

Shared Space: An Interactive Experience

Introduction

As a society, we have seen the quality of our public spaces declining for the past century. Urban areas have become more focused on the transportation of vehicles through the public space, as use of cars has increased, than on the ability of people to enjoy the space. This has led to city streets that function poorly in their ability to move traffic and act as a social center for the area. A new idea has been developed to combat this social disorder: Shared Space. Shared Space is an approach to public space design that incorporates non-conventional methods of traffic management in order to improve the quality of life in urban areas. Included in this report is an explanation of what problems shared space solves and why it works. Also, studies of shared space environments in Europe will be used to demonstrate the effectiveness of this design on traffic management and safety.

The Problem

Since the founding of America, the main roads that ran through towns were recognized as the focus of the entire area. People often lived along these roads and used the road space for many things. Market places where people sold everything from fresh produce to hand-made clothes were set up on the road. Cars were not around, and the only vehicles on the roads were the occasional horse-drawn carriage. Urban roads were a place for social interaction and functioned as the economic heart of a city. When the automobile was initially introduced in America, not much about these main city roads changed. The automobiles would drive on the street, but had many people, small markets and animals to deal with. The social function of the road was far more important than letting an automobile through quickly.

As our society embraced autos, the role of these urban roads changed drastically. People soon wanted to be able to get in their car and drive to a destination as quickly as possible. Traffic controls were placed on roads where there was originally none and the new focus of urban streets was the automobile. Vendors who wanted to sell their goods could not do so on the streets anymore and needed to buy property next to the roads. With no central location for people to gather and interact, the social fabric of cities around America was damaged.

Urban roads are now a place where auto transportation needs take precedent. Drivers are focused on traffic signals and signage and rarely communicate either visually or verbally with pedestrians along the road. Traffic does not flow smoothly as drivers often find themselves waiting at a stoplight when no other vehicles are impeding their travel. This unnecessary queuing is a product of having an autonomous traffic management system. People follow directions from posted signs instead of reacting to their environment and making decisions themselves. When drivers are not at stoplights, they are often going as fast as the posted limit will allow, which further distances the drivers from pedestrians who are looking to cross the road safely. Imagine the difference between cars driving by you in a parking lot at 10 mph to a car speeding by you at 60 mph when you are alongside a freeway changing a tire. Communicating with the drivers on the freeway would be nearly impossible.

Cities have struggled to replace the old fashioned main street as a social gathering point with new venues. In some places, buildings called “community centers” are thought to enhance the community that builds them. These places often charge money for residents who want to partake in the activities offered there.

Interestingly, block parties are a time for social gathering in communities. This is where the street is blocked off to thru traffic and people gather on the street to socialize just as they did everyday 150 years ago. This demonstrates that people can still embrace the potential social function of streets, and that traffic is likely to be inhibiting that nowadays.

Neither the efficient transportation of people nor the important social function of urban streets is being performed in America or most towns around the world. Traffic accidents on city roads are common as drivers react to traffic controls and not to the surrounding environment. Urban streets have gone from being centers of commerce for entire cities to places that can only be crossed on foot quickly and carefully.

The Solution

Shared Space! City planners should strive to give these urban roads back to the community. This can be done by utilizing the shared space concept. To understand how shared space works, it is important to realize how the entire transportation system would better function.

Hans Monderman, known as the “founding father” of the shared space concept, explains that traveling on highways and in urban areas, “the public realm”, should be completely different experiences. Here is a comparison of the two (1):

Highways

Regulated
Impersonal
Predictable
Single-Purpose
Traffic Signs and Markings

The Public Realm

Culturally Defined
Personal
Unpredictable
Multipurpose
Eye Contact

Highways are needed for shared space to work. Society needs these roads to effectively travel longer distances between cities. These roads are much different than the roads of urban areas. They should be heavily regulated by the government. This is because human interaction on these freeways is almost nonexistent. The purpose of traveling on a freeway is to get to a destination, not to enjoy the surrounding area or its culture on the way, and there are few people to interact with along the way.

