

*Infrastructure and Gender: Impacts of safety on mobility***Background:**

The physical infrastructure of a city impacts women's safety and thus their mobility and comfort within the city. Elements such as lighting, poorly maintained sidewalks or security can impact when and where a woman chooses to go and the freedom that she has in any specific space. The public sphere of the city is a place of creation, production and negotiation (Phadke, 2007). However women's ability to make use of services and participate within the social, cultural and political aspects of the city can be limited and sometimes completely excluded through the lack of infrastructure pertaining to women's needs (Fenster, 2005).

The tension of public and private sphere comes into play with society's expectations of women's gender roles. Societies argue that women belong in the private sphere and should keep out of public space, even though that may contradict the lifestyles of the women within that society. Women, who dare to go outside of the private sphere, will face harassment and sometimes assault in public spaces (Whitzman, 2007). Cities are not designed for women to interact within the public sphere, zoning for housing and transportation design can marginalize women's access to public space. This is not the case for men who commonly prioritize speed and cost while traveling, while women prioritize safety (Whitzman, 2013). Where planners tend to exclude women and children from public spaces, a void is created in which women may not feel welcomed and are put at risk. Often women and children are excluded in public spaces due to the rhetoric that it is for their own good (Wilson, 1991). However, women have a right to the city, a right to mobility and a right to take risk (Phadke, 2007). The right to the city includes not only occupying public spaces but also participation within the city (Phadke, 2007).

Alongside the tension of women's place in the public and private sphere, the rise of automobiles has created further stress in systematic inequalities. Automobiles create and reinforce socially segregated cities by extending the commute distance and time. Access to automobile ownership is limited by wealth, gender and often social class. Those who are unable to acquire a car are left with other modes of transportation such as bikes, scooters, public transit or walking. Internationally, women are less likely than men to have access to a car, but also less likely to have access to bikes and scooters. Thus women have to depend on public transportation and walking, even though walking is considered the least safe way to travel (Whitzman, 2013). However, with the rise of automobiles, traffic accidents have become the leading cause of death (Whitzman, 2013). Those who are critically injured or killed in

these traffic crashes are usually those who are the most vulnerable, the people on bikes, scooters or pedestrians.

Recently there has been an increase in focus on walking and biking as respectable modes in developing countries (Whitzman, 2013). This development comes from the impacts of multiple failures that automobiles have created within developing countries. Automobiles require an immense amount of space dedicated to them and do not fare well in densely populated cities. They create greater inequalities and are disproportionately dangerous. Focusing on transit, walking and biking as respectable modes of transportation releases the strain that automobiles have on urban space and support a more equitable city.

Evidence

The issue for women's safety in public space transcends multiple different countries, cultures and levels of development. In Toronto, Canada 45% of women felt unsafe after dark, while only 13% of men (Whitzman, 2002). In Delhi, India more than 80% of women were sexually harassed on public transport over the previous year (WICI, 2010). In New York City they found that two thirds of women have faced sexual harassment, and one in ten reported sexual assault on subway trains (Loukaitou-Sideris et al., 2008). In Edinburgh, Scotland 43% of women have been harassed; while one in five have been followed by strangers (DfT, 1999).

Importance in Development

A city is a place of facilitation and exchange, whether it is ideas, knowledge, culture, goods, services or human connection (Moored, 2006). A reliable network and an individual's mobility is a requirement for a successful city. Women are more vulnerable and have different needs and uses within a city. When women are comfortable and safe within public spaces, everyone is comfortable. Assuming women's perceptions of comfort and safety as an indicator for everybody can help define and develop the city accordingly (Koskela, 1997). This helps support livability for families and all manner of people.

This was the case in Bogota, Colombia where a social transformation occurred in order to create an equitable sense of citizenship and 'a right to the city' amongst the entire population (Whitzman, 2013). This transformation was able to occur due to four mega plans that came together to address the issue from multiple angles (Whitzman, 2013). None of these plans were directly implemented specifically for women, but took gender into consideration and indirectly impacted women's safety, mobility and lifestyle in the city for the better (Whitzman, 2013).

