is given the next priority, which would relate to the goal of making the areas friendlier.

The need for stakeholder participation in this development is regarded as an important part of the development and potential implementation of shared space in these areas. Currently, there is a department within the city that is in direct contact with organized groups of local residents from various neighbourhoods, which allows for the needs of these residents to be voiced. As well, the development of shared space in Donostia-San Sebastian can be seen as a way to increase the level of cross-discipline cooperation between the city administrations, which is currently occurring to some degree on other initiatives. Overall, "this topic is a new idea in the city of Donostia-San Sebastian. It is something that has not been developed before. We think that it could be a good idea to implement this idea in one area of the city in order tot be a model for future urban developments" (quoted from questionnaire).

4.1.7 Espoo, Finland

The city of Espoo in Finland is located within the metropolis of the Finnish capital of Helsinki, and offers a unique situation, as it is a city of 247,970 people (in 2010, City Population, 2011), with five developed centres. However, there is still a lot of long distance car travel within the city, which could be reduced by making these centres more attractive and accessible. In this way, there are strategies in place within the city to defragment the urban structure, improve the public transport, and concentrate the public services in the centres. As well, there are general concerns over the levels of noise pollution in certain areas within the city. This is seen to cause some problems with regards to the health of citizens, but not in areas that are close to the potential shared space areas.

1. Siltakatu

Siltakatu Street is located in a modern part of the city and is lined with shopping centres on both sides of the street, as well as some residences. This provides an interesting opportunity for the testing of shared space in different types of locations. Currently, the street is dominated by the use of personal vehicles (73%), buses (6%), and freight (1%), which orients the area in terms of the street. As such, there is a much lower level of foot (13%) and bicycle (7%) traffic, which is actually quite low when considering the retail dominance of the area. Even still, the area is regulated through the complete separation of these modes, which currently seems to be working regards to safety, as it is not considered to be dangerous at all, and there are no problems with speeding or congestion.

2. Otakaari

Otakaari Street offers a different perspective again with regards to potential shared space locations. It is relatively mixed between historical and modern elements, and is located near a technical university. This street is bordered with offices, retail options, restaurants/cafés, and green space. However, despite this variety of uses, the area is still predominantly by private vehicle use (70%), although there are still a fair amount of pedestrians (18%) and cyclists (10%). This mixture of uses, although separated by

mode, is still considered as moderately dangerous, which could be related to the problem of motor vehicle speeding through the area.

The development of shared space through participation in this project will be helpful in regards to gaining information in a collective way that would be better than just by working with a private consultant. In this way, the main goals for the introduction of this new method into the city, is for the improvement in the attractiveness of the areas. By removing road signs, and creating a more people friendly environment, the attractiveness can be increased, and subsequently, there can be positive effects for the level of social cohesion among the people in the areas. The administration in Espoo has seen successes of similar implementations in other Finnish cities, and hopes to achieve similar benefits here.

In the plans for development for these locations, there will be consultations with safety officials and public transportation planners in order to create a high quality shared space. However, it was also mentioned that developers and landowners will probably only be given information a this point. As well, quite contrary to the goals of shared space development, citizen involvement in the process was expressed as being important. This is rather odd as one of the main goals (even mentioned in the subsequent question) is to create a place for social interaction and to "increase the possibility of contacts between people, which will hopefully improve the sense of community as well" (quoted from questionnaire). In the follow-up questions, this apparent contradiction was explained that it is not immediately part of the plan to involve the citizens, although it will become more important when they get more into the details. Along these lines, it was mentioned that all the users of the area, including the elderly and physically challenged, except for the private automobile drivers will experience a benefit from shared space. This topic was addressed further, and it was determined that drivers would be hindered by the requirement to drive slower. This is one of the key aspects of shared space, in order to create a safer environment for other more vulnerable road users, but as it has been experienced in areas where shared space has already been implemented, the slower speeds simply mean that the ride will be smoother, not longer. In this way, it is interesting to see what mental images are conjured up when shared space is described and developed into a preliminary understanding. This is not to say that these concerns are not grounded, especially as shared space areas may produce different results in different locations.

4.1.8 Karlsruhe, Germany

The city of Karlsruhe is located in southern Germany and is the home for 291,959 people (in 2009, City Population, 2011). The development climate of the city with regards to the potential for shared space areas is quite positive in several ways. There are discussions concerning the environmental friendliness of the city in terms of energy efficiency, energy

Karlsruhe, Steinkreuzstrasse
Received through personal correspondence

saving/management and e-mobility, however there are no concepts ready for implementation in order to improve the city in this way. As such, shared space is seen as a possible opportunity to realize these benefits. In another sense, the current traffic development plan is working with the traffic regulations to deal with issues concerning climate change. In addition to this focus, there also exist two plans in regards to the environment, the first is a clean-air-plan and the second is an action plan regarding noise pollution. Shared space is seen to contribute to these goals by making the streets more attractive for pedestrians and cyclists, which consequently would reduce the car traffic, making the urban transport network more sustainable. In this regard, even the cars that do remain in the city would experience a slower but smoother drive, which can reduce the fuel consumption rates.

1. Steinkreuzstrasse

This location within the city consists mainly of residences, with only one bakery and one restaurant. In this way, the area's main form of transportation is by personal vehicle (90%). This can be quite understandable as the main reason for travel is most likely to another area of the city where the residents would work. Meanwhile, there is only a small amount of foot traffic (5%), which can be seen as the travel to the bakery or the bus stop. In answer to this, the location is described as minimally dangerous, as there are no problems with speeding (speed limit of 30 km/h) or congestion. It is interesting to note that the area is already considered to be halfway between complete segregation and complete integration of traffic modes.

2. Rheinstrasse (between Lameyplatz and Hardtstrasse)

This small street is comprised of mostly residences with only a couple stores and one restaurant. These usage types result in a large level of car usage in the area, as it is located near to a main roadway. With the site being a little more historical than modern, there could be a lot of potential for the use of shared space to increase the attractiveness of the area, encouraging people to spend more time walking through the area. This could change from the current generation of activity as people leave and come back to their homes. The area currently does not have a high rate of traffic flow, nor is it considered to have problems with speeding or congestion.

The city of Karlsruhe recognizes the importance of citizen involvement in the design of public spaces such as these developments, especially as they are so close to peoples' homes. In this way, the different plans and possibilities for the areas, along with their advantages and disadvantages have been discussed with residents. The results have been to modify the plans, and discuss them again. As the areas suggested for shared space development have already begun, these types of discussions have already started to take place. This

Karlsruhe, Rheinstrasse
Received through personal correspondence

has included consultation with the political and administrative committees, as well as conducting public meetings for interested people. The third step in this consultation process has also already been conducted, in which the inhabitants of the two areas were contacted via a letter and were explicitly invited to meetings, which were well attended. This has shown the importance of working with the residents in these locations, and as a result, it is hoped that they will come up with a plan that will incorporate a level of social cohesion through 'taking care of each other.'

Through this development, the main goals of shared space incorporation are intended to improve the attractiveness of these areas, as well as improve the environmental situation with regards to air and noise pollution. As the street is very narrow, there is currently not enough space to allow for the separation of walking, parking and driving lanes. As such, it has been expressed that elderly people will benefit from the introduction of shared space, as the current situation is very limiting. With narrow walkways, elderly people with walking frames have difficulties as they often have to move off and back on again. Without the curbs, they would have much more freedom of movement. This change is also seen to be positive for people in wheel chairs, as they will also no longer be restricted by the curbs, however, other physically challenged people, such as the blind, would be much more limited, as they would no longer be able to rely on the curb as a guide. With regards to the other users of the space, the change is seen to benefit all types of movement.

4.1.9 Luckenwalde

With a population of 20,637 residents (in 2009, City Population, 2011), the small city of Luckenwalde is located near the German capital of Berlin. Currently, the main strategies in the city are based on urban development projects and upgrading the housing conditions. As part of these goals, they are focused on a broad range of measures to achieve a better traffic climate within the city. In this way, they are interested in the claims of shared space in order to help make these improvements. This would include such things as traffic calming, increasing the safety experienced by all road users, an improved level of traffic flow, and reduced traffic flow. One other potential benefit was also mentioned which is not generally associated with shared space, which is the help it could provide in improving the housing quality in the city (possibly through increased attractiveness). With the prospect of these benefits, Luckenwalde has decided to look at the potential development of shared space in two different locations. Although the participation of Luckenwalde in the European initiative was never finalized, they did complete the questionnaire as though they would be participating. These two locations are entirely similar in their descriptions, and as such, they will be described together below.

1. Haag/Käthe-Kollwitz-Strasse and 2.Zinnaer Strasse/ Am Nuthefliess

These locations within the city provide a different opportunity for shared space as the streets are thoroughfares for all directions including traffic flow from downtown, and they are the connecting roads to all the authorities such as the county government, the city administration, the tax offices, the courts, police, and employment services. This means that the areas are busy throughout the day, although still busiest during peak hours. As well, there are several more different uses bordering the area including offices, retail options, restaurants/cafés, and both green and public spaces. This results in a relatively well-balanced traffic mode situation, while the main option in both locations is still by personal vehicle, it is not as high as other areas, and as well, there is quite a high level of pedestrians and cyclists using the area (the given percentages do not add to 100%, and therefore are not presented here). While these areas are not deemed to have any problems with speeding or congestion, they are still determined to be moderately dangerous, with approximately 4 accidents resulting in injury in the past 5 years in the

first location and two accidents in the second. In this regard, the method used to regulate the area currently results in partial integration of the different traffic modes.