The public realm is the other part of the highway system. This is an area that is focused on bringing the surrounding community together as much as possible. This is done by essentially removing roads as we know them, and giving that space back to the people. This not only allows residents to move better around their city, but allows motorists to move through efficiently as well. Drivers can make their own choices in this area. There are no centerlines and no curbs, the pavement that is meant for motorists is usually a different color than the surrounding surface. Because of this, drivers have fewer distractions when navigating through the city.

Without unnecessary signage and traffic controls, drivers are able to concentrate on their surroundings. They are forced to make contact with surrounding residents that are also using the public realm area. This makes the motorists much less intrusive to the residents.

Shared Space Philosophy

“Treat the driver like an idiot and they will behave accordingly”

–Hans Monderman (1).

This is the mantra of shared space philosophy. People are capable of making critical decisions when they are driving, however current traffic management systems often restrict people's ability to do this. The shared space system allows people to make decisions when interacting in the urban environment. The result can be a more social environment and less traffic congestion.

Removing traffic controls such as centerlines and curbs lowers vehicle speed; this has been demonstrated in transportation studies. The traffic controls that allow drivers to operate their vehicles at high speeds on the freeway also contribute to higher speeds through urban areas. By reducing vehicle speed to around 20 miles/hour, people sharing the street with vehicles are a lot more comfortable. As Hans Monderman points out in a presentation on shared space, this speed is the fastest speed a human can run and therefore is the top of our acceptance threshold. Above this speed, vehicles traveling by us seem to be moving at a violent pace. Slowing vehicles down is an important step to bringing motorists and the public closer.

A major problem on urban roads is the queuing of traffic at a traffic light. Since these lights normally run on pre-set time intervals, they will often stop and hold many cars at a clear intersection unnecessarily. These vehicles then add to the congestion by taking longer to clear the intersection when they finally get a green light. By allowing drivers to negotiate intersections amongst themselves, unnecessary queuing will not happen at intersections.

From a safety standpoint, shared space may seem to be a step backwards. With the amount of traffic accidents in cities today, it may seem surprising that taking away system controls is appropriate. Shared space however is a system that demands the full attention of drivers. They can no longer eat fast food at the wheel while whipping through an intersection because they have a green. They are forced to slow down and interact with other motorists. The benefit of shared space is that it takes *two* motorists not being attentive to cause an accident; this is because drivers are paying attention to other vehicles and not traffic lights. When traffic lights are controlling intersections, if only *one* driver runs a red light the other driver has little chance to avoid a wreck.

Roundabouts could be considered a step toward the shared space concept that has actually been adopted by many American cities. Roundabouts usually replace a traffic light controlled intersection with a circular road which is connected to all of the intersecting roads. The result is that drivers rarely come to a complete stop, and because

of this, queuing is rare at roundabouts. The drivers are forced to slowdown at roundabouts and pay attention to other drivers. They must yield because there are no traffic signals telling them it is safe to drive thru. This traffic feature follows the shared space concept; take away controls, force people to communicate with their surrounding to efficiently navigate through space.

Shared space leads to increased social interaction and that is essential to a democratic society (2). The transportation system of today gives drivers little responsibility and drivers often do not act responsibly on urban roads. By allowing drivers to use the social skills that are unique to humans, the spaces in a city can be given back to the public while allowing motorists to move freely through as well. To demonstrate this, studies have been performed on shared space areas in Europe to determine affects on traffic flow, safety, and public reaction.

Shared Space Projects

As with any form of new technology, transferring the philosophy of shared space into the real world has been a slow process. There are numerous examples of the shared space concept being implemented around the world; however most are ambiguous as to whether or not they should actually be considered true, shared spaces. They often fit into other categories of traffic management such as traffic calming. Other locations have spaces that have unintentionally evolved into shared spaces. The examples below only come from projects that were purposely designed under the philosophy of shared space.

