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**Sexual Harassment on Public Transit and the Influence of Perceptions
of Safety on Travel Behavior**

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Report

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by Nathaniel Garcelon Buckley, MSCRP

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Sexual harassment on public transit remains an understudied and misunderstood issue within the transit planning profession. Conventional approaches to modeling travel behavior and mode choice which focus on travel time and destination, and which take a "gender-blind" approach fail to address the extent to which risk of sexual harassment and assault on public transit may influence women's travel behavior. This report examines women's perceptions of safety while using public transit, and argues that by better understanding how fear of sexual harassment influences travel behavior, planners can more effectively address women's transit needs.

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1. Introduction

The public discourse on sexual harassment is changing. Where the term sexual harassment once evoked workplace settings, men of power, and lawsuits, we are now in the process of developing a more nuanced cultural understanding of sexual harassment in all spheres of life. In particular, there has been significant media attention given to harassment in public spaces in recent years, with women speaking out about cat-calling, the casual misogyny of dating culture, and experiences on college campuses, as well as a broader conversation about sexual harassment in work and home life that goes beyond the type of grossly inappropriate behavior that once "qualified" an incident as sexual harassment. In particular, the public discourse on sexual harassment in public space has become more directly tied to the concept of Right To The City, and sexual harassment is increasingly understood as an oppressive condition of urban life, something that degrades women's peace of mind by making them unwelcome in the cities they inhabit. (Levy, 2013) There is a small but growing body of academic literature on the subject of sexual harassment in public space as well, (Loukaitou-Sideris et al., 2009) one that attempts to frame the issue within a context of feminism and gender studies, and to make a case for addressing sexual harassment in public space as a priority for planners and policy makers.

The literature on sexual harassment in public spaces has drawn two significant conclusions. The first is that sexual harassment in public space has ramifications beyond the "severity" of harassment incidents themselves. (Valentine, 1989b) While incidents of rape sexual assault in public spaces are rare, "minor" forms of sexual harassment (the word "minor" here meaning normalized) are exceedingly common. (Viswanath & Mehrotra, 2007) These forms of sexual harassment, cat-calling, unwanted attention, inappropriate physical contact, aggressive advances from strangers, and a range of other invasive sexualized behaviors, are a less "incidents" in the strict sense of the word, and more of an inescapable condition of modern life. These incidents have been normalized and are considered "minor" enough to fall below the level of crimes or even social taboos, but their psychological effect on victims is to cast public spaces as dangerous, and

to place a burden on those who must endure the hostility of public space. The second conclusion of the literature is that sexual harassment in public spaces has a degrading effect on women's Right To The City. (Levy, 2013) The concept of Right To The City states that a citizen of a city has the right to access all of that city's public benefits. To travel wherever she wants, to use public space, and moreover the right to feel a sense of ownership and belonging within the city she calls home. Researchers have found a connection between fear of sexual harassment in public spaces and avoidance of public spaces, a loss of ownership of public space, and a marked degradation of Right To The City. Following from these two conclusions, there has been a push to address fear of sexual harassment, not as an issue of crime and public safety, though these are vital issues, but of access to urban space. (Fenster, 2005) The backlash against street harassment in recent years is more than a call for civility in public spaces, it is a demand for a basic right of city dwellers to be enforced.

Even as street harassment has received increased and necessary attention, sexual harassment on public transportation has remained largely unexamined. Public transportation is a basic function of a city that allows residents to access all parts of a city. Public transportation brings people to their jobs, it allows people to live where they wish and still access distant areas of their city. Sexual harassment on public transportation has the same effect of deterring women from accessing the city out of fear and anxiety as does sexual harassment in public space.

This paper will attempt to address the following question: How does fear of sexual harassment influence women's perceptions of transit spaces and use of transit systems?

2. Literature Review

1. Gender and Fear of Crime

The relationship between gender and fear of crime, and in particular the fact that women are more fearful of crime than men, is an established fact within sociological and criminological research. (Loukaitou-Sideris et al., 2009; Valentine, 1989a) Many researchers cite a paradox between the actual nature of gender and victimization and gender differences in perceptions of vulnerability. Valentine puts this paradox most succinctly,

Crime statistics show that the group who experience most interpersonal violence are young single men living in urban areas...Consequently, young men should be the group who exhibit [the] most fear of crime. Paradoxically, in 1974 Erskine's examination of Gallup, Roper and National Opinion Research polls in the US showed that, in fact, women are the gender more fearful of crime. LeBowitz (1975) reports that although a majority of women of all ages indicated a fear of crime, in most cases less than a third of men at each age level reported similar levels of fearfulness. Other research has repeatedly and conclusively produced the same results. (Valentine, 1989b)

In other words, women's fear of crime is a separate issue from crimes committed against women. Fear of crime is a sense of vulnerability, an anxiety that has wide-ranging effects on women's perceptions of space and their decisions on how to exist in public space. (Loukaitou-Sideris et al., 2009; Macmillan et al., 2000; Pain, 1997; Valentine, 1989b)

The most plausible explanation for gender differences in fear of crime comes from Valentine, who asserts that women's fear of crime is essentially a fear of victimization by men. Far from being a simplistic or reductive theory, framing women's fear of crime as a fear of victimization by men offers a compelling explanation for gender differences in fear of crime. Valentine, and later MacMillan et al, point out that most violent crimes against women are committed by men. (Macmillan et al., 2000; Valentine, 1989b) Thus, men and women may have similar fears of, say, identity theft, but crimes like sexual assault and rape are overwhelmingly committed against women by men. Valentine's argument is essentially that the gender differences in fear of crime are due to fears experienced uniquely by women — of crimes committed uniquely against women — and that women's heightened sense of fear is essentially a fear of male

violence.

Valentine's early work on women's fear of male violence has one other fundamental point that helps frame gender differences in fear of crime. Valentine argues that male violence exists on a continuum, of which rape is the most extreme example. (Valentine, 1989b) Sexual harassment exists on this continuum and as such, experiences such as verbal sexual harassment, cat calling, wolf whistling, and any number of "minor" acts of aggression towards women are reminders of that continuum of male violence. These experiences may not be considered "crimes" in a strict sense, but they are invasive, contribute to a sense of vulnerability, and help contextualize the heightened fear of crime experienced by women. The link between experience and women's fear of crime, therefore, is more closely related to experiences with harassment than with "crime" in the strictest sense.

Macmillan et al argue that experiences with harassment account for gender differences in fear of crime, that "sexual and stranger harassment are essentially female experiences," and that treating sexual harassment as an "ephemeral disorder" rather than a priority of policing has had a "profound" effect on experiences of safety among women. (Macmillan et al., 2000) Stringer concurs, noting that

While crimes of terrorism and murder claim the primary focus of the media's attention to subway safety, one transportation safety concern that is largely overlooked in the public eye is that of subway sexual harassment and assault...Far from urban myth, anecdotal evidence suggests that incidents of sexual harassment and assault in the New York City subway system are commonplace. (Stringer, 2007)

Stringer also points to the "normalization" of acts of harassment, what Viswanath calls "the violence of normal times." (Ibid; Viswanath & Mehrotra, 2007) To these researchers, women's greater fear of crime is due less to perceived physical vulnerability to men, but to actual experiences with crimes that exist on a continuum of violence, and while these experiences fall below the threshold of "crimes," they serve as reminders of vulnerability and as threats of greater violence.

Many researchers also point to the presence of strangers, of unfamiliar places and people, in women's fear of crime and perceptions of vulnerability. Macmillan et al argue

that "...relational distance may contextualize the effects of harassment on fear. The potential of sexual harassment to evoke fears of sexual attack may be much greater in contexts and interactions where the perpetrator is an unknown entity." (Macmillan et al., 2000) Yavuz and Welch, in their study of Chicago transit users, theorize that women's perceptions of safety while using public transit are less influenced by security measures such as video cameras than men's, and more likely to depend on how long they have been using public transit and how familiar with their environment they are. (Yavuz & Welch, 2010)

One major point of agreement among researchers is that women's fear of crime is heavily tied to location. The relationship between experiences with sexual harassment and perceptions of safety, feelings of vulnerability in unfamiliar spaces, and the "normalization" and under-policing of "minor" or "ephemeral" forms of male violence all help tie women's increased fear of crime to a sense of vulnerability in public space. The influence of "relational distance," ie unfamiliarity, in assessing the threat a person may pose, the fear of an "unknown entity," and the influence of familiarity with one's surroundings all point to lack of control as a key factor in women's level of fear in public spaces. A space may be felt as dangerous if it is unfamiliar, or if others occupying that space are unfamiliar or unpredictable. Spaces are perceived as dangerous when women feel they lack control over that space, or that they lack control over what happens to them in that space. Unfortunately, this lack of control over and ownership of space is, for women, a common characteristic of public space.

2. Gendered Space and Perceptions of Safety

Socially constructed notions of gendered space are so familiar, so ancient, so engrained within our culture, that we are often unconscious of their power. The concept of the home as a feminine space is immediately familiar in everything from sitcoms, to advertisements, to female politicians who must be "a mother and a wife first," to vague images of the women of a hazy cultural past, sitting by firesides with children while men labor in fields. The counterpart to these images is equally familiar. Men at work, men outside the home, male spaces apart from female spaces. But it is false to believe that

these images tie gendered people to gender-neutral spaces: the reality is that spaces take on the genders we give them.