The implementation of shared space in these locations is related mostly to the motivation of improved safety on the roads. As it was mentioned above, the locations in this study are deemed to be moderately dangerous. As well, the second most important motivation is related to a concern over the health of the citizens. This is slightly contradictory to one of the previous questions, as it was mentioned that there are no concerns with regards to the health of citizens. In this regard, it is also worthy to note that interest in this project for the sake of social cohesion was ranked last, but when asked if shared space could benefit the level of social cohesion, it was regarded as probable. The response in this manner also gave a very interesting idea that has not been mentioned yet in the sections above; it was determined that shared space could not avoid creating social cohesion if people were involved in the process early on. As such, this is recognized as one very important aspect of the development, as it has been expressed that no public projects should be planned and implemented without citizen participation. This would be ensured through the use of the Internet, official newspapers, flyers, working groups and networks to allow for early involvement of citizens.

The involvement of the various stakeholders is expressed as one very important aspect of shared space development. "The city Luckenwalde Marketing Association must be involved. The association represents retailers and other entrepreneurs in management decisions and planning issues. Members benefit from the shared space project" (Luckenwalde questionnaire). As well, it has been determined that none of the many stakeholders would be hindered by such a development. This can presumably be due to the extensive participation of all stakeholders.

4.2 Comparative Results

Upon seeing the results of each city individually, it is possible to see some of the main motivations for their interests in shared space. As well, some of the specific reasons for these motivations have been addressed and explained. However, it is possible to further the understanding of this subject by looking more in depth and comparing the potential differences and similarities between the different cities and locations. It is also interesting to note some possible trends and relationships within the responses.

A variety of themes were selected for analysis in order to compare the different cities' situations and motivations. Since each city and location is unique, trends would not be expected, however, there were some relationships found. Several different aspects were examined in order to compare the current situations in the cities with their motivations for interest in shared space.

4.2.1 Cities with and without previous shared space experience

One basic comparison can be made between cities that have previous experience with shared space implementation and those that have not. It would be expected that if a city has prior experience with shared space, their descriptions of the locations and their motivations would be closely related and in line with an understanding of how shared space would really help an area. Conversely, although the other cities have heard about the benefits of shared space, they may not know the effects it would have in their context, and therefore may show inconsistencies or knowledge gaps in their responses.

Cities without previous experience with shared space

The hypothesis expressed above was found to have some merit, as there were several inconsistencies in the cities that had not implemented shared space before. Where

shared space is to be a new concept for the city, the responses seem to show that the correspondents are not sure of the direct benefits for the city. To begin with, the city of Espoo provided a few answers suggesting that the city has not had direct experience with shared space yet. The main reason for this perception is that when asked about citizen participation, it was expressed that it was not a key factor in the development process. However in contrast, one of the main motivations for shared space was to create spaces for social interaction. This is a contradiction in itself, but also with the ideas of shared space, as it is meant to be entirely participatory in order that the resulting development is a construction of both planners and users. Another response showed that private vehicle users would be hindered by the use of shared space in these locations, as they would be required to move at slower speeds. As this is still preliminary research, it is not possible to say for sure that they will not be hindered, but it is one of the main goals of shared space that even though driving speeds would be less, time spent travelling would not be longer (Hamilton-Baillie, 2008b). Another interesting point worthy of note is that one of the described locations in this city is lined with stores, but there are no motivations mentioned that relate to the economic benefits that shared space could have.

The city of Donostia-San Sebastian is also new to the concept of shared space, and is limited by this newness in the locations where implementation of the concept could be possible. In this way, the locations that have been chosen to describe and develop shared space, are areas in low density, suburban neighbourhoods. However, the goals and motivations encouraging the city to expand its repertoire of regulation methods are at a larger scale and would seem more focused on the more dense areas. As such, the correspondent has described three locations in which they hope to go through the process of developing the ideas of shared space. Although in the end, these locations may never see the implementation of the concept due to a lack of funds. In this way, there are inconsistencies in the responses, as the main motivations for interest in shared space development are safety, health, attractiveness, and concern for the environment. However, looking closely at the current situations in the locations described, it is apparent that there are no problems with these issues. As such, it seems that the main motivations are a list of what could benefit the city in general, but without practical base for the goals. One of the main citywide strategies is to reduce vehicle use in order to improve the health of the citizens, but in contrast, the given answers with more specific details about the locations mentioned that there is no change expected in the modes of transport that will be used in these areas. In this way, the goals for the use of shared space seem to be general claims with regards to the potentials of shared space rather than having a real basis in the specific location settings.

Although the city of Lisbon has not yet implemented a shared space area, the city is currently developing an area as a starting place for the method. In this way, the responses are generally quite consistent in regards to the goals and the problems that each location is facing. One of the main goals is the improvement of social cohesion, and consistent with this is the recognition of the importance of citizen involvement in the development procedures. Alternatively, the most important use for shared space would be as a legal necessity for the city, as many of the roads are very straight and narrow and other traffic calming methods have not proven effective. As such, this overarching goal may detract from the importance of the other motivations such as social cohesion and health that were also expressed in this analysis. It is also interesting to note, that Lisbon ranked the potential for improved attractiveness of the area as the lowest of all the cities, and is only one of three that did not mention it as one of the top three motivations.

Cities with previous experience with shared space

In contrast, cities that have previous experience with shared space tend to have a firmer basis for their motivations in joining the initiative. Parma has put forward a location that

has already been developed into a 30-km/h zone, and as such, the goals for shared space in the area are shrouded by the goals of the area prior to the 30-zone implementation. The main goals are related to safety and traffic, however, these have already been addressed, and so the next ranked motivations relate to the environment, health, and social mixing. Effectively, these are the top three goals relating to what shared space could do for the area, and they relate closely to the specific concerns in the location. "Through implementation of shared space, we preview and hope that the percentage of walking and bicycle use will increase, and that the use of private vehicles will lower" (Parma follow-up questionnaire). If this implementation shows success as expected, both the environmental and health concerns would be addressed. As well, in regards to social cohesion, it is believed that shared space implementation in this location will definitely help to increase the level of social cohesion and the sense of community.

Karlsruhe also has previous experience with shared space, and this is apparent in the answers that were offered. The main aspects of the shared space concept are embodied in the two main motivations of the city's interest in shared space: improved attractiveness and environmental related improvements. At a broader range, the goals of the city as a whole are to reduce both noise and air pollution, which correlate with the motivation for shared space as it relates to environmental improvements. The combination of these two main reasons for interest in shared space can include the improvement of the pedestrian environment as a way to increase the amount of people walking, and subsequently help to decrease the amount of traffic flowing through the area. As well, Karlsruhe understands the ability of shared space to create an environment where driving will be smoother, which is one of the main benefits of shared space as a concept, and is shown to be well understood by this city.

The city of Graz also provides a cohesive presentation of its motivations for shared space and relation to the possibilities for shared space in achieving these goals. This is mainly shown in the understanding that a high quality urban space will result in a better quality of life for the people living and moving in the area. This is highly relevant to the benefits of shared space especially through the motivations of attractiveness, safety, and social aspects outlined. However, there is one small inconsistency in that the goals within the broader city context are to achieve more sustainable transport, but there is barely any connection made between this goal and the potential of shared space to help achieve it. The three aspects of sustainability can be expressed briefly as sustainability of the environment, the economy, and the social aspect of cities (Jabareen, 2006). However, in relation to the goals for shared space, the city correspondent ranked these goals as eighth, fifth, and third accordingly. Despite these rankings, there are a lot of goals related to improvement of the city as a whole, such as a reduction in the vehicle traffic, and it can be assumed without explicit description, that the interest in shared space development is to be along with these goals.

As the municipality of Opsterland has adopted shared space as part of their current traffic policy due to the amount of positive results they have experienced, it is understandable that their responses would show consistentency. The location that has been described for the implementation of shared space as part of this project has some problems with speeding and the level of traffic related danger, and subsequently, the first motivation is related to safety. As well, the second two motivations relate to attractiveness and social cohesion of the area, which can be seen as achievable through the high levels of citizen participation that will be a part of this implementation. In this regard, there are also no concerns over the state of the environment or of the health conditions of the area. As such, these are not highly ranked motivations: a noticeable consistency.

Exceptions

Of course all the respondents do not fit easily into these categories, and there are some exceptions. For example, the city of Luckenwalde claims to have implemented shared

space previously, however, it is mentioned that one of the main goals of the city is for housing improvements, and that shared space could help to achieve this. While this is not entirely implausible, it is not within the scope of improvements currently seen as directly possible through shared space. As well, the goals for the area are safety, health, and traffic congestion alleviation, of which the second two are explicitly not problems in these locations. The safety goal is founded however, as it is a main goal of the city, and the locations are found to be moderately dangerous.