Currently, the majority of shared space projects are concentrated in northern Europe, Scandinavia, and surrounding countries. This is largely due to a pilot project called Shared Spaces. Funded through a larger European Union program that promotes transnational cooperation, seven projects have been completed in five different countries (The Netherlands, Germany, Denmark, Belgium, and the United Kingdom) since 2006. (2) Despite being open to the public, these facilities are still in their infancy and have not generated a sufficient amount of data to determine if they are being effective. Some of the older examples that were completed prior to the Shared Spaces project are better suited for study.

The Laweiplein (Drachten, The Netherlands, completed in 2000)

Unanimously accepted as one of the best practices of shared space to date, The Laweiplein in central Drachten was a reconstruction project that was designed by shared space creator, Hans Monderman. Originally a traditional four-way intersection with

stoplights and turn lanes, it was one of the busiest intersections in the city – carrying about 20,000 vehicles per day. (7) In a town of about 60,000 people, this level of traffic made The Laweiplein a candidate for redesign.

Deciding to steer away from traditional traffic management practices, the City of Drachten and Monderman decided to completely redesign not only the intersection itself, but also the arterials approaching it. Because the intersection was located at the center of town, the intersection served as a hub for many modes of transportation: automobile, bus, bicycles, and pedestrians. To accommodate all these modes passing through the hub, Monderman combined a popular European traffic facility with a very traditional public space. First, the intersection was completely paved over to create a level surface. This was done to give the impression of a public square – one that pedestrians and bicyclists could roam freely in. Then Monderman placed a roundabout in the center of the square for automobiles, buses, and bikes to revolve around.

The new Laweiplein intersection not only placed pedestrians, bicycles, cars, and buses on the same plane, but it did it without the help of any traffic signs or traffic signals. As a vehicle approaches the Laweiplein, it is forced to slow down as the road narrows and its proximity to other vehicles and elements becomes greater. The only traditional form of traffic management exists in the form of crosswalks that are present at the four entry points to the facility.

When designing the facility, Monderman got extremely creative by incorporating artistic elements that also served as traffic calming devices. Traditional traffic management practices are often consistent throughout the day. For example a stop sign, in theory, remains in use 24 hours a day, even in the middle of the night when traffic levels are very low. To tackle this issue of over managing a system, Monderman created an environment that reacted to varying levels of traffic throughout the day. To do this he placed fountains all around the Laweiplein. During off-peak hours, the fountains only bubbled or sprouted water. However, during peak hours, the fountains were programmed to spray water several feet high. This approach allowed off-peak users to move about more freely, but forced peak hour users to be more aware of their surroundings with the close proximity of shooting water.

Although a full accident analysis report has not been released, the general response from the public appears to be positive. There is no official data, but both local officials and the public claim that accident rates have been significantly improved. Despite the perceived quality in safety, the public has appreciated the improvements in traffic flow even more. Wait time, even during peak hours, has been reduced among all

modes. Even with priority transponders for traffic signals, local buses had an average wait time of 53 seconds at Laweiplein. Since the reconstruction, that wait time has been reduced to 26 to 38 seconds. For automobiles, average wait time has been reduced from 50 seconds to 30 seconds. (7) Pedestrians and bicyclists have an almost seamless trip through Laweiplein, as locals more often than not give them the right of way.

The Laweiplein in Drachten is often seen as the most successful example of shared space because the elements of the shared space philosophy were very applicable to the situation. The Laweiplein was an intersection that was equally shared by several modes of transportation. This multimodal environment suited the shared space concept well and created a space that equally promoted many kinds of travel.

De Brink (Oosterwolde, The Netherlands, completed in 1999)

Another Monderman design, De Brink lies in the town center of Oosterwolde. Much smaller than Drachten and less congested than The Laweiplein, De Brink previously consisted of a five-way intersection that carried about 5,000 vehicles per day. (1) Surrounded by a commercial district and a school, the space also attracts many pedestrians and bicycles.