...the separation of home and work created by the development of the private single family home in the suburbs away from the site of production resulted in an urban built form which physically represented and enforced a particular social organisation of people a space... This built form then becomes the norm, and symbolizes through imagery the "appropriate place" for a particular activity. The suburbs have therefore become associated with women and with domesticity, peace and safety; and the city with men, power and danger. (Valentine, 1989b)

Gendered space also has a close relationship with the social structures of capitalism, in that "the increasing separation of home and work under capitalist urbanization [supports] the false dichotomy between the association of private space with reproduction, consumption and women, and public space with production, politics and men." (Levy, 2013) Public space, therefore, is not a neutral space, but a masculine space, one that often excludes women, and one that carries a sense of vulnerability and exclusion. Moreover, public spaces are (deliberately or not) built as male spaces and maintained as such. The notion of the home as an "appropriate place," and its implication of public space as "inappropriate" strengthens women's perceptions of fear in public spaces because they lack control over public spaces. They cannot choose whom they interact with, and this "profoundly affects their sense of control and hence, security, in public space." (Valentine, 1989b) Indeed, Pain argues that "most women hold powerful concepts of public space as dangerous and private space as safe." (Pain, 1997)

Several researchers have shown that many public spaces perceived as safe by men, and indeed designed to be safe, are perceived as dangerous by women. Fenster (2005) found that "[s]ome women perceive parks as 'male hostile areas': they are 'conquered' areas."(Fenster, 2005) Fenster also identifies "planned traps," places with only one clear exit, places with benches where men gather and loiter, places that were intended to be public, open spaces, but where women feel vulnerable and unpleasant. (Ibid) Likewise, Viswanath found that

women feel uncomfortable in male dominated spaces such as cigarette shops, 'dhabas' (roadside tea and food stalls), taxi stands, certain street corners, helmet stands in car parks, liquor shops, and certain parks. Women not only hesitate to use any of these

spaces but also are reluctant to be present near them for fear of harassment. (Viswanath & Mehrotra, 2007)

Valentine asserts that these are spaces in which women cannot control their interactions with unfamiliar men, spaces that are "unpredictable, potentially uncontrollable, and hence threatening." (Valentine, 1989b) Time is a factor as well,

...women's [fear of violent crime] is characterized by its temporality as well as its spatiality. This is commonly manifested in the significance of darkness as a cue of danger and by changes in feelings of security between summer and winter as well as day and night. (Pain, 1997)

The gendered nature of public space and its effect on perceptions of safety is a social phenomenon, not a characteristic of built form or the physical nature of space. It is not a question of poor design, but of planning that treats cities as gender neutral, and the needs of men and women in terms of urban form as identical. In the past, urban planners have tried to use design strategies, particularly increased streetlighting, to improve perceptions of safety. Koskela and Pain argue that this is an incomplete strategy,

It is not environmental alterations per se which it is hoped will reduce fear; rather it is the increased sense of ownership and informal surveillance of space, and the likelihood of greater social interaction, which may result from environmental change...fear of crime is so closely embedded in broader aspects of social life that, while improvements to built environments may benefit some aspects of quality of life, they are unlikely to have significant effects on fear of crime. (Koskela & Pain, 2000)

Instead, Koskela and Pain argue for an understanding of perceptions of safety that acknowledges the socially constructed nature of both women's fear and gendered spaces, an understanding that

[situates] women's unsafety firmly in a socio-political framework of patriarchal relations, relating fear to tangible risks and to women's broader social vulnerability as well as highlighting the man-made nature of particular designed environments. (Ibid)

That is, a view of the built environment that recognizes its cultural dimension, and an approach to planning that places at least as much importance on social change as it does physical design.

According to Lynne Johnson of the Chicago Foundation for Women, fear of public space and the notion that women cannot be safe in public spaces are deeply

engrained within our culture.

"Our culture has done a very good job of convincing women that we are unsafe in public space and that we should not go to certain places at certain times, where certain people might be present, and that if we follow those rules we'd be safe. I think that we are probably safer in public space, and those arbitrary forms of social control are lies." (Loukaitou-Sideris et al., 2009)

The ways in which cultural preconceptions about gendered space are instilled in women are varied. Many come from childhood, when

...girls are socialised into a restricted use of public space through observing both their parents' differential fears for them and the control of the spatial range of their activities in relation to boys...consequently most girls have mental images of places where strange men may approach them instilled at an early age. (Valentine, 1989a)

There is also news media, which tends to publicize major, violent crimes over "smaller" stories, organize news so that stories of violent crime come in succession, and selectively present information about the spatial and temporal context of violent crime, leading to impressions of crime waves and "dangerous" areas. (Valentine, 1989b) The force of these stories is amplified when people talk about them, creating a "ripple" effect throughout a community, as such stories are often framed as warnings, images of "dangerous" people or places to be avoided. (Ibid) This "social production of fear...tends to emphasize the threat women are facing in the public realm." (Loukaitou-Sideris et al., 2009) The effect is that women are socialized to feel vulnerable in public spaces, and to feel vulnerable to victimization from men, to give women

an illusion of control over other women and [cause women to] perceive a lack of control over men because of assumptions about the size and strength of each sex. This perceived lack of control over men becomes an actual lack of control as biological females learn to become women. Women as a gender are therefore pressurised to remain physically weak and incompetent. As a result women learn helplessness. (Valentine, 1989b)

The argument that women's greater fear of crime is due to perceived physical vulnerability to men is in a way self-proving. Through a continuing process of framing information about crime, gender, and space in ways that reinforce cultural notions of feminine vulnerability and the dangers of public space, women are continually reminded that public space is dangerous, and that avoidance is the best way to remain safe.

3. Transfer of Threat Appraisal and Mental Geographies

These varying sources of information, these social cues and images of dangerous places and people, as well as experiences with sexual harassment and other "ephemeral" acts of male violence, help characterize certain places and situations as dangerous, and contribute to women's fear of crime in public spaces. When understanding perceptions of safety in the built environment, it must be understood that

Such 'social cues' have been recognised as more important than the design itself...women rarely mention one (physical) without the other (social), and the social often offers the explanation as to why some physical places are especially frightening. (Koskela & Pain, 2000)

The process by which women identify "dangerous" places in order to avoid victimization is known as "transfer of threat appraisal." According to Valentine, women, having been taught to fear violence from unfamiliar men, "cannot be fearful of all men all the time, therefore in order to maintain an illusion of control over their safety they need to know where and when they may encounter 'dangerous men' in order to avoid them." (Valentine, 1989b) Sexual harassment experiences inform the transfer of threat appraisal process. Because sexual harassment is unpredictable, victims contextualize their experience by connecting them with the spaces, or types of spaces in which they occur,

Sexual harassment can be seen as a social incivility, albeit one intimately connected to gender; that symbolizes the presence of potential offenders rather than potential guardians in particular social contexts. Furthermore, sexual harassment should invoke feelings of sexual vulnerability and ultimately symbolize particular environments as dangerous and threatening. (Macmillan et al., 2000)

The result of this transfer of threat appraisal is what Valentine calls "geographies of fear," mental maps of safe and unsafe spaces. (Valentine, 1989a) This concept is useful in understanding how fear of sexual harassment and fear of crime influence how women use public space. Like transfer of threat appraisal, the creation of mental geographies is a coping mechanism, in which "[r]ather than feel unsafe everywhere, all the time, they reassure themselves that they can stay safe by avoiding the places they associate with violence, in particular places where they themselves have previously experienced danger." (Valentine, 1989b) Pain in particular notes that mental geographies vary

considerably, and that "fear of attack is one of the most influential constraints on women's freedom of movement in towns and cities." (Pain, 1997) Moreover, Pain ties these geographies directly to socially constructed gender roles,

[t]hese constraints reinforce notions about femininity and sexuality more generally: they preclude certain activities in public space, restrict independent mobility and police an unofficial code of 'appropriate' dress and behaviour. (Ibid)

Spaces considered unsafe vary widely by location, race, and socioeconomic status, but these factors effect the spatial distribution of fear, not the level of fear experienced. (Ibid) Unsafe spaces can include parks, bus stops, certain streets or neighborhoods, dark or dimly lit places, places where individuals have experienced harassment, or places they have heard are unsafe. (Fenster, 2005; Koskela & Pain, 2000; Pain, 1997; Valentine, 1989a; Viswanath & Mehrotra, 2007)Unsafe spaces are often context-specific. Parks, town centers, bars, and retail districts are generally considered safe during the day, but can become threatening at night. In studies conducted on mental geographies, references to darkness or night are a recurring theme when interview subjects describe unsafe spaces. The following quote is an example of a mental geography in the strictest sense.

"The park, for example, that's never safe. And down at the shops here, especially at night. And The Gunner [pub] - that should be closed down completely." - Barbara, thirties, unemployed, two children, Pilton, Edinburgh (Koskela & Pain, 2000)

Although the interviewee makes a reference to time ("especially at night"), she is primarily describing her mental geography in that she has explicitly identified three spaces that she considers completely unsafe. The inclusion of a park and a shopping area are particularly significant. These are spaces that are actively designed or encouraged by cities, and intended as safe public spaces, however, the interviewee has identified these areas as unsafe and best avoided. The following two interview quotes address the connection between night and mental geographies.