Conversely, the city of Rauma has never implemented shared space before in their city, but the responses they have given are quite consistent. They have not identified any problems with the safety of users in the area, and have also not included safety concerns as a motivation behind developing shared space (not even in a lower ranking as most other cities did). As well, the only two motivations mentioned, social cohesion and increasing the attractiveness of the area, are consistent with the other responses given in this regard. Social cohesion will be improved through the involvement of the citizens in the development, and the area is a historical centre, which motivates the goal for the progress towards a more attractive area.

4.2.2 Common patterns in cities interested in shared space

The improvements boasted by shared space would attract certain types of cities and locations, as not every location would benefit from this style of deregulation as regulation. In this way, it is helpful to look at the similarities between the described locations in order to determine which types of locations are attracted by the shared space concept. While there are some inconsistencies, especially in the case of Donostia-San Sebastian where the locations are only for testing purposes, there are still some general similarities amongst the cities. In this analysis, the basic study unit will be the seventeen locations rather than the cities they are located in.

Table 1: Similar Conditions among the Locations interested in shared space

Conditions	Number of locations (from a total of 17)
No congestion problems	15
Moderately dangerous or less*	14
Over 50% vehicle use	14
Residences as bordering land use	14
Restaurants or Cafés as bordering land use	13
Traffic flow below 500 vehicles/hour	12
No speeding problems	11
Above a high level of cultural acceptance*	8

* Based on the 5 point scale of none, minimal, moderate, high, and extreme

Overall, fourteen of the seventeen locations were described as being moderately, minimally, or not at all dangerous in terms of traffic. This could be related to the speed limit, as none of the locations had a speed limit above 50 kilometres per hour (a common limit in inner city areas). As well, these locations were generally not described as having problems with congestion or speeding, as only two were concerned with congestion levels, and only five had problems with speeding. In this regard, another important trend is the low levels of traffic flow through the areas. Twelve of the locations had lower than 500 vehicles per hour, and another three still below 1,000 vehicles per hour. As well, the one location that had a rate of above 2,000 vehicles included 37 kilometres worth of roads, suggesting that the flow at a similar sized scale would be low to a certain extent as well. In this regard, fourteen of the locations had vehicle usage rates above 50% as compared to the other traffic modes. Generally though, responses suggested that the expected results of shared space would not decrease this rate, but rather just increase the rates of

pedestrian and cycling traffic. This displays some meaningful ideas in terms of perceptions by the city correspondents, as the goal of shared space would be to improve the pedestrian environment, and the potential subsequent decrease in vehicle use is not part of the goal, but may only be an unseen by-product.

With these high rates of personal vehicle traffic, the different modes of transport seem to be quite separated and the main mode of regulation currently in these locations seems to separate the different modes of transport. None of the locations were described as being more that moderately integrated between different modes. Another area of possible similarities could be the level of general history apparent in each location; however, it was not possible to draw a general conclusion in this regard. Eight of the locations are

Table 2: Summarization of Bordering Land Uses at Each Location

	Location name	Green Space	Public Square	Play ground	Sport field	Offices	Retail	Restaurants /cafes	Residences	Schools	Street side parking	Parking lot	Markets
Austria Graz	Sonnenfelsplatz					█		█					█
Finland Espoo	Siltakatu					█		█					
	Otakaari	█			█	█							
Finland Rauma	Old Fishmarket	█	█			█	█	█			█		
Italy Parma	Zona 30 Lubiana	█		█				█	█				█
Netherlands Opsterland	Friesche Palen Center	█					█	█	█			█	
Portugal Lisbon	Sol ao Rato street							█			█		
	Bacalhoeiros street		█		█		█						
	Caminhos de Ferro street						█						
	Estrada de Benfica						█		█				
Spain Donostia	Ciudad Jardin									█		█	
	Antondegi	█			█								
	Julimasene	█								█			
Germany Karlsruhe	Steinkreuzstrasse							█	█		█		
	Rheinstrasse	█	█			█	█	█					
Germany Luckenwalde	Haag	█							█		█		
	Zinnaer Strasse	█	█			█	█				█		

mixed equally between being historical and modern, six tend towards more historical, and the other three are more modern. This suggests that shared space could be of interest for areas with varying levels of historical influences. One other important thing to note is that all of the cities claimed to have at least moderate levels of cultural acceptance for a new type of regulation method such as shared space. Of these, eight of

the locations (from five of the nine cities) were in places considered to have a high level or complete cultural acceptance.

Shared space, as discussed previously is meant as a way to create a more attractive and cohesive urban environment, in order to encourage the interaction of people. In this way, it is also necessary to note the types of bordering land uses that are common among the different locations. As noted in Table 2 above, there are several different types of bordering land uses by each of the street locations mentioned. The most common of these adjoining uses are residences and restaurants or cafés. There are also a lot of sites that contain retail options and green or public space.

In a more general sense, the larger city context would also have an effect on the atmosphere for possible shared space. The cities in this initiative are each driven by broader goals for the improvement of the city, and some are more related to shared space than others. As details in this regard were provided in the previous section, just the basic goals are expressed here. Two of the cities have a goal of improving the sustainable mobility of the cities, and three more have broader goals of decreasing the environmental impact within the city. In two other cities, the goals are generally to decrease the intensity of traffic within the city. The last two cities then have goals that more directly relate to the physical situation of the city locations. In this way, the first seven cities have broader city goals that would be directly related to and benefitted by the implementation of shared space. As such, the findings of the first development would be very important in terms of the spread of the idea throughout the rest of the city. Also, it seems that having these types of goals would be an important driving force for a cities' interest in shared space.

4.2.3 Comparison of city circumstances

This research has been done using a comparative multi-case-study method as described in the chapter 3, and here in this section different types of groupings are explored to determine possible patterns. In this way, the questioned cities and locations would be grouped by certain characteristics to explore the potential patterns in the responses.

During the analysis in this way, it was found that general statements were difficult to make for the nine cities. For example, one factor that could be predicted as having an effect on the motivations for shared space would be the level of historical presence remaining in the area. This could trigger a desire for improving the attractiveness of an area; however, this analysis proved unsuccessful. Another interesting factor may be whether the interest in shared space varies by city size. This would be helpful for future dissemination of the concept, but was not

Chart 1: Population Density Versus Level of Traffic Related Danger
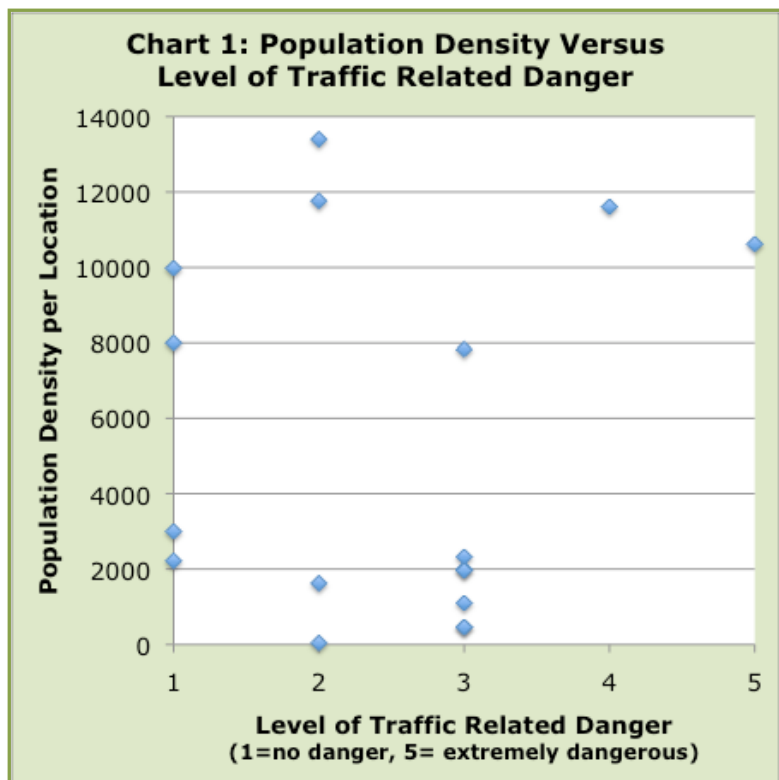
conclusive across the different cities. Information gained in this regard is supported by the specific city profiles rather than general trends.

Population Density

In response to the above addressed problem, it was established that using population density at each of the locations could balance out the problem of using city size as the unit of analysis. Since the circumstances observed in each location may relate more to the population density of the immediate area, rather than just the size of the city, there is a greater possibility for site related trends. The densities of each location were subsequently requested from the city contacts for the most local density possible.

This new data was analyzed, and trends with regards to density were sought. First, it could be assumed that denser areas would have a higher rate of traffic or be more historical, but no trends emerged in this regard. One slight trend was found with regards to increasing density and the level of traffic related danger in a location. This slight trend can be seen in chart 1.