To accommodate traffic arriving from five different directions, Monderman designed a facility that was a literal definition of shared space. The design was essentially a plaza that allowed automobiles, bicycles, and pedestrians to interact and share space. To distinguish the space from the surrounding roads, the plaza and its five approaches were all paved in red brick. Also, the whole plaza was slightly elevated from the surrounding area to create a stage-like environment for vehicles and people to interact. Descending stairways and handrails on either side of the plaza also indicated to drivers that pedestrians were present. And with all shared space projects, no traffic signs or traffic signals are present.

Unlike Drachten, De Brink has been able to output specific data related to safety and effectiveness of the site. Since its completion in 1999, there have been no “serious accidents.” (1) Also, the average traffic speed dropped 40% from 1999 to 2005. The intersection is also said to have maintained the preexisting traffic numbers of 5000 cars per day. The area also continues to be used by both pedestrians and bicyclists.

Winthrop Street (Cambridge, MA, currently in design stages)

Similar to traffic calming, applying shared space to the American landscape is a feasible, but very slow process. Mode separation on U.S. transportation corridors has been exploited to that point of deliberately excluding access to certain modes. Incorporating the shared space principle in the U.S. would be process that involves locating niche markets. Even in Europe, shared space does not work in every situation. Auto dominance in U.S. further limits the amount of successful projects. Communities that apply shared space to their roadways must already be accepting of multimodal travel or be willing to significantly change their traveling and driving habits.

Although there are several locations in the U.S. that claim to have elements of shared space in their communities, Hans Monderman would most likely not place these projects within the scope of his philosophy. Cambridge, MA is one of the first municipalities to intentionally resign a street using shared space. As part of The Harvard Square Improvement Plan, the city plans to redevelop several streets and plazas in the neighborhood to enhance pedestrian accessibility. Although the whole neighborhood will promote a multimodal environment, shared space will be specifically applied to a portion of a Winthrop Street. Cambridge is not only one of the first cities to apply a true shared space model, but is also one of the first places in the U.S. to specifically call for a “shared” space in its project plan. (3)

City Planners in Cambridge only plan to make minor changes to Winthrop Street, however these changes will greatly alter the ambience of the block. Currently a narrow, two-lane street with textured paving, the plan calls for the curbs to be removed creating a seamless surface. Spanning across the entire width of the preexisting street and sidewalks, the new surface will allow automobiles, bicycles, and pedestrians to come in close contact without any barriers. Traffic signs will also be removed, as the space is intended to be “self-explaining.” (4)

This U.S. application of shared space is more aesthetically driven than European projects. Although the projects in The Netherlands did incorporate aesthetic elements into their facilities, their primary purpose was to alleviate congestion, improve traffic flow, and lower accident rates for all modes of traffic. Also, with the Winthrop Street example, it must be noted that Winthrop Street is a short walk from Harvard University. The interests of Harvard are very present in the plan for this project; so present, in fact, that the University contributed \$1.3 million to the Harvard Square Improvement plan. (5) This raises questions of how shared space should be viewed in the United States. Should it be tool for aesthetic improvements and private redevelopment or should it be a means of managing traffic and promoting multimodal travel?

Niche Market in the United States?

As discussed earlier, for shared space to work in the United States, it would have to be applied in location with a niche market. One suggested location for a trial of shared space that might be that niche market is in Seattle. Seattle's urban core has undergone a transformation, from neglected zones, into the now booming places that many people work in or call home (8).

Belltown, with its profusion of housing, a healthy commercial scene and vibrant cultural life, shows how the potential for urban living is being realized in Seattle (8). It seems to be a culture yearning for social interaction. But as the urban center is revitalized, and as commercial and residential densities increase, the need for open space is important. The residents and users of downtown neighborhoods need open space for relaxation, recreation and relief from the congested city. There is a lack of parks in the area due to high real estate costs and a cash-strapped city government (8). Therefore, there is a primary put on finding ideas to create more open space where people can interact freely.