"I wouldn't go into town after dark, that's asking for trouble." - Whitley Single Mother (Valentine, 1989b)

"I wouldn't walk through the alley to the shops on my own after dark. I wouldn't put myself in a position where I would be at risk." - Whitley Single Mother Valentine, (Ibid)

These quotes again address specific spaces, but where the quote above identified spaces that are always unsafe, but especially so at night, these descriptions of unsafe spaces are conditioned by darkness. They are contextualized by nighttime, and in that context they are viewed as risky. The following quote identifies a contextualized mental map with even more specificity.

"In the town it's not too bad until 7 or 8 o'clock because there are still commuters coming off the trains but then you get a lot of gangs at night and you've got all the pubs being kicked out. I could never go into town at night unless I really had to." - Whitley Young Woman (Ibid)

Here, the public space in question, a downtown district, is essentially safe until nighttime. It becomes an unsafe space when it is conditioned by three factors: the presence of groups, the presence of visibly intoxicated people (implied by "pubs being kicked out"), and nighttime. Moreover, the interviewee contrasts "gangs" (the implication being groups of men) with "commuters." This raises an important factor in how socially incivil behavior is identified: unknown people in public space who appear to have a purpose, who appear to "belong," ie commuters, are nonthreatening, whereas people who do not have an obvious purpose are threatening. This notion of legitimacy in public space is hinted at in the following quote.

"The Avenue in my street is scary because there is only one exit to it, you can't leave it from everywhere. And there are benches where weird 'creatures' can sit and molest you and you feel trapped . . . so it is not so pleasant. If you get into the avenue you are lost ... it is really a male – planning, 'they' did it because of the transportation but it prevents me from walking in the avenue." - Rebecca, thirties, Jerusalem, 3 February 2000 (Fenster, 2005)

The connection between legitimacy in public space and socially incivil or threatening behavior, the kind of behavior that helps contextualize public space, is part of why parks and other public spaces designed as "informal" can be perceived as unsafe. The street design referred to by the interviewee above was likely designed to facilitate informal use of public space, an idealized park space after the New Urbanist model, yet the men who use the space in this way are seen as "creatures," they lurk, they are threatening.

References to darkness continue in descriptions of nonspecific unsafe spaces. These descriptions are not memories of spaces that have felt unsafe, or that are known to

be unsafe, but qualities that respondents consider to be signifiers of unsafety. These qualities are warning signs that trigger anxiety. Here, two patterns emerge: darkness and path-like spaces, rather than districts. Other qualities differed among responses, for instance references to enclosed and confining spaces are as almost as common as references to empty and isolating ones. Thus the limited space of an alleyway and the open space of a park would seem to have equal capacity to trigger anxiety. The common element of darkness is expressed in two forms: lack of lighting in the space's design, and the difference between a space's character during the day and at night. The following quotes represent path-like spaces, which are public but are not destinations in a strict sense. They are experienced as necessities, placed on mental maps between safer spaces and avoided if possible.

"I think the streets where there are only apartments and no display windows or other well-lit places are the most frightening ones." - Paula, twenties, sales secretary, no children, Kannelmäki, Helsinki (Koskela & Pain, 2000)

"I think that tunnels and such like are always nasty because they are so deserted that if something happens you cannot get help unless someone else just happens to be there." - Petra, thirties, nursery teacher, one child, Ruoholahti, Helsinki (Ibid)

"The thought of someone coming out of the dark [in an alleyway] and getting you it would be just terrible." - Whitley Single Mother (Valentine, 1989b)

"I mean if you knew no one would jump out of a dark alley and all the street lights worked it would be better and people would feel more able to go out because there wouldn't be anyone lurking." - Whitley Single Mother (Ibid)

The references to darkness, and in particular poor lighting, that appear in three of the above responses provide a visceral image of spaces made unsafe by context. Here, though, none of the interviewees refer to spaces that feel unsafe "only at night," or spaces that are "alright during the day." These spaces are permanently associated with a mental image of darkness and a perception of unsafety. The first quote describes an alienating landscape, as if it were designed to isolate. There are "only apartments...[no] well-lit places," the perception of space implied is one of being exposed and of lacking control or ownership of the space. The second describes pedestrian tunnels as "always nasty because they are so deserted." This is an example of transfer of threat appraisal: the respondent recognizes that these spaces are deserted, yet she still feels the threat of

harassment or assault because the space itself is threatening. The final two describe dark alleys, the archetypal unsafe path space. Again, these are spaces that are nonspecific, and are not even spaces in the sense that a park or a shopping district is a space, but are paths between spaces that are marked unsafe in mental geographies. The image of a dark alleyway carries the threat of harassment or assault by a stranger. An encounter with such a space, even if one has never seen that alleyway before and has no information about it upon which to base an assumption of danger, will trigger a heightened sense of fear.

The following two quotes describe non-path spaces that are still types of spaces, rather than specific known locations.

"[Parking garages are] just, you can't see into any of them, there's no lights into any of them and they're all dark. It's horrible anyone could be hiding there." - Whitley Young Woman (Ibid)

"I hate public toilets and other closed places. I mean nine times out of ten the lights don't work. It's like subways...anybody could attack you there, and nobody would see." - Whitley Young Woman (Ibid)

These two quotes contrast open spaces and confined spaces, but both carry similar associations with unsafety and fear of attack. Both respondents describe poor lighting and a feeling of vulnerability to attack by strangers, yet these spaces are completely different in their physical geometry. The connection between the two is that they are both perceived as threatening and categorized as types of unsafe spaces. This is a key component of mental geographies: the physical characteristics of a space are less important than its association with a feeling of unsafety and a lack of control over the space. The respondents' assertions that "anyone could be hiding there," or "anybody could attack you there and nobody would see" communicate a lack of control over the space, a sense that these are spaces in which one cannot be aware of one's surroundings. These perceptions are influenced by darkness, thus the references to poor lighting, but they are primarily conditioned by the process of creating mental geographies. These are types of spaces that are "known" to be dangerous.

Interviewing women in Helsinki and Edinburgh, Koskela and Pain found that *The fact that women were living in various neighbourhoods within the two cities with very different built environments made no difference to the likelihood of their reporting*

fear of attack, or identifying certain aspects of the built environment which frightened them. (Koskela & Pain, 2000)

Viswanath found that women in Delhi "fear that men would accost them in the dark while walking to the bus stop or walking home from the stop." (Viswanath & Mehrotra, 2007) Descriptions of potential harassers align closely with the "social incivilities" aspect of descriptions of transit spaces that are perceived as unsafe. These descriptions universally reference men, and though many do not give a specific description, implying instead a vague image of an unknown and unpredictable male harasser, two common elements of these descriptions are groups of men and visibly intoxicated men. The first, groups, implies an association of unsafe public spaces as spaces where perceptions of safety are influenced by a perceived lack of control, a sense that the space is dominated by potentially threatening men. The second, visible intoxication, communicates anxiety about men whose behavior is unpredictable. Both are referenced in the following response.

"In town there are a lot of drunks and they're frightening aren't they. I don't like walking past them at all you don't know what they're going to do." - Whitley Young Woman (Valentine, 1989b)

The respondent is describing a feeling of intimidation and lack of control that she ascribes to groups of visibly intoxicated men, essentially to social incivilities and unpredictable behavior, while simultaneously associating that feeling with a location in space, in this case a downtown district. Again, this is an example of transfer of threat appraisal, in which the feeling of being threatened is logically connected to the behavior of others, but the implication is that the space where this behavior occurs is considered unsafe. The association between an image of an attacker and mental geographies is made by the following respondent, this time in the form of an imagined scenario.

"A bloke attacking and grabbing you and either being sexually attacked or molested. The thought of someone coming out of the dark and getting you it would be just terrible. It does make you uncomfortable even walking down an alleyway in broad daylight." - Whitley Single Mother (Ibid)

In this case, the image of potential attackers is vague, just a general image of a man, but the implication is clear that a dark alleyway contains the threat of sexual harassment and

assault in the form of a potential attacker concealed within. She clearly associates the threat with the space itself, "it does make you uncomfortable even walking down an alleyway in broad daylight." The association between space and a mental image of a potential harasser/attacker creates a mental map of an unsafe space, and this association, this marking on the mental map, is permanently associated with that space.

In certain residential areas, the bus stop and sections of the road leading to the block were dimly lit and women often faced verbal harassment. (Viswanath & Mehrotra, 2007) Fenster found that women in both London and Jerusalem felt safe in their own neighborhoods, but could identify specific places - parks, certain streets, public transportation - where they felt uncomfortable and unsafe. (Fenster, 2005) Literally and figuratively, transit stops are the point at which public space and transit space intersect. Interview responses regarding transit spaces are perhaps the clearest illustrations of the similarities in how safety and fear of sexual harassment are perceived in public space and transit space.

"I feel OK walking. But at night when it's badly lit and there're lots of trees, then I do feel unsafe waiting for the bus" - older woman, bus user (Department for Transport, 2002)

The response above references darkness as a contextual influence on perceptions of safety at transit stops, but it also shows how transit stops foster feelings of vulnerability by placing transit users in a space that simultaneously restricts movement and leaves one exposed to the unpredictable and potentially threatening behavior of others. Waiting at a transit stop forces transit users to remain in one place, yet these are not monitored or protected spaces in the way that buses or trains are. Like parks and sidewalk benches, which are populated by people with no obvious legitimacy or belonging to that space, transit stops are places where people sit and wait, only in this case there is no option to walk past the bench or avoid the space. Transit stops are necessary unsafe spaces.

The common thread in each of these studies is that the development of mental geographies of safe and unsafe spaces is extraordinarily common among women, that this act of mental categorization of space is influenced by fears of harassment by men, and that these mental geographies place constraints on women's use of public space.