Table 3: Locations Motivations ordered by density

Location	City	Density (people/km^2)	First Ranked Motivation
Rheinstrasse	Karlsruhe	13,400	Attractiveness
Antondegi	Donostia	11,765	Safety
Sol ao Rato street	Lisbon	11,610	Safety
Caminhos de Ferro street	Lisbon	10,620	Safety
Bacal-hoeiros street	Lisbon	9,980	Safety
Julimasene	Donostia	8,000	Safety
Estrada de Benfica	Lisbon	7,830	Safety
Ciudad Jardin	Donostia	3,000	Safety
Old Fishmarket	Rauma	2,857	Social cohesion
Otakaari	Espoo	2,326	Attractiveness
Siltakatu	Espoo	2,220	Attractiveness
Sonnenfelsplatz	Graz	1,992	Attractiveness
Friesche Palen Centre	Opsterland	1,962	Attractiveness
Steinkreuz-strasse	Karlsruhe	1,625	Attractiveness
Zona30 Lubiana	Parma	1,100	Safety
Haag	Luckenwalde	461	Safety
Zinnaer Strasse	Luckenwalde	461	Safety

Looking further into the data also uncovered another intriguing finding. Areas with a higher density tended to have safety ranked higher on the level of importance. In this way, as the density of an area decreases, the cities tend to be freer to use shared space for other reasons, such as improving the attractiveness of the area. There are some exceptions, but this can be seen as a general trend. The locations that follow this trend are in Espoo, Graz, Karlsruhe (Steinkreuzstrasse location), Opsterland, and Rauma were found to have the least dense locations, and were also the cities that chose attractiveness or social cohesion as the first ranked motivation. The exceptions to this trend are the locations in Luckenwalde and Parma, which have low-density locations, but ranked safety as the first motivation. These exceptions are quite logical however, as the two locations mentioned in Luckenwalde are thoroughfares for all directions, and therefore may not be as related to the population

density of the area. Conversely, the location in Parma has already been improved through the use of 30 km/hour zones, and in this way, safety concerns have already been dealt with, allowing the first ranked concern to actually be the environment in terms of the new developments with shared space. As well, the cities with higher density locations, Lisbon, and Donostia, both ranked safety as the highest motivation for their interest in shared space (with the exception of Karlsruhe's Rheinstrasse location, which has a high density but ranked improved attractiveness as the first motivation). (Refer to table 3)

Geographic Location

Another topic to investigate would be the geographical positioning of a city. Such as, do cities in the north have different motivations than cities in the south? This analysis showed interesting results as well, since it was found that moving from the north to the south, cities become less focused on factors such as attractiveness and social cohesion, and increasingly interested in issues of safety (refer to Table 4). This trend can be found in regards to both the first and second motivations for shared space. In the southern cities, safety is the first motivation, and after that is considered, then there is the option to focus on other benefits. Moving north, the city of Graz has mentioned the improvement in attractiveness of the city as the first motivation, however, the second is for improved safety. Further north, the municipality of Opsterland mentions safety concerns as the second motivation, and Espoo has safety as the third, and otherwise the main motivations are for social cohesion and improved attractiveness in the locations. These results could be related to the density of the locations, however, they are not identical, and there may be other reasons for this trend. As such, the implications of these findings will be explored in the discussion below.

Table 4: Top Physical Reasons for Interest in Shared Space (Cities ordered north to south)

	Safety (mixing different modes of transport)	Attractiveness of area (i.e. road regulation signs)	Social Mixing and cohesion of the area	Health of citizens	Traffic situation (congestion or slow commute)	Environmental Situation	Economic situation of or real estate owners	Lack of Green Area or Open Space
Finland Rauma		2	1					
Finland Espoo	3	1	2					
Netherlands Opsterland	2	1	3	4	6	6	5	6
Germany Luckenwalde	1	5	8	2	3	4	7	6
Germany Karlsruhe		1				2		
Austria Graz	2	1	3	4	6	8	5	7
Italy Parma	1	6	5	4	2	3	8	7
Spain Donostia	1	3	6	2	5	4	8	7
Portugal Lisbon	1	7	2	3	4	6	5	8
Average rating	1.6	3.0	3.8	3.2	4.3	4.7	6.3	6.8

Chapter 5: Discussion

5.1 Discuss Findings

Several interesting results have been found within the previous section in regards to the motivations of cities for developing and implementing shared space in specific locations. Several comparisons were also made between the different cities in order to see if there were any similarities or trends among them. Therefore, the goal of this analysis was not to make generalizations about the interested cities, but rather it was to explore some possibilities that may be helpful for future categorizations of new cities.

5.1.1 City Motivations

Each of the cities involved in this study was described according to their current circumstances relating to the reasons for the desire for shared space. In relation to these situations, each city also reported both general and more specific motivations for their involvement in the project. As the format of the questionnaire allowed, each city was able to rank their motivations on a given list of eight different types of concerns. This list was formulated based on literature findings and the expressed expected benefits of shared space. These rankings were helpful in assisting to compare the different cities in a more effective way, however, they were also limiting. It is for this reason that opportunities were given within the questionnaire for more open-ended responses with regards to their motivations. Therefore, it is a conglomeration of these two types of information that is reported in Table 5 below.

The possible reasons for interest in shared space that were listed relate to the literature concerns over the environment, the lack of green or open space, the traffic situation (congestion), the level of traffic related safety, the health of citizens, the attractiveness of an area, the social mixing and cohesion of the area, and the economic situation of store or real estate owners (Hamilton-Baillie, 2008a&b, Shared Space, 2008). The results in this regard showed that the highest ranked reasons for interest in shared space were the benefits it could provide with regards to traffic safety, attractiveness of these locations, and benefits for social cohesion. Several of the other possible reasons for interest were also included in the rankings, however, the interests relating to the benefits for green or open space and for the potential economic benefits were ranked the lowest among all the cities (see Table 4 in the previous section for more detail). These were determined to cover the basic motivations, however there were also openings for other opinions if the list was not exhaustive. This resulted in some direct responses to the question of motivations, as well as some more indirect responses. In this way, some new motivations were also extracted from the indirect responses.

The motivations for the interest in shared space that were given in addition to the pre-given list were sometimes extensions or expansions of the given options, however, there were also some unrelated reasons described. One of these responses came from the city of Lisbon, which actually has the need for shared space in their city, as there is legally not enough room for two lanes of traffic and pedestrian walkways. This would be a new area of interest for the implications of shared space, as it currently has been used for improvement, but not as a legal necessity. This would allow for a new market for the concept, and also the expansion of the knowledge for new types of circumstances. The use of shared space in these circumstances would hopefully allow for the use of the roadway by all types of users, and decrease the limitations currently imposed on pedestrians.

Table 5: Summarization of the Main Motivations for the Interest in Shared Space

	Main Motivations
Lisbon	▪ Legal necessity ▪ Preserve historical street pattern ▪ Improve pedestrian environment ▪ Improve traffic safety ▪ Effective use of (very limited) space ▪ Social cohesion
Rauma	▪ Increase Attractiveness of area ▪ Preserve a historic marketplace ▪ Create a more pedestrian friendly environment ▪ Enhance social cohesion
Graz	▪ Increase Attractiveness of area ▪ Increase safety through mixing different modes of transport ▪ Encourage social mixing and cohesion ▪ Effective use of (very limited) space ▪ Gain knowledge and skills to deal with future situations
Parma	▪ Decrease the amount of personal vehicle use ▪ Increase the amount of cycling and walking ▪ Increase traffic safety ▪ Improve environmental situation (pollution) ▪ Improve health of citizens ▪ Improve social cohesion
Opsterland	▪ Improve the level of traffic safety ▪ Create a more attractive area involving the history of the area ▪ Improve the level of social cohesion ▪ Improve the economic situation of store or real estate owners
Donostia-San Sebastian	▪ Improve the health of the citizens ▪ Reduce pollution levels ▪ Increase safety ▪ Make the area more attractive ▪ Gain knowledge to use shared space ideas in future areas
Espoo	▪ Make the areas of the city more attractive and accessible ▪ Improve the level of social mixing and cohesion ▪ Improve safety ▪ Encourage the increased use of active modes of transport
Karlsruhe	▪ Increase attractiveness in the areas ▪ Improve the environmental aspects of the city ▪ Effective use of (very limited) space ▪ Improve social cohesion
Luckenwalde	▪ Improve safety ▪ Improve the health of citizens ▪ Improve the traffic situation (slow commute) ▪ Improve the housing conditions

Another response to the question of motivations was given with regards to the preservation of history in some areas. This goal was not listed as one of the options in the questionnaire, but it was presented as a main motivation in three separate cities (Lisbon, Rauma, and Opsterland). While this goal can be linked to the option of a concern over attractiveness, it is not directly the same thing. The presence of history in an area can help create a sense of place, and in this way is quite different than the general attractiveness of an area (especially since in the questionnaire, it was noted that road regulation signs were an example for a concern over the attractiveness of an area). This idea can be related to the discussion of Jane Jacobs (1961), where she mentions the necessity of having a mixture of ages present in an area in order to improve its vibrancy.

In this regard, and although it is not a new idea with regards to shared space, it was interesting to see the explicit focus on historical preservation on three accounts without having given the option. As the idea of sharing traffic spaces originates from historical street patterns, it is logical that cities would try to bring back those styles in order to preserve the areas, or bring them back to the way it used to be.