One creative way that has been proposed to find a way to provide new open space in the city is the use of shared space. In Seattle, streets and alleys make up almost 40 percent of the city's total land area. It is proposed for the Terry Avenue North streetscape to become a shared commercial street that handles both pedestrian and vehicular traffic. Terry Avenue North in the South Lake Union neighborhood seems to be a good candidate due to the new urban infill development, both commercial and residential (8). To attract people to this area such as residents, visitors, businesses and workers, and to make the area thrive, open space is critical.

A six-block stretch that runs through the center of the neighborhood, has a very wide right of way (8). This stretch is quiet and peaceful, and its unique patchy brick paving and abandoned sections of rail tracks give it a colorful character that would encourage the interaction of a shared space environment (8). This area can be a significant asset to the South Lake Union neighborhood as a pedestrian link between the neighborhood and the lake while still allowing auto traffic. Rather than simply serve as a transportation corridor, other transportation modes would be available to residents and workers, or even a destination for lunch time or recreation (8).

As discussed earlier this concept would be a novel for any city in America. This case is no different. In the Terry Avenue shared space design, it would involve some new thinking for city authorities. The Berger Partnership, in collaboration with City Design, held a series of meetings with each of the regulatory agencies — the Seattle Department of Transportation, Seattle City Light and Seattle Public Utilities — to bridge the gap between the existing regulations and the proposed shared space concept (8). This helped in the process of explore what would work or what would not with respect to shared streets in Seattle.

It seems in Seattle that the demographic make-up of the city would thrive more in an environment that does not simply give priority to auto traffic. The area could be considered a downtown area with the market niche for a shared space environment. In the downtown area, the commercial scene would be boosted by the new pedestrian space that is made possible by shared streets. Also, introducing shared streets to the park starved area would benefit residents looking to get outside and have lunch, partake in recreation, or simply interact with the surroundings.

Shared Space Geometric Aspects

As discussed earlier, shared streets rely on motorists reacting to their surroundings rather than simply following street signs to create a more controlled speed and interactive environment. Rather than simply trust the public to buy into the concept, there are some geometrical aspects to the design of shared streets that can assist in the effort to calm traffic.

One such method involves narrowing the entrances to the shared street. By narrowing the entrance the motorists are forced to lower their speeds adjust to the frame of mind needed for travel in the shared streets (9).

Within the shared street there are also some geometrical ploys used to get drivers out of the point A to point B mentality. This can be accomplished by creating discontinuity in the path of moving vehicles (9). This could include methods such as bending the alignment of the road, or introducing centerpieces. The centerpieces could be dual purpose play areas for children, or benches, or aesthetically pleasing flower beds or trees (9). All of these geometric methods create an environment more conducive to controlled traffic.

The parking scheme of a shared street is also integral to the traffic calming effect. By giving the option of parallel, diagonal, or perpendicular parking, the auto drivers can choose the most effective way to park at the specific time period. The parking can also be alternated from different sides of the streets. In this case the drivers must slow down to effectively maneuver around cars or to the correct area to park.

Within the basic principals discussed in the previous two paragraphs, there is considerable thought that goes into how each scheme should be executed. For example, calculations from empirical data are made specifically involving the chicane with respect to the optimal length of tangent sections between chicanes, calculating the values of the path vehicles take when traveling, or calculating the optimal width. Within these calculations the goals include issues such as accommodating one service or passenger car only for some areas, or two for others. At the heart of these geometric calculations and designs are providing a transportation area that is conducive to safety, constant slow velocities, and communication between street users.

Shared Space in the Suburbs

While the dominant discussion of the application of shared streets has involved the urban, “public realm,” there is some interesting points involving shared streets in the suburban environment. The suburban or residential streets are normally run in an environment that is more like the shared space idea in the first place. Houses located on dead end streets or cul-de-sacs already use many of the concepts of shared streets. In these locations it is normal to see basketball hoops on the road, and kids playing freely. According to Eran this and other social benefits could apply to residential areas that utilize shared streets (10).