4. Fear of Harassment in Transit Spaces

Transit spaces are public spaces. They are particularly significant for their role in providing access to distant areas of cities, particularly in that they facilitate home-to-work travel, and they are significant in a discussion of fear in public spaces. (Levy, 2013) Transit spaces are finite spaces, where riders can feel "that they are confined within the system and restricted in their ability to cope with a dangerous situation." (Yavuz & Welch, 2010) The same factors that influence fear in non-transit public spaces - unfamiliar surroundings, close proximity to unfamiliar people, inability to control interactions - also influence fear in transit spaces. (Ibid) Yet, arguably, these fears and anxieties are amplified in transit spaces, where often riders are obligated to remain in the transit space or abandon their journey, and where close confines and a sense of exposure to other riders contribute to a sense of vulnerability and lack of control. As in the larger category of public space, "...gender emerges as the most significant factor related to anxiety and fear about victimization in transit environments." (Loukaitou-Sideris et al., 2009) And as with the design of public space, "women have too often been assumed to have identical [transit safety] needs to men's. However, it is clear that women have travel needs as significant as those of men and in many respects distinct from them." (Hamilton & Jenkins, 2000)

The data represented in Table 1 is taken from two studies. The first, published by the UK Department for Transport in 2002, surveyed subjects from throughout the UK on their perceptions of safety while using public transportation. The second is Yavuz and Welch's 2010 survey of Chicago urban rail users. Table 1 shows that in both cities, women and men generally feel safe while using public transportation. In the UK, only 13% of men or women feel that personal security while using public transportation is "rather poor" or "very poor." (Department for Transport, 2002) Likewise, Yavuz and Welch found that both women and men generally felt safe while using public transportation. When asked to rate their perceptions of safety while riding the train and while waiting for the train, both women and men rated safety between 3.5 and 4 (1 being poor and 5 being excellent), nor was there a statistically significant difference between

women's and men's answers. (Yavuz & Welch, 2010)

Subsequent questions asked in the UK survey address the influence of temporal context on perceptions of safety. In these cases, the percentage of women who feel "rather unsafe" or "very unsafe" while using transit, waiting at transit stops, or walking between home and transit after dark is universally about twice that of men. (Department for Transport, 2002) Chicago train users, both men and women, feel positively about their safety from crime while riding the train, yet the difference in mean answers (2.99 for women and 3.74) is the greatest of any of the questions listed in Table 1. Yavuz and Welch found almost identical rates in problem occurrence while using transit among men and women, yet women consistently reported feeling less safe, particularly from crime. (Yavuz & Welch, 2010)

Table 1: Perceptions of Safety While Using Public Transportation

UK: (Department for Transport, 2002) Chicago: (Yavuz & Welch, 2010)	Women				Men			
	Pct.	Mean	Std. Dev.	N	Pct.	Mean	Std. Dev.	N
UK: Personal security while using public transportation rated as 'rather poor' or 'very poor'	13%	X	X	977	13%	X	X	832
UK: Feel 'very unsafe' or 'rather unsafe' while waiting at the bus stop after dark	49%	X	X	977	20%	X	X	832
UK: Feel 'very unsafe' or 'rather unsafe' while waiting at the underground station after dark	61%	X	X	977	32%	X	X	832
UK: Feel 'very unsafe' or 'rather unsafe' while traveling on the bus after dark	40%	X	X	977	18%	X	X	832
UK: Feel 'very unsafe' or 'rather unsafe' while traveling on the underground after dark	60%	X	X	977	32%	X	X	832
UK: Feel 'very unsafe' or 'rather unsafe' while walking from home to the stop/station after dark	48%	X	X	977	20%	X	X	832
UK: Feel 'very unsafe' or 'rather unsafe' while walking from the stop/station to home after dark	59%	X	X	977	25%	X	X	832
Chicago: Safety from crime where I get on and off the train (rating, 1=poor, 5=excellent)	X	3.64	1.15	649	X	3.72	1.13	486
Chicago: Personal safety at train stations related to the behavior of other passengers (rating, 1=poor, 5=excellent)	X	3.52	1.20	657	X	3.72	1.13	486
Chicago: Personal safety on the train related to the behavior of other passengers (rating, 1=poor, 5=excellent)	X	3.51	1.19	654	X	3.58	1.17	483
Chicago: Safety from crime while riding the train (rating, 1=poor, 5=excellent)	X	2.99	1.34	641	X	3.74	1.14	482
Chicago: Problem occurrence: safety from crime where I get on and off the train (0=no, 1=yes)	X	0.12	0.331	649	X	0.1	0.299	486
Chicago: Problem occurrence: personal safety at train stations related to the behavior of other people (0=no, 1=yes)	X	0.15	0.354	657	X	0.13	0.341	483
Chicago: Problem occurrence: personal safety on the train related to the behavior of other passengers (0=no, 1=yes)	X	0.18	0.384	654	X	0.15	0.360	483
Chicago: Problem occurrence: safety from crime while riding the train (0=no, 1=yes)	X	0.11	0.317	642	X	0.1	0.294	482

The data presented in Table 2 repeats some data from Table 1, but adds data from the 1993 Violence Against Women Survey (VAWS), a study of 12,300 women from across Canada, Pain's (1997) study of women in Edinburgh, and Stringer's (2007) survey of New York City subway riders. The data in Table 2 compares women's perceptions of safety and fear of crime in public spaces across these four studies. Here again, findings differ across studies, and some findings border on contradictory. Each study finds that women perceive transit spaces and public spaces as relatively safe, or at least relatively low-risk. Yet, significant numbers of women felt unsafe riding transit after dark, waiting for transit after dark, or walking to or from transit stops after dark. Significantly, Pain found that 68.7% of women surveyed in Edinburgh were "very worried" or "fairly worried" about sexual assault in public by a stranger, more than 59% who were worried about physical assault. (Pain, 1997) Meanwhile, Stringer found that 51% of women in New York City felt the threat of sexual harassment or assault "sometimes or frequently." (Stringer, 2007)

Table 2: Women's Perceptions of Safety in Public Space and On Transit

Chicago: (Yavuz & Welch, 2010) Canada: (Macmillan et al., 2000) Edinburgh: (Pain, 1997) NYC: (Stringer, 2007) UK: (Department for Transport, 2002)	Pct.	Mean	Std. Dev	N
Chicago: Safety from crime where I get on and off the train (rating, 1=poor, 5=excellent)	X	3.64	1.15	649
Chicago: Personal safety at train stations related to the behavior of other passengers (rating, 1=poor, 5=excellent)	X	3.52	1.20	657
Chicago: Personal safety on the train related to the behavior of other passengers (rating, 1=poor, 5=excellent)	X	3.51	1.19	654
Chicago: Safety from crime while riding the train (rating, 1=poor, 5= excellent)	X	2.99	1.34	641
Canada: How worried are you when walking alone in your area after dark? (rating, 1='very worried,' 3='not at all worried.'	X	2.27	0.66	12,300
Canada: How worried are you waiting for or using public transportation after dark? (rating, 1='very worried,' 3='not at all worried.'	X	2	0.7	12,300
Edinburgh, UK: Respondents who were 'very worried' or 'fairly worried' about sexual assault outside by a stranger	68.7%	X	X	380
Edinburgh, UK: Respondents who were 'very worried' or 'fairly worried' about physical assault outside by a stranger	59%	X	X	380
NYC: Respondents who felt the threat of sexual harassment or assault "sometimes" or "frequently" while using the New York City Subway	51%	X	X	949
UK: Personal security while using public transportation rated as "rather poor" or "very poor"	13%	X	X	977
UK:Feel 'very unsafe' or 'rather unsafe' while waiting at the bus stop after dark	49%	X	X	977
UK:Feel 'very unsafe' or 'rather unsafe' while waiting at the underground station after dark	61%	X	X	977
UK:Feel 'very unsafe' or 'rather unsafe' while traveling on the bus after dark	40%	X	X	977
UK:Feel 'very unsafe' or 'rather unsafe' while traveling on the underground after dark	60%	X	X	977
UK:Feel 'very unsafe' or 'rather unsafe' while walking from home to the stop/station after dark	48%	X	X	977

Stringer's report on the New York City subway system found that 69% of women respondents reported having felt the threat of sexual harassment at one time or another while riding the subway. (Stringer, 2007) Valentine cites a 1986 Greater London Council survey that found that 30% of women respondents had been attacked, or knew of someone who had been attacked, while traveling, and that fear of attack on public transportation, particularly at night, was a major concern for most women. (Valentine, 1989b) Yavuz and Welch found that, while the women who participated in their survey of Chicago train riders did not have statistically significantly greater levels of fear than men, they did report that their perception of safety on public transit was influenced by the same factors as perceptions of safety in public space: "social incivilities," and "the disorderly behaviour of other people—such as being loud, public drinking or panhandling at train stations and on trains." (Yavuz & Welch, 2010) Viswanath found that women in Delhi experienced "lewd comments from bus drivers and their companions, or loud suggestive music, and [harassment] from male passengers" when using public transportation. (Viswanath & Mehrotra, 2007) These findings vary in their specifics, but they form an image of transit spaces as public spaces like any others: full of unfamiliar people, invasive or disturbing behavior, and often sexual harassment.

Interview responses show striking similarities in narratives surrounding transit spaces and harassment. Transit spaces are seen as unsafe, especially after dark, characterized by social incivilities, marked by memories of harassment, and best avoided where possible.