One more interesting motivation surfaced in the instance of the city of Luckenwalde, in which one of the main goals within the city is for housing regeneration. As discussed earlier, this is not within the scope of the improvements provided by shared space, although it is not entirely implausible either. There can be a question as to the effectiveness of shared space in helping to achieve this goal; however, as the correspondent did not respond to the follow-up contact, the question remains unanswered. It can be assumed that the degree of connection between these two ideas is not very high, but rather that the housing improvements are a separate goal, but unrelated goal. However, it can be suggested that shared space would assist with housing regeneration in terms of improved attractiveness and economic setting for the housing market. Although this is not expressed as a main goal, as the respondent ranked these two reasons quite low (fifth and seventh). In response to this finding, the relation between housing regeneration and shared space is inconclusive.

Conversely, of the eight provided possible motivations for shared space, there were a couple that were ranked quite low by all the cities. These include the concerns over a lack of green or open space, and over the economic situation. The motivation relating to space could have received this low ranking due to the possible presumption that shared space may not include green space, or create open space, as it is still being used by traffic. While this opinion does have some merit, it does not reflect the situation with complete accuracy, since shared space does provide the same openness and freedom of movement that can be seen in open spaces. In this regard, open spaces as they are currently understood are more regulated in terms of restricted access (for motor vehicles), whereas shared spaces do not impose that same restriction (Hamilton-Baillie, 2008a). As well, the concern over the economic situation was also generally ranked quite low in the order of importance. This is quite interesting as there can be a direct link made between shared space and the benefits it can provide in terms of the economy. Through the creation of a more attractive urban area, people are encouraged to spend more time and money in the areas, creating a vibrant economy (Spierings, 2006; Greater London Authority, 2010). This link between shared space and an improved economy may be too distant, as it was either missed by some cities (as some did not even include it in the ranking), or not regarded with much importance. This low ranking could be due to a conception of economic benefits being an indirect result of shared space and lacking an immediate connection. Otherwise it is possibly not the driving force behind the interest in developing shared space in an area, but rather an added bonus.

5.1.2 Discussing Comparisons Across the Different Cities

When looking at the different cities' responses, it was possible to determine some similarities and differences that related to their specific expectations and situations. With regards to cities that either did or did not have previous experience with shared space in their city, some trends were found. In general, it was determined that cities without previously implemented shared space tended to be unsure of the direct benefits it could provide. In this way, the answers given were found to have several inconsistencies between desires and actual possibilities. Conversely, cities with previous experience in shared space tended to have more consistent responses. The results found in this regard were not aimed at pointing out flaws in respondents' answers, but rather to point out that a lack of knowledge can produce false assumptions.

In the situations included in this study, the inconsistencies in answers are relatively non-problematic in terms of further development of shared space, especially as these cities are already planning for it's development. However, this could pose a problem for the further spread of the concept to other cities that may be skeptical about the potential of the concept for their context. The effective dissemination of the ideas and outcomes following implementation will be very important to ensure that new cities gain a good understanding of the benefits (and risks) involved with the development of shared space areas in order that they are not hindered by misconceptions about the concept. As each space is developed uniquely for each location (Hamilton-Baillie, 2008a), knowledge sharing will never be able to give a new city a complete picture of how it would work in their particular context. Nevertheless, at least with a broader availability of situations, the false impressions could be limited. In this way, the misconceptions mentioned above are effective in showing that there is a knowledge gap with regards to shared space, and that the sharing of knowledge between cities is central to the spread of the concept.

Another aspect that showed results was the common patterns found among several of the locations. Generally it seems that there are some coinciding situations and circumstances that motivate a desire in shared space. These can be described as locations that are not considered very dangerous, and do not have problems with speeding or congestion. As well, they are generally located in areas where the bordering land uses include residential units and restaurants. The appearance of these common characteristics suggests that they are the reasons for the interest in shared space. There are several other types of circumstances possible in different urban areas, however these chosen locations were found to have similarities in this regard, suggesting they could be characteristics of urban spaces where shared space could be effective. In these locations, there generally tends to be high percentages of personal vehicle traffic, but at slow enough flows to make it adaptable to the implementation of a big change like shared space: a change that could be made through a combination of traffic diversion tactics and design tactics to slow the current traffic flow.

Along these same lines, these locations do not generally have problems with speeding or congestion. It would make sense from a design perspective that largely congested areas would not make good locations for shared space, since from the frame of reference of the current traffic regulation styles, deregulation would result in chaos. In this way, although shared space claims to be a solution to speeding and congestion problems (Shared Space, 2008), it might seem too far fetched to solve these bigger problems. As such, since the concept is rather new for most of these cities, it would be better to test it in a less prominent location prior to implementation at higher profile intersections. On the other hand, there are a couple locations that do suffer from speeding and congestion problems, and these could provide the test run for knowledge gain in these types of locations as well.

In accordance with these types of low profile locations presented, it was also found that the most common bordering land uses are residential and restaurants or cafés. This could suggest that the interest in shared space is more for residential areas, possibly with some little shops or restaurants, and maybe some office spaces. This would potentially be the reason that social cohesion may be a feasible goal in some locations more than others, if the people who are using the space actually live in the vicinity and in this way could potentially build up the social cohesion of the area, as described by Jane Jacobs (1961). Thus, the expansion and development of the concept of shared space could gain a foothold in these cities through the origin in these unobtrusive situations.

One further comparison was made between the cities with regards to the specific locations that were described. An interesting finding in this analysis was that as a location's population density increased, the city was more likely to choose safety as the first concern. However, as the population density decreased, the motivations for the locations tended to be more focused on aesthetic issues. This is a very intriguing finding,

and could be a useful detail for future work with shared space. While the results are limited to this study, the idea may extend further as well. In this way, the idea can be rationalized by seeing the higher population density as more of a traffic problem. With larger amounts of people, there is a greater chance for traffic problems to occur, and also less physical space in which the traffic can move. As such, the first goal of the planners in these areas would be to improve the safety of the area. It would be after this that there would be room for improving the other aspects; however, with shared space, the other benefits would hopefully be achieved at the same time. Conversely, this new idea also shows that cities with less dense locations have the liberty to address other issues relating to the improvement of cities as their first goal. While the general idea of shared space is to create benefits for the city in a variety of ways, there is merit to understanding the reasons behind each different city's interest.

Another related trend was found through the analysis on the geographical location of the cities. It was found that generally, cities that were further south tended more to focus on the benefits of shared space as they related to safety, and further north, cities tended to focus on attractiveness. This could be related to the trend on density, as the findings there were quite similar, with the one exception of the city of Parma, which is located in the south, but is not as dense. When looking at the cities more specifically, Lisbon is interested in shared space for its safety benefits because of its narrow streets. In this way, there are no other solutions available to improve the situation, and they have therefore turned to using shared space as a potential solution. This could provide reasons then for other cities with similar size problems, cities that tend to be located in Southern Europe. Donostia-San Sebastian, although having described less inner city areas, the motivation for safety relates more to the broader results that could be achieved through shared space in other areas of the city. In this way, the basis for placing safety first could relate to similar situations as Lisbon. Conversely, the cities located further north have indicated a motivation for shared space more in relation the increased attractiveness of locations. This could be due to the prior implementation of shared space being more in the Northern European countries, where the emphasis has been, along with others, on creating more attractive urban areas (Arnold Bosma, personal communication).

5.1.3 Effects of shared space on people with physical challenges

One of the main criticisms of shared space relates to the problems it can possibly cause for elderly people and people with physical disabilities, especially blind people. This topic was discussed in chapter 2 and furthermore was discussed in the city profiles. Each city was questioned with regards to their perception of the reactions from these people. There was a wide range of responses, both for the positive effects of shared space on these people, and for the negative effects imposed on them through this development. It was surprising to find that the responses were generally much more positive towards the effect of shared space than was originally expected (as it is one of the main critiques). In the first questionnaire, respondents were simply asked whether elderly and subsequently physically challenged people would benefit or be hindered by shared space development. This did not provide the reasons for their choices, so the idea was again addressed in the follow-up questions. This provided a much clearer picture of how these people were expected to benefit from shared space. A common theme in the responses was that elderly people may be scared by the idea of a new type of regulation, but upon working with them, it will become clear to them that the areas will become safer. Despite this, there are still some concerns for the elderly people as they may have difficulty understanding the new system. However, it was mentioned that as vehicle speeds decrease, these more vulnerable road users would actually be safer, which would encourage them to use the space with confidence.

In terms of physical limitations of people, there are mixed responses. For people with limitations regarding movement, such as wheel chairs or walkers, shared space may be

beneficial for them by removing the physical barriers that currently limit them (such as kerbs). As well, the slower vehicle speeds would allow these people more freedom of movement. However, there were only two instances where blind and partially sighted people were mentioned in this regard, with two opposing opinions. In one case, the removal of all indicators was seen as a big detriment to these peoples' manoeuvrability, and parked cars would cause problems. However, in the city of Graz, where the plan is nearing completion, the surface of the area is supplied with tactile lines and cross marks designed to allow the area to benefit these people as well. This is an encouraging aspect, and will hopefully be successful in this location, allowing for future locations to benefit as well by sharing the knowledge gain.