Before this transformation in the early 1990s Bogota's citizens saw the city as dirty chaotic and disorganized (Whitzman, 2013). Bogota also had one of the highest homicide rates in the world (Whitzman, 2013). Two major players in this transformation were the Mayors during this time period, Antanas Mockus, a philosopher, and Enrique Penalosa, an urban planner (Whitzman, 2013).

They created a comprehensive community safety plan from the analysis done on a local study of causes of violence. They created indicators to be able to measure improvement and designed multiple initiatives to address the root causes of the violence. From there they created measures such as, holding the police more accountable, supporting a growing civic culture, distributing thumbs up/thumbs down cards for the public to communicate silently over conflicts, abolishing the distrusted transit police, hiring mimes to tease car drivers and pedestrians who broke traffic laws, creating the zebra knights taxis, holding an annual women's night out event, and also closing off roads to traffic once/twice a week (Whitzman, 2013). The annual women's night out event puts an emphasis on women belonging in the public sphere, and even celebrated for it. Music, discounts for restaurants and closing down the streets makes for an enjoyable safe atmosphere for women to linger in evening. Efforts to indicate women are welcome in public space can have large impacts on the women who use it. While women's issues were not directly addressed in most of the measures, they all indirectly impacted women's lifestyles. The mimes that help police traffic laws keep the streets safer for women who are walking; peaceful communication over conflicts provides safer environments and so on. The results were present, during this time traffic fatalities decreased by two thirds (Whitzman, 2013).

They also started a recovery of public streets which included banning car parking, improvements to sidewalks, traffic signals, lighting, benches, and tree planting (Whitzman, 2013). The focus on changing the infrastructure to support multimodal transportation uses and making the landscape more welcoming had a large impact on the desirability to be outside. With the desirability came more people who used the services and creating a more welcoming climate. This was one of the more radical implementations of their plan, in which they created an urban culture that valued access to public space via walking, cycling and taking public transit (Whitzman, 2013). They also implemented a social campaign in which women would hold signs in buses and bus stops about social unacceptance of harassment (Whitzman, 2013). By creating a campaign that support's women's role in the public sphere they help denounce the idea that women belong in the private sphere and support the cultural change that would need to occur.

However, there were also inequitable downsides to some of the implementations, such as vendors being prohibited in public space and the continuing economic and social barriers to the use of

public transport (Whitzman, 2013). Vendors historically had worked in the private sphere and the majority of the vendors live in poverty, which is why they were removed because they were seen as undesirable (Whitzman, 2013). While the implementation in Bogota wasn't perfect, it was still several steps in the right direction.

Importance in Gender Equity

Violence against women in the public sphere is used to enforce their gender roles and to punish them for choosing to leave the private sphere. Women should have the ability and the freedom to be complete daily tasks and to roam the city without fear, exclusion, intimidation, or violence. Women should be allowed to loiter, and feel welcome to roam in public space (Phadke, 2007).

Social exclusion is a consequence of fear and crime. Women experience exclusion in a variety of different forms including exclusion through the experience of crime, exclusion through sub criminal acts, and exclusion through fear of crime and precautionary behavior (Mitchell, 2003). Social exclusion is both a public and private problem to be addressed by individuals, government, the private sector and civil society where it occurs (Mitchell, 2003). While men have more experience of violence in public space, women are more fearful there (Koskela, 1997).

Despite the experiences of male oppression women also have agency in their own lives (Koskela, 1997). Women experience both restrictions and obligations at the same time as actively producing, defining and reclaiming space (Koskela, 1997). This isn't always addressed in feminist literature, since it is too busy studying the forms of oppression in public space than to realize how women combat it (Koskela, 1997). Women who claim ownership on public space exercise and enforce women's rights to take risks and allow greater opportunity for more women to join them (Phadke, 2007).

A useful way to evaluate what indicators are most important for women to feel empowered in public spaces is to learn from the women who are not afraid. Hille Koskela asked what aspects enabled women feel confident in public spaces and interviewed several women in Finland to learn why. Her thought process was that Finland has a good record on gender equality, so asking these women about their ability to take possession of space would reveal what aspects in the public sphere were the most important for their personal empowerment (Koskela, 1997). She wanted to challenge the view that fearfulness is an essentially female quality. This was also an exercise in respect for women's own descriptions of their embodied urban knowledge.