"Public transportation is full of gangs of kids, people are drunk especially after football matches. When men are together they become aggressive and late at night when trains are empty it is scary." - Suna, forties, Egyptian–Mediterranean, London, 29 July 1999 (Fenster, 2005)

"I have felt unsafe due to either a person who seemed like they were drunk, on drugs, homeless, or sick. I have also felt insecure due to large groups of guys. They never really interacted with me but their presence was a little worrisome. Because I am a choice rider, when I have felt insecure about public transit, I begin to drive my car again." - American woman (Hsu, 2010)

The response from London shows three major factors that influence fear of harassment

on public transit: nighttime, men in groups, and social incivilities such as public intoxication. The "gangs of kids," public drunkenness and groups of aggressive men are behavioral warning signs that trigger anxiety and fear of sexual harassment or assault. Yet the respondent mentions these behaviors, these warning signs, as part of a description of public transit. She is not describing the men who make her uncomfortable, she is describing a space that is made dangerous by the presence of such men. This is an example of transfer of threat appraisal. The threat comes from "gangs of kids" and groups of aggressive men, but the description is of the transit setting and the anxiety is ascribed to that space. The response from Hsu's study used the words "insecure" and "worrisome," and this implies an important distinction: fear of harassment on public transit is not fear in the sense of dread, a sense that one is about to be harassed. It is a diffuse anxiety about a situation and a setting. It is a feeling of being "insecure" while riding, and it is enough to influence travel behavior, as when Hsu's respondent switched to driver her car because transit no longer felt safe.

The influence of social incivilities plays a role in the process of transfer of threat appraisal. In the case of the following interview respondent from Reading, UK, socially incivil behavior characterizes a transit space by virtue of the respondent expecting such behavior as a characteristic of the transit space.

"I hate trains, I hate being enclosed...I mean if I got in a train where there was a carriage for six people and there was just me and a man I'd get off" - Lower Earley Young Woman (Valentine, 1989b)

The respondent describes a situation in which a transit space can become unbearable, or unsafe enough to leave, by the addition of a threatening presence. This illustrates that threatening presences can dominate otherwise "neutral" spaces by making the space seem as threatening as the person or behavior that inhabits it.

Yavuz and Welch found that among Chicago train riders, women felt less safe than men while riding trains, but the difference was not statistically significant. However, they also found that reactions to security measures differed more significantly between genders. Many transit operators use security cameras to monitor transit spaces and to give riders a sense of formal surveillance and security. According to Yavuz and Welch, this

strategy works well for men, who "...may value the presence of video cameras more because it may reduce men's perceived vulnerability by reminding them that somebody is watching and everything is under 'control'." However, the response from women respondents, while positive, was less strong, and Yavuz and Welch theorize that "...women are less supportive of technological solutions than the presence of staff or security personnel to improve safety, because they feel more vulnerable to victimisation when nobody is around and because they tend to be more skeptical that somebody is watching the video camera surveillance," and moreover, their findings indicate that "...female passengers who had experienced safety-related problems in the train system tend to perceive the train to be less safe than male passengers who had safety-related problems in the train system." (Yavuz & Welch, 2010) Loukaitou-Sideris et al, in a survey of American transit operators, found similarly lukewarm responses from women riders, despite the fact that security cameras were the most commonly used and most-noticed security measures among the transit systems studied. (Loukaitou-Sideris et al., 2009)

This points to one of the most significant problems in understanding perceptions of safety and fear of sexual harassment on public transit: underreporting. As in non-transit spaces, sexual harassment is "normalized," considered to be a cultural fact and not a problem to be addressed. Stringer found that only 4% of women who had experienced sexual harassment on the NYC Subway System, and only 14% of those who had been sexually assaulted reported the incident to the police or to transit operators. (Stringer, 2007) Stringer found that this was

...due to a combination of factors including the absence of transit authorities at the scene of the incident, the "normalization" of acts of harassment, and the belief that authorities will not be able to apprehend the perpetrator or otherwise provide assistance. (Ibid)

In light of Yavuz and Welch and Loukaitou-Sideris et al's findings regarding women's faith in electronic security measures, the dramatic underreporting of sexual harassment and assault in transit spaces found by Stringer is a reminder that "gender neutral" approaches to safety and security in public spaces fail to take into account perceptions of safety, and fail to address women's transit safety needs. Table 3 compares women's

experiences with sexual harassment and assault across four studies, the Canadian VAWS (Macmillan et al., 2000), Yavuz and Welch's (2010) Chicago study, Pain's (1997) study, Stringer's (2007) study, and the UK Department for Transport's study (Department for Transport, 2002).

Table 3: Women's Experiences with Sexual Harassment and Assault

Canada: (Macmillan et al., 2000) Chicago: (Yavuz & Welch, 2010) Edinburgh: (Pain, 1997)	Pct.	Mean	Std. Dev.	N
Canada: Respondents who report having been followed by a man in a way that frightened them	32%	X	X	12,300
Canada: Respondents who report receiving unwanted attention from a male stranger	60%	X	X	12,300
Canada: Respondents who report having had a man expose indecently expose himself to them	18%	X	X	12,300
Chicago: Problem occurrence: safety from crime where I get on and off the train (0=no, 1=yes)	X	0.12	0.331	649
Chicago: Problem occurrence: personal safety at train stations related to the behavior of other people (0=no, 1=yes)	X	0.15	0.354	657
Chicago: Problem occurrence: personal safety on the train related to the behavior of other passengers (0=no, 1=yes)	X	0.18	0.384	654
Chicago: Problem occurrence: safety from crime while riding the train (0=no, 1=yes)	X	0.11	0.317	642
Edinburgh, UK: Respondents who report being followed	49.8%	X	X	380
Edinburgh, UK: Respondents who report being flashed at	33.5%	X	X	380
Edinburgh, UK: Respondents who report being touched up	38.3%	X	X	380
Edinburgh, UK: Respondents who report being leered at	64.8%	X	X	380
Edinburgh, UK: Respondents who report unwanted sexual comments	76.4%	X	X	380
New York: Respondents who report having been sexually assaulted in the New York subway system	10%	X	X	484
New York: Respondents who report having been sexually harassed in the New York subway system	63%	X	X	484
UK: Respondents who report having been sexually assaulted, sexually harassed, or having been indecently exposed to on public transportation in the UK	8.01%	X	X	977

Here, the questions asked in different studies are not identical, but can be arranged into loose categories. Stringer's finding that 63% of respondents had been sexually harassed (Stringer, 2007) differs from the UK study's finding that 8.01% of women had been sexually harassed while using transit (Department for Transport, 2002), and Yavuz and Welch's findings regarding problem occurrence among women respondents while riding the train. (Yavuz & Welch, 2010) These low rates of occurrence are closer to Stringer's finding for sexual assault on public transit. (Stringer, 2007) While Yavuz and Welch did not specifically ask about sexual harassment, it is likely that at least some of their respondents had experienced sexual harassment while riding the train, and that memories of these experiences factored into their answers. Yavuz and Welch's low mean answers, because they refer to yes or no questions, can be taken as percentages, from 11% to 18%, and seem to correspond roughly with the UK study. Pain's Edinburgh study and the VAWS are not specific to transit spaces, though they do address sexual harassment more specifically than Yavuz and Welch. Corresponding questions in these categories yield similar answers: 60% of Canadian respondents report having received unwanted attention from a male stranger (Macmillan et al., 2000), while 64.8% of Edinburgh respondents reported being leered at, 76.4% reported unwanted sexual comments, and 38.3% reported being touched inappropriately by a stranger. (Pain, 1997) 32% of Canadian respondents report being followed by a man in a way that frightened them (Macmillan et al., 2000), while 49.8% of Edinburgh women report being followed. (Pain, 1997)

The issue of perceptions of safety in transit spaces is again complicated by strong evidence that transit spaces themselves may not be the most "unsafe" spaces. Loukaitou-Sideris et al find that "...passengers are typically more fearful during their journeys to and from the stop or station and during their wait for the bus or train than when they are on the transit vehicle," (Loukaitou-Sideris et al., 2009) and moreover that,

The use of various safety and security strategies is very low at bus stops [compared to buses themselves], even though most passengers (and especially women) report greater levels of anxiety and fear waiting for the bus than riding on a transit vehicle. Most

[transit operators surveyed] indicated that they do not employ particular strategies at their bus stops. (Ibid)

Some of this is cultural and dependent on the city in question. Hsu found that,

When asked what types of sexual harassment are most likely to occur on transit, Americans said accosting or crazy people and Taiwanese said groping and unwanted touch. When asked what kinds of transit spaces they most fear, Americans said empty bus stops or transit stations and Taiwanese said crowded buses or subways. (Hsu, 2010)

A study conducted by the UK Department for Transport found that while a significant number of women felt "very unsafe" or "rather unsafe" using public transit, especially at night, the number of women who felt "very unsafe" or "rather unsafe" waiting for a particular form of transit was at least slightly higher than the number who felt unsafe while riding transit. (Department for Transport, 2002) Viswanath found that in Delhi, where most public transit users are low-income, women faced sexual harassment and feelings of anxiety and fear both at bus stops (especially at night) and while riding public transit. (Viswanath & Mehrotra, 2007)