5.2 Critical Evaluation

As with any research, there are aspects of this study that may have resulted in potential shortcomings. This is possible since it was done using qualitative methods, which can be criticised in terms of its scientific credibility and transferability. As there were a lot of open-ended responses, there was space for interpretation of the responses by the researcher. This could be the case in regards to some of the motivations for an interest in shared space that were given in indirect ways through some of the responses. As well, some city correspondents could interpret the questions in different ways, resulting in differing responses when the same idea is meant. For example, one of the questions asked the respondent to rate how dangerous an area was on a five-point scale. Such a question, although measurable in various ways, may be prone to different interpretations as there is not a general standard five-point scale in this regard. However, these types of interpretation problems were limited through the use of different types of questions, such as scales, rankings, and open-ended questions. In essence, while there may have been some inconsistencies across the different respondents, the data collected was of a nature to develop a case study of each city, and not to perform statistical analysis on the responses.

A similar challenge in regards to the data collection could relate to the answers given by respondents. Answers may have been given based on the perceived desired answers rather than a real portrayal of the situation. These may have been influenced by what respondents think would be the correct answer or by what they perceive the researcher to be looking for. In another way, the responses could also be influenced by the political situation of the city and the influence of having required responses. However, as suggested, the outcomes of the study were city and location profiles along with some general comparisons, aspects that would not be exceptionally affected by biased responses.

One other critique could be related to the influence of the needs and desires of the internship on the research direction. The data collection was necessary at an earlier stage in the process, rather than following the completion of the literature review. In this way, it could be possible that the questions could have been better informed. As well, some of the questions addressed to the respondents were only interesting as they related to the European initiative. However, the influence of this was very minor, as it was determined that enough information was gathered prior to sending out the questionnaires. Additionally, a benefit of having the study done as part of this larger initiative, it ensured responses from the city participants.

Chapter 6: Conclusion

This research started with developing an understanding of shared space, and how it can affect a city. The claims of this concept are wide-ranging and were explored as they relate to the current literature on the topic. Certain knowledge gaps were exposed, and the various benefits of shared space were described and investigated. Since this is a relatively new concept, further research and investigation is necessary to look at the possibility for the use of shared space in new cities. In this way, nine European cities have shown interest in exploring the possibility of developing and implementing shared space areas into their contexts. As such, the goal of this study was to determine why these cities have shown interest in shared space. This was done by determining their motivations as they related to physical circumstances in the city, and broader goals for city improvement. The research was conducted through a qualitative comparative multiple case study analysis to develop an in depth understanding of the reasons for each city's interest in the shared space concept.

Shared space is a design method that is based on returning the responsibility of safe travel to the user, rather than just being the responsibility of traffic regulators (Hamilton-Baillie, 2008a). As well, the goal is to create a space within the city that is no longer dominated by cars, which tends to be the current trend in modern developed cities. Through the tactics of removing all traffic regulations in an area, the user is faced with uncertainty and increased risk to pass through the space. In response, people tend to move slower and are more aware of their surroundings. The result is that the space becomes safer for all types of users, including pedestrians and cyclists, and also provides other benefits for the city. These other benefits relate to the improved attractiveness of the area, the environment, the economy, and the health of citizens, as well as improved social cohesion among the people using the area. These effects were explored in more detail in the second chapter, but one general reason for these gains is that people are encouraged to be active in these locations due to the improved design and safety.

While there are a lot of benefits boasted by the shared space concept, they may not all impact the decision for development in a specific city. In this way, the guiding question for this research was '*which types of urban circumstances motivate an interest and desire for the development of the shared space concept in cities of several different European contexts?*' Each city is unique, and offered different reasons for their interest. In several cases these motivators related to the environment, health, economy, safety, and social cohesion, the range of benefits that can be expected through shared space (Hamilton-Baillie, 2008a, Shared Space, 2008). However, there were also some new ideas raised as well. This is especially in the case of Lisbon, as shared space is seen as a legal necessity for the city as there is limited space and other regulation methods have not shown success. Another new finding was related to the preservation of the historical presence in some of the locations. The shared space concept focuses on using the uniqueness of each setting in its development, but in these instances, it would also seek to return an area to the way it was historically.

As a result of this research, several findings were expected, but there were also some unexpected outcomes as well. These can relate to the second research question of '*what is the role of the current local situation for these motivations?*' Prior to obtaining the results, it was expected that since shared space is beneficial for sites with speeding and congestion problems (Shared Space, 2008), it would be one of the main concerns expressed in these locations. However, there were very few sites that were shown to have problems with speeding and congestion. In response to this finding, it can be understood in terms of the experimental quality of many of the sites in cities, as they did not want to use prominent areas for pilot locations. In this way, some new ideas were uncovered with regards to the motivations for shared space in these cities with regards to the physical setting of many of the locations. These can be seen with regards to the

current physical circumstances as in most locations they did not seem to suggest a need for improvements of safety and attractiveness directly (the most common motivators among the interviewed cities); however, most situations showed a concern over the large role that the automobile has in the areas. With major design changes in these locations, improved safety and attractiveness could be achieved via shared space. Through this, it is possible to see the portrayed image that shared space has achieved through the previous spread of knowledge. With these goals as the most common, the results of this research can express that shared space is perceived to be first and foremost a solution for cities with regards to safety and attractiveness.

Another important aspect that was part of the findings was that many responses demonstrated the need for using public participation in the whole process of development of a shared space. This is named as one of the most important aspects of shared space development (Hamilton-Baillie, 2008a), and was encouraging to see that most of the interested cities recognised that aspect. Although this does not directly relate to the motivations for shared space implementation, it is an important aspect that needs to be addressed when considering the development. This aspect was also important in the acknowledgment of knowledge gaps among the cities. It was quite apparent that some cities did not have much experience with shared space as they did not express the importance of public participation in the process of development. In this way, the findings in this regard relates closely to the literature on social cohesion and the production of space. Lefebvre's trialectics of space (Leary, 2009) are expressed in the practical sense, as the production of the shared spaces relies on the cooperation of users and planners to develop a space that will allow for the definition of an area and give it a sense of place. This is a key factor in the development of shared space, and in some cases was even mentioned as a motivating reason. There could be increased social cohesion in an area as a result of cooperative working on a shared space development, or through a more attractive site for pedestrians to walk and meet strangers in an informal way.

The main motivations that were expressed by each city form a basic background for their initial interest in shared space, and when looking into the expected results of implementation, there are similar trends. In this way, the third research question is addressed, '*What are the desired effects within a city's structure and community that are expected to result from the implementation of shared space?*' Logically, the changes that are expected as an outcome of the development of shared space are related to the initial motivations. These areas are expected to have improved safety ratings and become more attractive to pedestrians, and subsequently, can be seen to have a positive impact on the levels of social cohesion felt in the areas. However, cities generally do not think that development of shared space areas would have a large enough effect (especially in these small pilot locations) to make a difference in modal choice (i.e. no reduction in number of automobiles on the road). This would suggest that the shared spaces are seen to have small-scale effects on cities and only provide benefits for the direct location in which it is implemented. While this is a common perception, not all cities see the outcomes in such a limited sense. In this way, some cities see a much larger effect of implementing shared space in their cities. Such effects could be the ability of shared space to define an area or upgrade the city. While this could relate to the size of a city and the prominence of the chosen locations, the reasons for the different levels are unknown. Generally, cities indicated that shared space could provide benefits for the health of citizens and the environment, but these were not seen to be very prominent effects. The respondents were more enthusiastic about what shared space could do for their cities in the more immediate sense with regards to safety and traffic calming measures. Along with these findings, it is very important to note that although there are some slight trends that have been found throughout the analysis, there is definitely a focus saying that each location is unique and it is not possible to generalize which locations will benefit from shared space.

Throughout the process of this research, it was shown that the concept of shared space is understood to have a lot of benefits for European cities. As well, the findings have shown the importance of accurate information sharing between the different cities. There were several inconsistencies found within the responses from cities that have not implemented shared space before, suggesting that there is not yet enough information circulating about the concept. These small inconsistencies do not express a problem with regards to these specific cities, as they are already interested in the concept. However, these small misconceptions about the possibilities for shared space can cause detriments for its dissemination to future cities. Without a proper understanding, the concept may not surface as a potential solution in future locations, especially as the idea requires a mentality shift in regards to design and planning. As well, it also becomes necessary to provide feedback about situations where shared space was especially effective, and where it did not produce the desired results. In this way, it is important to ensure that effective knowledge sharing occurs following the development of this concept in these cities.

The concept of shared space is a relatively new method of traffic deregulation as regulation and while there has been a lot of work done with it, it is generally still exploratory (Hamilton-Baillie, 2008a). This research is part of that exploration, as it looks at the possibility for further dissemination to new cities and countries. Therefore, the results found within this study form a basis for future knowledge gain on the subject. As each of the involved cities presented unique situations that could benefit from shared space, there is a lot of knowledge to be gained in this regard. Additionally, through some level of categorization, it is possible for future cities to identify more closely to certain locations that were described and studied in this research. This would allow for a clearer understanding of the potential benefits for shared space in their locations as well. In this way, city officials would be able to look into these city profiles and develop an understanding for how shared space may work in their context.