“If women’s fear of male violence is regarded as a reflection of gendered power structures, it follows that in societies with a relatively high degree of gender equality women should feel confident in using public space and in having an influence on the development of their environment”

-Hille Koskela, 1997

In the interviews conducted, they found there are multiple ways of being spatially confident. Taking possession of space by using it repeatedly and feeling at home in one’s environment in a common form of confidence. Using space helps demystifying it and developing a mental map provides a level of comfort and confidence in an area. A picture of a place made by one’s own experiences will be perceived as a safe ordinary place, even if you are told it is a dangerous place (Koskela, 1997). Another way to be spatially confident is a display of confidence, whether it is walking ‘the bold walk’ of confidence in public space, or dressing up, not only as resistance to the male gaze (loud and proud) but also becoming a part of the urban spectacle (Koskela, 1997). There was also a level of confidence women would receive when they could visually see other women in the public spaces they were in. By daring to go out, women’s presence in urban space helps produce space that is more available to other women (Koskela, 1997). In this way, walking in the street can be seen as a political act. There were also women who would fake boldness as a denial of fear in public space. Koskela argues that these women were using a form of confidence, since they were containing their fear even if it was there (Koskela, 1997).

Koskela found that women are experts in urban semiotics, the ability to interpret who is dangerous and who is not, due to a higher alertness in the city. However, women tend to distrust their own intuition and can never explain how they know something is dangerous or safe. She theorizes that the personal distrust comes from women being socialized into being afraid in retrospect, even if they are not in the moment (Koskela, 1997). Women’s boldness and spatial confidence can be considered a social taboo as lingering effects from gender roles in the public and private sphere (Koskela, 1997).

She also found that Finnish women are not equally fearful. Mothers were more fearful because of their responsibility for their children. Young girls learn to build their confidence from a young age by being allowed to play out with friends in the evenings (both in playgrounds and dark forests) and to use buses to reach hobbies (Koskela, 1997). Pregnant women faced far more challenges in claiming public space and lost a lot of their spatial confidence because of social pressures from what they are “allowed” to do while pregnant (Koskela, 1997). Women could also lose their spatial confidence, due to a negative

experience, but could also redevelop it. Thus spatial confidence is flexible and can change throughout different times in life. This enforces that there is no single female experience (Koskela, 1997).

The relativity of danger in different cultural contexts outside of Finland was also a topic that was discussed. The Finnish women explained how they recognized a difference in the perception of safety during trip to America, mentioning that children were taken to and from by cars constantly out of fear that something might happen. They also made reference to the deep conservatism which constantly brings up perverted men who want to rape women as an everyday topic (Koskela, 1997). Even so, Koskela argued that complete gender equality in Finland is partially a myth, since power over space is gendered and Finnish women still experience oppression (Koskela, 1997).

Frameworks

Mobility and access to transportation is usually viewed as either an economic/development issue or a human rights issue but rarely both at the same time (Whitzman, 2007). Mobility is considered a human right within the context of freedom, as the freedom to move where one pleases without fear. Where mobility as an economic/development issue focuses on the potential each individual has to act within the economy or furthering a plan for (economic) development. Women's mobility within the public sphere also fits within the capabilities framework in which women navigate fear and confidence and hold the right to take risks and act as active agents in public space.

Research Implications

Current Research on infrastructure's impacts on safety and mobility cover forced immobility or forced mobility. Forced immobility would be isolation within the home whether it is due to enforced gender roles, threat of violence or war-ravage environment (Whitzman, 2013). Forced mobility would be the long, dangerous trips women have to make due to inadequate water sources or sanitation facilities (Whitzman, 2013).

There have also been developments in safety audits that help define areas that need improvement. One of the more impressive implementations of a safety audit would be the Saftipin Mapping application for smart phones. The Saftipin App enables users to perform safety audits on any given area and loads them into a database that is available to everyone (Viswanath, 2015). Elements that the Saftipin Audit scores evaluate include: light, openness, visibility, security, walk path condition, people present, public transport available, gender usage, and feeling (Viswanath, 2015). They found that some elements had a positive scale (the more available the better) such as lighting and security.