The difference between non-transit public spaces and transit spaces is closely tied to class and necessity of use. Members of all socioeconomic groups use public space to some degree, yet public transit — except perhaps in very large cities such as New York or London, where efficient and well-developed transit systems make transit journeys a favorable choice even for those with other options — is generally avoided by those with access to private cars. This alters the concept of "geographies of fear" somewhat. Instead of safe spaces and unsafe spaces, there is a third category, what might be called "necessary unsafe spaces." These are transit journeys that cannot be avoided, or bus stops that feel unsafe but are the only available option. A woman who is harassed on her journey to work cannot leave the bus until it stops, and even then if service is not frequent enough, she would face the repercussions of being late. (Levy, 2013; Loukaitou-Sideris et al., 2009; Viswanath & Mehrotra, 2007) Levy criticizes the notion of travel choice as

...based on an implicit assumption that ...individual decision-making is made in a social vacuum.' It does not recognize at least three critical issues central to transport and transport planning, namely the different social positions and multiple identities of

transport users; the social construction of space, public and private; and the politics of transport in the context of social relations. (Levy, 2013)

Transit spaces, as sources of fear and anxiety, foster mental geographies of unsafe spaces and limited options. Women who feel unsafe using public transit

...utilize precautionary measures and strategies that affect their travel patterns. These range from the adoption of certain behavioral mechanisms when in public, to choosing specific routes, modal choices, and transit environments over others, to completely avoiding particular transit environments and activities (e.g., walking, bicycling) deemed as more unsafe for women. (Loukaitou-Sideris et al., 2009)

These coping mechanisms are responses to a transit system that is unsafe, but unavoidable. Stringer notes that for many women, enduring an unsafe transit space is an accepted fact, "[i]ndeed, the threat of sexual harassment and assault in the subway system is so engrained that it is second-nature for many female riders to remind friends to be careful and exchange wishes for a safe trip home." (Stringer, 2007) Yet the necessity of using public transit does not always outweigh the risks, and recognizing the social dimension of travel choice, the influence of fear and perception of safety, is essential to operating an effective transit network. Simply put, "transit crime affects people's decisions to use public transportation. Acts and perceptions of violence cause loss of ridership and revenue." (Loukaitou-Sideris et al., 2002)

5. Coping Strategies

In public space, both transit and non-transit, the geographies of fear created by fear of sexual harassment drive women to adopt a range of coping strategies to avoid unsafe spaces and situations when they can, and maintain a sense of control and security when they cannot. Valentine identifies three broad categories of coping strategies: "...time/space avoidance strategies, environmental awareness strategies and physical defense strategies." (Valentine, 1989b) Time/space avoidance strategies include avoiding unsafe spaces, or avoiding certain spaces at times when they are perceived to be unsafe (such as after dark), or simply "reapprais[ing] their need to go out, either by "choosing" to stay in, or by denying to themselves that they want to go out." (Ibid) Environmental awareness strategies involve

...scanning the environment for clues to danger such as a rustle in the bushes or listening for the approach of footsteps...most women, especially at night, have a heightened consciousness of the micro design features of their environment. (Ibid)

and physical defense strategies involve

adjust[ing] their physical appearance and possessions in order to deter assailants, to facilitate their escape from threatening situations and to resist assault...many [women surveyed] consciously carry everyday objects (including knives, combs, darts and scissors) with the intention of using them as weapons to defend themselves. (Ibid)

Loukaitou-Sideris et al identify a fourth category, behavioral modification. Specifically, women "manufacture legitimacy for their presence in public spaces. Purposeful jogging, walking the dog, or waiting for the bus at the bus stop are viewed as more legitimate activities in public spaces than "aimlessly" waiting at a street corner." (Loukaitou-Sideris et al., 2009) In transit spaces, similar strategies might involve wearing headphones, texting, or reading in order to avoid unwanted advances or conversations.

Avoidance-based coping strategies are particularly relevant to planners, as they influence women's use of public space by restricting it. They are reactions to mental maps based on negative perceptions of safety in certain spaces or types of spaces. The following interview responses hint at the relationship between mental maps and avoidance.

"You subconsciously avoid certain places, not necessarily because you would be afraid but because you've got an unpleasant image of them." - Minna, twenties, waitress, no children, Olari, Helsinki [Metropolitan Area] (Koskela & Pain, 2000)

"I don't put myself in the sort of situations where I'd be attacked, I mean I wouldn't dream of walking down a dark alley or whatever." - Lower Earley Married Woman (Valentine, 1989b)

"If I know a place is dangerous I just won't go there. It's as simple as that. You just don't put yourself in a situation where there's not many people around, or you know for a fact that area is dangerous. You just keep well away" - Whitley Single Mother (Ibid)

The three interviewees quoted above cite mental maps of dangerous spaces as strong influences on where they will or will not go. The first quote is the most succinct, describing an "unpleasant image" of dangerous spaces. Not a feeling of fear, but a sense that avoiding a certain space or type of space is preferable to having to occupy it. The

second quote references a dangerous "situation" but instead describes a space, a dark alley. She has identified a projected dangerous situation with an identifiable image of a dangerous space, something she can put on a map and avoid. The third quote refers to two methods of developing mental maps: recognizing signs of dangerous spaces, ("there's not many people about") and prior knowledge ("you know for a fact that area is dangerous"). Both methods lead to avoidance, and again the interviewee describes a space but refers to a situation. The distinction between the two is meaningless in practice, but the reason they are linked is that a situation is unpredictable, but a space is avoidable. Mental maps and avoidance are a form of coping with the threat of sexual harassment and assault by attempting to assert control over one's environment. This theme of control asserts itself throughout the various studies analyzed here despite a wide range of qualities ascribed to dangerous spaces on mental maps.

"I wouldn't go for hill walks and things like that on my own. And things like walking along the canal bank, it sounds very nice, but you are very isolated." - Myra, forties, dental nurse, two children, Corstorphine, Edinburgh (Koskela & Pain, 2000)

"I mean I don't think 'gosh that's a place I'd never go,' but I would tend to plan my routes around better lit areas rather than anything else. And areas where there's not likely to be about twenty yobs who've failed to score coming out at one time." - Elaine, forties, bank manager, no children, Haymarket, Edinburgh (Ibid)

The responses above indicate the range of indicators that can cause a space to be perceived as unsafe and become avoided. The first references isolation, an open space. The interviewee refuses to use these spaces alone, although she would like to. The second response describes crowded spaces, superficially the opposite of the first. The common thread in these two descriptions is that the interviewees are describing spaces where they feel a lack of control. In the first, that lack of control comes from feeling exposed and isolated, from feeling alone. In the second, that lack of control comes from a feeling that the space is controlled by others whose behavior is unpredictable and who are seen as potential harassers or attackers.

While Valentine developed these categories to describe strategies designed to avoid sexual assault in public spaces, women adopt similar strategies to avoid sexual harassment as well as assault in transit spaces. Hsu's study of women in California and

Taiwan found that women in both countries adopted a wide range of coping strategies specific to transit spaces,

Some participants get off the transit and wait for the next one, some leave the situation and go to safer spaces in the carriage or station, some sit and stand only by women, some use a bag or backpack to avoid unwanted touch, some ride transit with friends, some do not ride transit after dark, and some avoid bus and transit that pass through areas with high crime rates. Therefore female nonchoice riders do modify their use of transit in minor ways. Even those interviewees who reported never being harassed said they are watchful and make the same minor changes to avoid sexual harassment on transit. (Hsu, 2010)

Notably, Hsu finds that whether or not a woman has been sexually harassed is not a factor in her decision to use some form of coping strategy to feel more secure while using transit. Here again, it is the perception of a space as unsafe — the perceived risk of crime rather than crime itself — that motivates a feeling of vulnerability.

The most important aspect of transit space coping strategies is travel choice. As noted by Valentine, time/space avoidance strategies in a transit context can simply mean choosing to avoid going out, what Pain calls a "virtual curfew" (Pain, 1997). For those with access to a private car, this can mean avoiding transit spaces altogether or for certain journeys, however those women who do not have access to private transportation "face a form of motivational economics, weighing up their need or desire to go out against their willingness to adopt such "risky" coping strategies [as physical defense]." (Valentine, 1989b) However, transit is often a necessity, and strictly avoiding transit may not be a realistic possibility. Therefore, coping strategies in transit settings are conditioned by an individual's transportation options. The following interviewees represent two types of transit coping strategies when a bus stop is considered an unsafe space.

"I normally stand where I can be seen rather than by the bus stop because it's a bit dark there. So I stand and you can see the bus coming anyway, so when the bus is getting closer I'll cross over to the bus stop." - Whitley Young Woman (Ibid)

"If I didn't have a car without a doubt my movements would be curtailed at night because I wouldn't walk, or for that matter wait at a bus stop on my own at night." - Lower Earley Married Woman (Ibid)

The first response describes finding a way to avoid the dark, exposed space by choosing to wait for the bus in a space the respondent feels less vulnerable in. The second describes

choosing to avoid unsafe transit spaces, in particular bus stops, when possible. In both cases, feelings of vulnerability at bus stops affect travel behavior, even to the degree of influencing mode choice against using public transit. The second respondent is able to use a car, and therefore avoids the bus at night, even though it is specifically the bus stop that she feels is unsafe. Her characterization of transit stops as unsafe has characterized her travel behavior by causing her to avoid public transit at night entirely. In the case of the first respondent, she is presumably unable to avoid using public transit, so she has opted to avoid the transit stop specifically, and to occupy that space for as little time as possible. Both can be considered avoidance strategies, though one is limited by the necessity of using transit.