The conclusions drawn out of this research could also be very informative for consultancy companies that are interested in shared space for new locations. As the concept of shared space continues to develop, more options will have been explored. Since each new location is unique in its setting, the first cities are the most difficult to categorize, but with these profiles available, future work in this regard is easier. In this way, it is possible for consultants to develop location profiles for when shared space could be a potential and useful option.

These findings open up new possibilities for further research with regards to shared space. As it was mentioned, there are definite gaps in the knowledge especially as each location is unique in its setting. In this way, more cities could be added to the repertoire as a basis for identifying key motivations. Nevertheless, the knowledge base would be most likely be increased the most following the development (but not necessarily the implementation) of shared space in these areas. By having the key problems and motivations outlined per location, it would help to evaluate the outcomes. As each city currently has specific motivations for their interest in shared space, it would be very interesting to see if these relate to the outcomes. Similarly, it would be very helpful to see if shared space was able to work in these situations and provide favourable outcomes. This in turn would be able to inform future interested parties about which types of situations would be helped by shared space. It is entirely possible that this is not an effective solution in every location, and this is essentially how the most information will be gained. By having both positive and negative results in the development, more knowledge will be gained for where it will be an effective solution.

In conclusion, the concept of shared space is a relatively new method for improving cities, and there are a lot of gaps in the knowledge regarding it. This research has been part of filling these gaps by informing and understanding the reasons for different cities' interest in the concept. Generally, every location studied was unique in its requirements

and goals for improvement, but some trends and similarities were found. As such, these results form a preliminary understanding of how shared space could have an effect in these locations, but also how it might work in the larger city context, and possibly even throughout other cities within the same country. Since some of the countries have never implemented shared space before, these would be the initial sites for testing with regards to the cultural context. This opens the field to further research as this study forms the preliminary understanding of the place that shared space has in these cities. In the end, there is room for study following further development and possible implementation of shared space in these locations using this information as a knowledge base for evaluation and categorization. Perhaps this is the beginning of a large spread of the ideas and benefits of shared space to new locations throughout Europe, and possibly even further.

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APPENDIX I: Summarization of Findings

Summarization of Location Specific Findings

	Sol ao Rato street	Bacalhoeiros street	Caminhos de Ferro street	Estrada de Benfica	Ciudad Jardin	Antondegi	Julimasene	Zona30 Lubiana	Sonnenfelsplatz	Friesche Palen Centre	Old Fish-market	Silta katu	Otakaari	Steinkreuz-strasse	Rhein-strasse	Haag	Zinnaer Strasse
City	Lisboa				Donostia			Parma	Graz	Opsterland	Rauma	Espoo		Karlsruhe		Luckenwalde	
Population size[1]	489.562 (2009)				185,506 (2010)			186,690 (2011)	257,328 (2010)	29,991 (2011)	39,715 (2010)	247,970 (2010)		291,959 (2009)		20,637 (2009)	
Knowledge level[2]	3				2			3	5	5	3	4		4		4	
Freight %		10			5	10	0	0	0	5	0	1	1	1	0	13	13
Personal Vehicle %	90	10	70		50	60	85	76	29	74	15	73	70	90	90	60	60
Bicycle %					5	3	2	6	30	10	30	7	10	5	5	20	15
Walking %	10	80	10	30	20	15	8	5	40	10	50	13	18	5	5	35	30
Bus/tram%			20	70	20	10	5	13	1	1	5	6	1	1	0	5	5
# bus routes	0	0	3-4	>5	1-2	1-2	1-2	1-2	3-4	1-2	1-2	3-4	0	1-2	0	>5	>5
# tram routes	0	0	0	0	1-2	1-2	0	0	0	0	0	0	0	0	0	0	0
Integration level[3]	2	3	2	3	1	1	1	3	2	1	2	1	1	3	3	3	3
Historical level[4]	3	1	1	1	3	5	3	4	2	1	3	5	3	3	2	3	3
Traffic flow[5]	1	1	1	1	1	2	1	5	3	1	1	2	1	2	1	1	1
Dangerous level[6]	4	1	5	3	1	2	1	3	3	3	2	1	3	2	2	3	3
Accidents	N/A*	N/A*	N/A*	N/A*	0	0	0	50	60	11	0	N/A	N/A	3+	3+lots	71	20+~5
Speeding problem	Y	Y	Y	Y	N	N	N	N	N	Y	N	N	Y	N	N	N	N
Speed limit (km/h)	50	50	50	50	50	50	50	30	30	30	20	40	40	30	30	50	30-50
Congestion	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Politically Related[7]	3				5			5	5	5	4	3		4		4	
Cultural acceptance[8]	3				3			5	3	5	3	4		4		4	
Density-ppl/km[2]	11,610	9,980	10,620	7,830	3,000	11,765	8,000	1,111	1,992	1,962	2,852	2,220	2,326	1.625	13,400	461	461

Legend for Summarization Table
[1] according to http://www.citypopulation.de/index.html
[2] Current knowledge of Shared Space: 1=None, 2=Minimal, 3=Moderate, 4=High, 5=Expert
[3] Level of integration of different modes of different traffic: 1=No integration (complete separation of modes), 5= Complete Integration (no separation)
[4] Historical level of area: 1=historical, 3=mixed, 5=modern
[5] Traffic flow (vehicles/hour): 1=0-500, 2=501-1000, 3=1001-1500, 4=1501-2000, 5=>2000
[6] Dangerous area in terms of traffic: 1=not at all dangerous, 5=extremely dangerous
[7] To what degree is shared space politically related: 1=unrelated, 5=completely related
[8] How accepting is the culture for this type of traffic regulation change: 1=intolerant, 5=accepting
*N/A = Not available, Y=yes, N=no

Response to Social Cohesion Question: Would the level of social cohesion or sense of community be affected by introducing shared space?

Austria Graz	yes
Finland Espoo	Increasing the possibility of contacts between people will hopefully improve the sense of community as well.
Finland Rauma	Shared space would affect by making this area more walking and unflappable.
Italy Parma	The level of social cohesion and the sense of community will surely be increased by the introduction of share spaced areas (or the improvement and perfecting of established shared space areas)
Netherlands Opsterland	Yes.
Portugal Lisbon	Introducing shared space will positively affect the level of social cohesion in all areas
Spain Donostia	It would make the area more friendly what would increase the level of social cohesion or sense of community.
Germany Karlsruhe	I do hope very much that the level of "taking care of each other" will be affected sufficiently. (Brief definition on question mark doesn't work)
Germany Luckenwalde	Yes, if citizen participation takes place really early. It may not be an excuse.

APPENDIX II: Copy of Questionnaire

SPASS Project City Questionnaire

Dear city partners of the SPASS consortium,

Please respond to the following questionnaire as completely as possible. If you have difficulties or we require a more detailed answer, we will address these questions in follow up interviews at a mutually agreeable time. Please complete the questionnaire before Thursday 31 March.

For more immediate problems, please contact Heather van der Hoek at hvdhoek@goudappel.nl, however, I will be out of the office from 21 March until 29 March, so please contact the intermediary partner with whom you have been in contact (see the email for who that is)

Using the answers, we will develop a profile of your city and submit it with the SPASS proposal. As well, this questionnaire will be used as the research basis for my Master's Thesis which is to answer the question, "What contexts, situations and problems warrant an interest in, and desire for development of shared space concepts in cities in several different European contexts?"

If you wish to fill in a portion of the survey and save it to complete later, please note that cookies will need to be enabled, and you will need to complete the questions on the **same computer on which you started.**

Thank you for your help!

If you have a limited knowledge of the shared space concept, it might be helpful to take a moment to read this publication from the Shared Space Institute.
http://shared-space.org/files/11276/18nov.LowRes_SpatialQaulity.pdf

SPASS Project City Questionnaire

City represented

Name of interviewee

Position and main background field of interviewee

How would you rank your current knowledge of shared space?

○ *None*   ○ *Minimal*   ○ *Moderate*   ○ *High*   ○ *Expert*

Have you ever developed a shared space project?