However some elements had a moderation scale, such as how many people where present (too few was dangerous, but too many could be dangerous too) (Viswanath, 2015). Security measurements took in police presence and CCTV, however increased police presence at transit stations were more effective on the feelings of safety than CCTV presence has (Viswanath, 2015).

However, Saftipin does have its flaws, more men use it as trained auditors than women do themselves (Viswanath, 2015). It's open to anyone, but it lacks proper publicity for the services. It currently is a crowd-source tool for professionals more than the public. The questions designed in the safety audit impact women but are not necessarily women specific.

Most mainstream transportation research has completely ignored the complex daily patterns of activity that women take (Whitzman, 2013). Such tasks include domestic chores, shopping, care giving, errands and paid work. Productive paid work and reproductive unpaid work is usually separate physically (Whitzman, 2013). This is apparent in transit routes, where the focus is on Transit "Rush-hours" or "Express Routes" that connect job centers to homes but not other locations. In feminist research these issues are addressed, but then lack consideration for journeys to leisure or pleasure, or even the demands of a journey not made (Whitzman, 2013).

Policy Implications

Few transportation policies address gender. It is obvious throughout this paper that spaces and services can be improved for women's use. Efforts can be taken to indicate that women are welcome in public spaces and are not restricted by any means. Such efforts could be as simple as keeping women's restrooms open at night. It could be an effort to reduce and deal with graffiti in public spaces. It could be the implementation of policies to support the safety of pedestrians and bicyclists in everyday traffic, or bus routes that run during "off hours" to other locations. Many community initiatives leave out the viewpoints of the people who are the most excluded from public space, including older adults, children, and people with disabilities. Taking the time to listen to women's needs in public spaces and addressing them could make an impact on the city as a whole.

Women's only transportation options have been offered as a solution to harassment within policy implementation, but have been found to be problematic in itself. Women only transportation addresses cultural taboos of women and men intermingling, but shifts the burden onto women (Phadke, 2007). By shifting the burden onto women to protect themselves, it removes any sort of responsibility men should have for their actions. Men should stop harassing women, women should not have to withdraw into second class services to escape them (Whitzman, 2013). In Japan, a women only car was

implemented in a train route, when interviewed 36% of women responded that they never used the women only cars, while only 4% always use the women only cars (Loukaitou-Sideris et al., 2008). 2% of women in Pune, India didn't think women only cars were a viable solution and instead preferred more buses in general so crowding was less of an issue (Peters, 2001).

Violence in the public space affects both the public and private sphere, they are not separated (Whitzman, 2007). Feelings of vulnerability cannot be expected to be spatially divided; in a woman's mind there is no opposition between private and public dimensions of fear (Koskela, 1997). "Women's experiences in both in private and public space are fraught with potential and actual danger and uncertainty and women's fear of violence is a rational response to an everyday problem experienced over the life course in private as well as public relations and spatial contexts." (Whitzman, 2007). Policy emphasis on danger in public space helps exclude the experiences of women whom the ideal of home as haven falls short. Using the public spaces to bring up previously private issues and thus make them public. Public spaces become havens for people struggling with violence in private spaces.

Conclusion

Women have the right to belong everywhere, to explore, inhabit, encounter, loiter and experience the city to its greatest potential. There is a saying for "the man on the street" but not for women on the street. Where are the women on the street? One survey found that at any given time no more than 28% of the people on the street were women (Whitzman, 2013). Women avoid public space, due to the threats of the danger they face. Choosing to leave the house at one point and stay in another does not change their chances of danger; it is a constant within their lives. Where anonymity can be freeing for men, it is also very dangerous for women. Women are governed by a 'tyranny of purpose' in public space in which they have to demonstrate their reasons for being in public (Phadke, 2007). Questions we should ask ourselves when planning public spaces: who uses transportation modes and why, and to evaluate those decisions we should be asking who makes decisions that affect transportation and how? (Whitzman, 2013).

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