The connection between fear of harassment and avoidance as a coping mechanism is as true on public transit as in public space. Pain's data, seen in Table 4, shows that 70.7% of women in Edinburgh report that they avoid certain types of transportation due to fear of sexual attack and 84.8% choose certain types of transportation due to fear of sexual attack.

Table 4: Influence of Fear of Sexual Attack (Pain, 1997)

	Pct.	N
Edinburgh, UK: Respondents who 'always' or 'sometimes' do not go out because of fear of sexual attack	8.9%	389
Edinburgh, UK: Respondents who 'always' or 'sometimes' do not go out alone because of fear of sexual attack	35.0%	389
Edinburgh, UK: Respondents who 'always' or 'sometimes' put off routine calls because of fear of sexual attack	10.8%	389
Edinburgh, UK: Respondents who are 'always' or 'sometimes' watchful when walking because of fear of sexual attack	84.6%	389
Edinburgh, UK: Respondents who 'always' or 'sometimes' avoid certain areas or streets because of fear of sexual attack	83.3%	389
Edinburgh, UK: Respondents who 'always' or 'sometimes' avoid certain types of transport because of fear of sexual attack	70.7%	389
Edinburgh, UK: Respondents who 'always' or 'sometimes' choose certain types of transport because of fear of sexual attack	84.8%	389
Edinburgh, UK: Respondents who report that fear of sexual attack affects their social life	76.9%	389
Edinburgh, UK: Respondents who report that fear of sexual attack affects their leisure activities	53.6%	389
Edinburgh, UK: Respondents who report that fear of sexual attack affects their working life	41.6%	389

Data from the UK survey shown in Table 5 indicates that having experienced an incident of harassment significantly increases transit users' fear while using transit. Moreover, data from the UK survey shown in Table 6 shows that while women and men identify as "public transport user[s] [with] no fears" in similar percentages, women identify as having "some fears" about public transit at a significantly higher rate than men, and women who are not transit users report a slightly lesser degree of willingness to use public transit if personal safety improved.

Table 5: Incident Experience and Attitude Towards Transit in the UK (Department for Transport, 2002)

	User and no fears.	User and some fears.	Might use, if happy about personal security.	Do not use, but would if other things improved.	Do not and would not use.
experienced no incidents when using pt	48%	28%	10%	9%	5%
experienced one or more incidents using pt	36%	47%	9%	4%	4%

Table 6: UK Attitudes Toward Public Transit (Ibid)

	Women		Men	
	Pct.	N	Pct.	N
Public Transport user and no fears	44.29%	977	47.86%	832
Public transport user and some fears	37.86%	977	27.86%	832
Might use public transport, if happy about personal security	7.86%	977	10.71%	832
Do not use public transport, but would if other things improve	5.00%	977	6.43%	832
Do not and would not use public transport	9.29%	977	9.29%	832

Tables 4-6 illustrate attitudes toward transit and public space in two studies, the UK Department for Transport study, and Pain's (1997) Edinburgh survey. Table 6 compares willingness to use public transit among UK men and women, Table 5 does not include gender as a variable, but compares willingness to use public transportation with previous experience with incidents on public transit, and Table 4 shows the ways in which Edinburgh women's daily lives are affected by fear of sexual attack. (Department for Transport, 2002; Pain, 1997) The most significant gender difference is in the user and some fear category (37.86% of women and 27.6% of men), while other categories show little difference between genders. (Department for Transport, 2002) Whether or not a respondent has experienced some sort of incident while using transit seems to have a greater effect on fear, though not on their willingness to use transit. (Ibid) However, this

is somewhat contradicted by Pain's findings. A significant percentage of Edinburgh women report altering their behavior in some way due to fear of sexual attack, whether it be not going out alone (35%), being "watchful," (84.6%), or avoiding certain types of transportation (70.7%). Most significantly, 84.8% report that fear of sexual attack "always" or "sometimes" influences their travel mode choice.

Quantitative data on women's perceptions of safety as a concern when considering mode choice indicates a wariness of public transit. This is borne out by interview responses.

"If I'm going somewhere in Reading I'll never use public transport, if I'm going on my own I'll drive or I'll take a taxi." - Lower Earley Young Woman (Valentine, 1989b)

"We all drive so you're not susceptible are you, not like if you're walking or on a bus." - Lower Earley Single Woman (Ibid)

"I didn't change [my] use of transit [after being harassed] since that's almost the only bus I could take. However, I always gladly take a ride from others when I got the chance to avoid this." - (Taiwanese) (Hsu, 2010)

The responses above all indicate a general distrust of transit and a preference for other modes, in particular driving. This is common throughout the interview responses analyzed here. Transit is seen similarly to an unsafe space on a mental map. It is to be avoided if possible, while the controlled space of a private car is seen as preferable. The third response refers to transit use as an uncomfortable necessity. The interviewee was harassed while using transit, but she has no other readily available mode choice. The coping mechanism of avoidance is not always available to her, but she stresses that she takes every opportunity to avoid public transit, as taking that bus, being in that transit space, is always perceived as unsafe.

As with unsafe public spaces, the perceived unsafe nature of transit is often conditioned by time of day, with night being particularly unsafe.

"I don't get on buses, or go into town or anything at night. I used to years ago, but not now." - Whitley Married Woman (Valentine, 1989b)

"If I go anywhere in the evening, if I go on the bus I go with someone, always If I go on public transport I go with somebody or I get a lift so I don't travel on my own, I very rarely go anywhere on my own...I think it's sad that you've got to be aware like that that there are these people around, and you can't, that you haven't got the freedom to go out

and feel safe. I think it's quite sad really, cos you just can't go out anymore and be safe." - Lower Earley Young Woman (Ibid)

The first respondent quoted above has cut public transit completely out of her life even though she recognizes that this choice has limited her access to the city. She does this not because the bus would not take her to her destination, but because she does not consider public transit a safe or viable option. The second respondent does not cope with the threat of harassment by avoiding transit completely, but instead chooses to avoid transit spaces when alone. This is not the self-imposed curfew of the first response, but is effectively a form of avoidance because her use of transit space is influenced by perceptions of safety and conditioned by her ability to find someone to travel with in order to feel safe. These are the transit equivalents of mental maps, in which one's area of access in a city is limited by perceptions of safety. These mental transit maps can be geographical or temporal, and they can also limit certain types of activities.

"I mean my car's in the garage this week and as it's dark when they come out of swimming and because I haven't got any means of bringing them back they'll [interviewee's children] have to miss it." - Lower Earley Married Woman (Ibid)

"I go out one evening a week to a knitting club, but it's with a friend and I always drive. If I didn't have the car I just wouldn't go. It's as simple as that." - Lower Earley Married Woman (Ibid)

The responses quoted above reference specific activities curtailed by the respondents' perceptions of safety and limited mode choices. The first describes limitations to where she will take her children without a car, while the second describes a leisure activity that she cannot participate in unless personal car use is available to her.

The social construction of women's fear of crime in public spaces is a self-sustaining cycle, a process as much as a fact. Women are socialized from a young age to feel vulnerable, to fear men, and to associate public spaces with danger. This socialization is reinforced by experiences of sexual harassment, which carry implicit reminders of the threat of greater violence, experiences which are normalized as "men being men," which feeds feelings of vulnerability and helplessness. Media images of crime, violence, and "dangerous" places are amplified by repetition and turn to warnings about where not to go, how not to act, whom to avoid. Fear of attack becomes fear of dangerous places, and

public space is sorted into safe and unsafe spaces. Women learn to live with mental maps of where to go and where not to go, adopt coping strategies, avoid certain places and certain journeys, whether at certain times or at all. Geographies of fear and coping strategies are shared as warnings and by example to friends and daughters. And on and on.

6. Right to the City

These coping strategies, this process of socially constructed geographies of fear, is particularly harmful in the context of public transit. When it is a choice, not of whether or not a place is safe, but an entire journey, the choice can effect women's access to employment, social networks, and the resources of a city. In this way, fear of sexual harassment on public transit is directly harmful to women's Right to the City. Access to public transit is one of the most important aspects of the Right to the City,

...a critical system in the city, which, through providing access to essential activities, enables diverse women and men, girls and boys to 'appropriate' their right to the city and to realize a fully rounded and substantive urban citizenship. (Levy, 2013)

It is also "...an essential part of women's lives: it determines access to a wide range of resources including employment, child care, education, health and the political process," (Hamilton & Jenkins, 2000) and in the case of low-income women particularly,

[t]ransport...plays a significant role in either exacerbating or ameliorating the relative disadvantage of women...[p]oor transport options limit access to employment and social support networks, and to health, recreational and sports facilities, restricting both quality of life and 'life chances'. (Ibid)

Unfortunately, travel choice and access to transportation are too often seen only in spatial and economic terms, while the social aspect of travel choice is ignored. (Levy, 2013) Fear of sexual harassment in transit spaces, and the effect of perceptions of safety on travel choice are critical aspects of this social dimension of travel choice, and

...women's fear of transportation facilities – such as parking structures, buses, train cars, and bus stops...affects the way women engage in travel, and may [degrade their] ability to move carefree from origin to destination without worrying that a 'wrong choice' of mode, transit setting, or time of travel would have consequences for their safety. (Loukaitou-Sideris et al., 2009)

Though transportation planning is seen as "gender neutral," the exclusion of a social dimension from planning approaches and the failure to address women's transportation needs in general and perceptions of transit safety in particular ensure that such planning approaches will inevitably fail, that cities will remain male spaces. The obstacles women face in using public space and public transportation are unique,

[t]he fear and insecurity that women face in accessing public spaces prevents them from availing the benefits of being an urban citizen. They are not seen as legitimate users of the space, except at certain times and for certain activities. (Viswanath & Mehrotra, 2007)

The striking thing about the failure of transportation planning to meet women's safety needs is that safe, efficient public transportation is such a simple, fundamental part of how cities provide for their citizens, and yet transit spaces are looked upon almost universally by women as suspect, and women often feel unable to take advantage of public transportation without taking on considerable risk. There is broad agreement in the body of research summarized here that women feel considerably less safe than men when using public transit, yet the implication of those fears, that fear "...is what prevents women from fulfilling their right to the city...It cuts across other identities such as nationality, marital status, age, sexual preference, etc," (Fenster, 2005) has been thus far largely ignored by planners.