○ *Yes*   ○ *No*

Chapter 1: Current Situation

1.1. **How many specific location(s) do you have that are of interest for the development of shared space?**

○ *1*
○ *2*
○ *3*
○ *4*

What is the current situation in the first location? (Questions will be repeated for further locations if applicable)

1.2. **What is the name of the location? (road names or area name)**

1.3. **What are the main transport options in the location? Give a percentage of usage type**

Freight	
Personal vehicle (including road motor bikes)	
Bicycle (including mopeds)	
Walking	
Bus and/or tram	
Other (please specify)	

1.4. **How many bus routes run through the location?**

○ *None*
○ *1-2*
○ *3-4*
○ *more than 5*

1.5. **How many tram routes run through the location?**

○ *None*
○ *1-2*
○ *3-4*
○ *more than 5*

1.6. **To what extent are the different modes of traffic integrated or separated? (i.e. Separate bike lanes, separate pedestrian walkways, etc)**

○ *1 - No integration (complete separation of modes)*
○ *2*
○ *3*
○ *4*
○ *5 - Complete integration (no separation - shared space)*

1.7. **What types of land uses are bordering this location?**

☐ *Green space*
☐ *Public square*
☐ *Playground*
☐ *Sportfield*
☐ *Offices*
☐ *Retail*
☐ *Restaurants / cafés*
☐ *Residences*
☐ *Schools*
☐ *Street side parking*
☐ *Parking lot*
☐ *Markets*

1.8.   **Is the location inside or outside the city limits (built up area)?**

- ○ *Inside*
- ○ *Outside*

1.9.   **Is the location in a historical or a more modern area?**

- ○ *1- Historical*
- ○ *2*
- ○ *3 - Equally mixed*
- ○ *4*
- ○ *5 - Modern*

1.10.   **If known, what are the current levels of traffic flow? (Number of vehicles/hour)**

- ○ *0-500*
- ○ *501-1000*
- ○ *1001-1500*
- ○ *1501-2000*
- ○ *more than 2000*

1.11.   **Is this location considered to be a dangerous area in terms of traffic?**

- ○ *1 - Not at all dangerous*
- ○ *2*
- ○ *3*
- ○ *4*
- ○ *5 - Extremely dangerous*

1.12.   **How many known accidents occurred in this location in the last five years which resulted in injury/death?**

1.12.1   **How many non-registered accidents do you estimate occurred in the last five years in this location?**

1.13.   **Is there a problem with motor vehicle speeding in this area?**

- ○ *Yes*
- ○ *No*

1.14.   **What is the speed limit in the location (km/h)?**

1.15.   **Is there a problem with congestion in this location?**

- ○ *Yes*
- ○ *No*

1.15.1   **What describes the traffic flow in this location better?**

- ○ *Peaked (rush hour)*
- ○ *Spread out (shopping traffic)*

1.16.   **At what time of day is this location most active for uses other than through traffic?**

- ☐ *Early Morning (8:00 - 10:00)*
- ☐ *Mid-morning (10:00 - 12:00)*
- ☐ *Early afternoon (12:00 - 15:00)*
- ☐ *Late afternoon (15:00 - 18:00)*
- ☐ *Evening (18:00 - 00:00)*

1.16.1   **What is generating this activity?**

1.17.   **Does the volume of non through traffic increase at certain times of the year?**

- ☐ *Spring*
- ☐ *Summer*
- ☐ *Fall*
- ☐ *Winter*
- ☐ *No significant changes seasonally*

1.72.   **Are there concerns over the current environmental state (air and noise pollution) in the city?**

1.73.   **Is there a concern over the general health of residents in these locations and/or city and is it related to this project? Please explain.**

Policy and Solutions

1.74.   **Could you provide an overview of the main strategies currently implemented in your city to achieve greater sustainabilty?**

1.74.1 **Could the shared space concept be helpful in achieving the goals of these strategies, and if so what would be the main expected contribution?**

1.74.2 **Have other types of solutions been explored to achieve these goals in the broader city context, or this specific area? What are they and have they been implemented and shown success?**

1.75.   **To what degree do you think shared space is a politically related topic?**

   ○ *1- unrelated*
   ○ *2*
   ○ *3*
   ○ *4*
   ○ *5- completely related*

1.76.   **Are there any other special physical circumstances that relate to your city and implementation of traffic regulations that have not yet been mentioned? Please explain.**

Chapter 2: Desired benefits of Shared Space and participation in SPASS

What are the main reasons for your interest in shared space? Is it due to a desire for change that rises out of previously mentioned problems, or for general betterment of the area?

2.1. **Please rank the following in the order of importance to your interest in shared space (1 being most important). Include only those applicable. (Interest may result from a concern over the current condition, and/or a desire to improve the situation)**

Concerned With:

Environmental situation (air and noise pollution) ☐
Lack of green area or open space ☐
Traffic situation (congestion or slow commute) ☐
Safety (mixing different modes of transport) ☐
Health of citizens ☐
Attractiveness of area (i.e. road regulation signs) ☐
Social mixing and cohesion of the area ☐
Economic situation of store or real estate owners ☐

Seeking Improvement:

Environmental situation (air and noise pollution) ☐
Lack of green area or open space ☐
Traffic situation (congestion or slow commute) ☐
Safety (mixing different modes of transport) ☐
Health of citizens ☐
Attractiveness of area (i.e. road regulation signs) ☐
Social mixing and cohesion of the area ☐
Economic situation of store or real estate owners ☐

Other (please specify) [ ]

2.2. **What are the expectations as a result of participation in this project? Please rank relevant expectations according to importance, 1 being most important**

Gain knowledge and increase skill levels to deal with certain types of problem areas in the city ☐
Have shared space implemented in the specified area ☐
Be part of a project at the European level rather than hiring private consultants for this specific problem area ☐
Benefits received through exposure for the city ☐
Receiving extra funds for the design and implementation ☐
Other Expectations (Please Specify) ☐

2.3. **Why did you chose to look at shared space for this area instead of other possibilities? Or is it currently one of the options for development?**

[ ]

2.4. **In general, what is your estimate for how accepting the culture of the location to this type of traffic regulation change? (1 being very intolerant to change, and 5 being very accepting of change)**

○ 1
(intolerant)   ○ 2   ○ 3   ○ 4   ○ 5
(accepting)

Chapter 3: Stakeholders

3.1. **Which if the following stakeholders do you expect to be involved in shared space development and implementation in your city, and specifically this area? Please also indicate which stakeholders would be benefitted or hindered by shared space.**

Citizens
Various Age Groups and working groups

	Involved	*Benefitted*	*Hindered*
Elderly	○	○	○
Working Adults	○	○	○
Parents	○	○	○
Post-secondary Students	○	○	○
Children	○	○	○
Physically Challenged	○	○	○

Different types of traffic participants

	Involved	*Benefitted*	*Hindered*
Private automobile drivers	○	○	○
Cyclists	○	○	○
Walkers	○	○	○
Buses	○	○	○
Trams	○	○	○
Emergency Services	○	○	○

Activist groups

List and give a brief description of how local activist groups would be involved or affected, and whether they would be benefitted or hindered. (i.e. environmental groups, social activist groups, transport groups, monument organizations, disabled people associations, etc)

Shopkeepers

	Involved	*Benefitted*	*Hindered*
Retail	○	○	○
Restaurants and Cafés	○	○	○
Night Attractions (pubs, clubs, etc)	○	○	○
Ambulatory trade (weekly markets)	○	○	○

Others

	Involved	*Benefitted*	*Hindered*
Real Estate Owners	○	○	○
Tenants	○	○	○
Developers	○	○	○
Police and law enforcers	○	○	○
Political actors	○	○	○

Others?

3.1.1 **How will these groups be consulted or included in the information sharing to ensure the development of a system that will benefit and gain acceptance from most or all stakeholders?**

3.1.2 **Are there currently ways available to aid in this consultation process? (such as organized groups of local residents)**

3.2. **Is citizen involvement in the design of the public space seen as a priority for development?**

3.3. **Is shared space seen as a way to:**

☐ *encourage people to take more active modes of transportation (walking, cycling)?*
☐ *enhance the daily travel experience of citizens?*
☐ *make a landmark?*
☐ *define an area?*
☐ *upgrade the city?*
☐ *create a place for social interaction?*
☐ *move to a more people oriented society?*
Other?

3.4. **Would the level of social cohesion or sense of community be affected by introducing shared space? (hold your mouse over the question mark for a brief definition)** ?

3.5. **Which disciplines within the city administration would be either directly or indirectly involved in the shared space initiative?**

☐ *Traffic*
☐ *Environment*
☐ *Health*
☐ *Economic Development*
☐ *Safety*
☐ *Public Works*
☐ *Education*
☐ *Monuments*
☐ *Communications*
Others

3.5.1 **Do these disciplines within the city infrastructure currently work together on other similar initiatives?**

3.5.2 **Can shared space initiatives be seen as a way to aid and possibly encourage cross discipline cooperation?**

Chapter 4: Cost

4.1. **How many hours will be allocated to this project over the 3 year duration?**

- ○ *450 hours (low participation in training and workshops and 1 or 2 pilots)*
- ○ *750 hours (low participation and 3 or 4 pilots)*
- ○ *900 hours (high participation and 1 or 2 pilots)*
- ○ *1200 hours (high participation and 3 or 4 pilots)*

4.2. **What are your motivations for cofinancing the project? (60% of your budget will be covered by EU funding, the remaining is to be co-funded by the cities themselves)**
Please provide a short 2 sentence answer.

Example follow-up questionnaire

Sent to the city of Graz

1. Could you please send an illustration, map or photo of the location of interest; it would be a great asset for the proposal.
2. Do you anticipate any specific barriers to the implementation of shared space in this area?
3. In regards to question 3.1, you mentioned that elderly and physically challenged people would benefit from shared space, could you explain your choice?
4. With regards to question 2.1 in the questionnaire, are you more concerned over current problems, or rather seeking to improve the area (is the ranking of the first half more important than the second)?
5. You mentioned the current percentages of the main transport modes in this location. Through implementation of shared space, what percentage of transport modes do you hope to achieve with shared space? personal vehicle- _ , bicycle- _ , walking-_ , bus - _
6. In question 3.1.1, you mention that you worked with citizens in the reconstruction of Sonnenfelsplatz, has this already occurred? (Is the area already in process towards shared space?)