As discussed earlier, interaction in city streets has been on the decline at the present. The same could be said about the residential environment. It seems as though neighbors are less likely to interact or get to know each other in today’s society. One way to encourage interaction between neighbors and within communities would be utilization of a transportation technique that encourages interaction. Rather than separating recreational traffic such as bikers, walkers, or rollerbladers from auto traffic, shared space would create an environment that allows all users to use the roads freely.

Although most people have a negative connotation associated with children playing in the streets, this would actually be encouraged in the shared space environment. One study in Germany found that the application of shared streets created a safe play environment that increased play activity by 20 percent, and allowed for more complexity in which children are allowed to play (10).

Also, the shared street environment could allow residents to take some pride in their traffic environment. People could be given the freedom to work to improve their streets with things such as neighborhood planting beds as a centerpiece of the streets (10). Many of the geometrical means to creating a controlled flow environment are already intrinsic to a residential neighborhood, and certain communities could be a good target for introducing the shared space concepts.

Shared Space Environment

As discussed earlier, Hans Monderman points out that there are inherent differences between the highway system and the public realm. While the highways are needed to get people from point A to point B, Monderman argues that the qualities that make the public realm work include: A culturally defined area, with a personal atmosphere, unpredictable nature, multipurpose usage, and eye contact dependence. It seems that these characteristics of the public realm that make shared space work are dependant on the environment of the specific public realm.

One example that could be considered in deciding if a certain public area would work for shared space is the culture of the users. It seems that the areas where shared space has worked are a more “laid back” society. In countries such as the Netherlands, less emphasis is placed on strict 9 to 5 work schedules. In fact, it is typical for workers to receive 5 weeks of vacation per year, and for many shops and small businesses to be closed on Monday mornings so people can have long weekends. Contrast this culture to the “time is money” philosophy of many major cities in America, and it seems like different results could be seen in different cultures.

Shared streets are dependant on drivers looking out for the wellbeing of not only themselves, but the other traffic around them. In a society so entrenched on being on time, having set schedules, and keeping up in a fast paced world, it isn't hard to imagine more users taking the liberty of giving themselves the right of way excessively, and not showing the patience to interact safely with the traffic around them. The culture of the public realm should be evaluated when looking into shared street use.

Another environmental aspect of the public realm that should be evaluated is the physical layout. In the examples where shared space worked, the areas were based on commercial interests. When the public area has businesses, shops, tourist attractions, or scenic areas it creates an environment more susceptible to personal interaction. In this environment the purpose is pointed less towards individual needs and more towards interaction, whether it is while navigating to your location or buying or selling goods. The rich tradition and cultural upkeep of the cities that have made shared streets work also promotes interaction by exuding a “market” feel.

In contrast, a public environment based more on getting people to and from work at their large businesses seems less likely to work. This public environment shares more characteristics of the highway system, where people are more concerned about getting from point A to point B. Therefore, the physical characteristics of the public realm should also be evaluated when deciding whether or not to use shared space.

The purpose of the infrastructure being evaluated for possible shared space use is also important. If it is vital for the infrastructure to provide a large flow of vehicles, shared streets is more than likely not a good option. Even in the successful cases of shared streets use, the flow of traffic was not increased, although the case in the Netherlands discussed above involving the Laweiplein might contradict this statement. In this case they created an environment where a large number of vehicle flow was similar to the previous conventional design, even after it was changed to shared space. In

general though, it seems that if shared streets are implemented, the infrastructure should either not be vital to traffic flow, or a viable alternative route should be available for through auto traffic.

Conclusion

Shared space leads to increased social interaction, and that is essential to a democratic society. The transportation system of today gives drivers little responsibility and drivers often do not act responsibly on urban roads. By allowing drivers to use the social skills that are unique to humans, the spaces in a city can be given back to the public while allowing motorists to move freely through as well. With the added responsibility, the street environment could become less of an infrastructure for auto use, and more of a community gathering that provides a function for all forms of transportation. To demonstrate this, the studies discussed earlier involving shared space areas in Europe, showed positive affects on traffic safety, providing multiple functions, and traffic modes, as well as increasing public interaction.

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