7. Transit Planning: Current Approaches

As a rule, the success of transit systems is measured in the number of riders using the system and the number of daily trips those riders make. Typical approaches to high ridership tend to focus on some combination of the geographical reach of the system (how many people can access the system), the efficiency of its routes (how quickly those people can get to key destinations), and the frequency and regularity of service (how many buses or trains are full and how long riders must wait at transit stops). Passenger safety is typically a relatively minor concern, though in the years since 9/11, passenger safety has risen in prominence as a concern of transit agencies. (Loukaitou-Sideris & Fink, 2009) While the increased attention paid to passenger safety is a welcome recognition of the role of perceptions of safety in travel behavior decisions, current

approaches to planning safety tend to assume that safety is a gender neutral concern. While the studies analyzed above clearly show that, as in all public space, women have unique safety concerns, and while it is equally clear that these concerns apply to transit spaces and affect women's willingness to use public transit, there has been little effort from planners to address women's perceptions of safety on public transit.

Transit operators' approaches to safety in transit spaces fall into four categories: policing, security hardware and technology, public education and outreach, and environmental design. (Loukaitou-Sideris et al., 2009) In 2006, Loukaitou-Sideris et al surveyed 131 U.S. transit agencies of varying sizes and produced a comprehensive picture of attitudes toward and approaches to safety in transit spaces throughout the United States. The survey revealed that U.S. transit operators employ a range of strategies from all four categories throughout transit systems, but that there is a clear bias toward some types of strategies, and toward certain parts of transit systems. Table 7 shows security strategies employed by U.S. transit operators as of 2006. The most commonly used strategies by far are security hardware and technology strategies, which are used overwhelmingly in all areas of transit systems except for bus stops. Likewise, trains, train stations, and train station entrances and exits receive by far the most attention of any aspect of transit systems. The least attention is paid to bus stops, and with the exception of parking lots, buses themselves.

Table 7: Security Strategies Used by U.S. Transit Operators (Loukaitou-Sideris et al., 2009)

	Police (Uniformed)	Police (Non-Uniformed)	Surveillance & CCTV	Public Education & User Outreach	Environmental Design Strategies
Buses	40%	37%	80%	58%	27%
Bus Stops	15%	13%	10%	13%	13%
Trains	87%	70%	70%	77%	30%
Train Stations & Platforms	82%	60%	92%	60%	55%
Train Station Entrances & Exits	57%	45%	75%	38%	27%
Parking Lots	50%	30%	58%	20	26%

The bias toward electronic surveillance and other "hardware" approaches is supported by the attitudes expressed by transit operators. Table 8 shows the three security measures rated most effective by U.S. transit operators. There is an obvious preference for policing, both uniformed, and non-uniformed, and for various forms of "hardware" approaches, such as electronic surveillance and alarms and panic buttons. Loukaitou-Sideris et al found that, when asked which security measures transit operators did not currently employ but want to implement in the future, 88% wanted to use CCTV on buses and 71% wanted to use CCTV at bus stops. However, among those who already used CCTV at bus stops, only 25% considered it "very effective." Moreover, among those who did not use uniformed or non-uniformed, only 25% expressed a desire to use policing in the future. (Ibid)

Table 8: Most Effective Security Measures According to Transit Operators (Ibid)

Buses		Bus Stops		Trains		Train Stations & Platforms		Train Station Entrances & Exits		Parking Lots	
Other Security Hardware	66%	Uniformed Police	73%	Uniformed Police	90%	Uniformed Police	82%	Uniformed Police	69%	Uniformed Police	63%
Uniformed Police	62%	Non-Uniformed Police	43%	Non-Uniformed Police	68%	Non-Uniformed Police	61%	Non-Uniformed Police	68%	Non-Uniformed Police	46%
Surveillance & CCTV	57%	Alarms or Panic Buttons	35%	Surveillance & CCTV	52%	Alarms or Panic Buttons	53%	Surveillance & CCTV	54%	Alarms or Panic Buttons	45%

Loukaitou-Sideris et al also asked whether their respondents felt that women had distinct security needs, and if they felt that transit operators should put in place specific programs to address those needs. The results show a degree of cognitive dissonance among transit operators.

While two-thirds of the respondents (67%) indicated that female passengers have distinct safety and security needs, only about one-third (35%) believed that transit agencies should put into place specific safety and security programs for them. (Ibid)

This is indicative of a planning culture that places women's safety on public transit at a low priority in transit planning. Moreover, only three of the transit agencies surveyed had programs in place that distinctly addressed women's safety concerns. (Ibid) The following quotes illustrate the range of attitudes toward women's transit safety concerns, which range from denial, to victim blaming, to empathy combined with confusion as to what to do.

"Safety and security issues and concerns are non-gender specific." —Safety and security manager, male, small agency in the West (Ibid)

"The public has not indicated a need for specific programs only for women passengers." —Director of transit services, female, small agency in the West (Ibid)

"We are not aware of any specific information that our female passengers have any more [or fewer] safety and security needs than our other passengers." —General manager, male, very small agency in the South (Ibid)

These responses represent the "denial" end of the spectrum of responses. All three

agencies are small, which may account for their attitude that one set of security strategies will fit all, but their responses are also indicative of a large planning culture that assumes safety to be a gender-neutral concern. Other responses took the position that there was something inherent in women's travel behavior that made them unsafe. These transit operators did not "blame the victim" in the sense that they implied that women were to be blamed for anything that should happen to them while using transit, but they essentially sought to paint women's security concerns as problems beyond the scope of transit operators.

"Generally because they [women] are carrying purses, traveling with small children, and/or carrying several packages [they are more vulnerable]." —Administrative analyst, female, very small agency in the South (Ibid)

"Female passengers may feel more vulnerable particularly when traveling alone or at night even if they are not being targeted for crime at a higher rate." —Assistant general manager, male, very large agency in the Northeast (Ibid)

The implication here is that there is nothing to be done, either because transit safety is gender-neutral and women's perceptions of safety are essentially imagined, or because women are targeted for crimes due to their behavior or appearance while travelling. Apart from being examples of victim blaming, these responses imply that women's safety on public transit is not an issue transit operators should address. The implication is that transit operators cannot stop women from carrying purses and being victimized, or that they are not, in fact, being victimized any more than men. That theme of shifting responsibility carries over even into more sympathetic responses.

"Women are usually targeted by criminals more often than men. Because of this high rate, we must target all areas, but be especially aware of areas where there are large concentrations of female patrons." —Training and safety specialist, male, very small agency in the South (Ibid)

"Other than a high profile security presence, escort or shuttle programs to and from the parking facilities, I am not sure what more can be done." —Chief of transit enforcement, male, small agency in the West (Ibid)

The first response is vague, though sympathetic to the idea that women have distinct security concerns. The second refers to a "high profile security presence" and implies that such things are not possible. This attitude lies at the heart of the disconnect between

planners' growing awareness of women's transit safety concerns and the ways in which transit systems are planned and evaluated. Transit safety is not seen as a core concern of transit agencies. Even as some transit agencies acknowledge the need for programs to specifically address women's transit safety concerns, there is an implied sense that security revolves around crime, and crime is a police matter. This is a planning culture that focuses on number of trips, bus stop wait times, and times to destination. It is a planning approach geared toward efficiency, not safety, and certainly not perceptions of safety.

8. Transit Planning: Possible Solutions

The relative indifference of transit operators to women's transit safety concerns is compounded by their reliance on electronic security measures and their tendency to ignore bus stop safety in favor of security on buses, and to focus on trains in cities that have urban rail. Research suggests that women feel least safe at bus stops, as discussed above, and that women find electronic security measures far less effective than men do. In the UK Department for Transport's 2002 survey, women were more likely to choose the presence of additional staff, and the driver refusing to allow intoxicated people to board transit as effective security measures, while men were more likely to choose CCTV cameras and rider-operated alarms. (Department for Transport, 2002) Interviewees in Hsu's study reported that police presence would act as a deterrent and that, in the case of one interviewee, "even just one, visible officer in a station" would make them feel safer. (Hsu, 2010) While in the same study, interviewees had mixed feelings about electronic surveillance, noting that an electronic record would help identify harassers so that further action could be taken, but that staff lacked the training to deal with harassment, indicating ambivalence as to whether an effective system even existed to deal with harassment incidents. (Ibid) Yavuz and Welch found that, while men and women both supported electronic surveillance, women were less confident that surveillance was an effective security measure than men. Moreover, they found that women "[tended] to be more sceptical that somebody is watching the video camera surveillance." (Yavuz & Welch, 2010) This skepticism corresponds with Stringer's finding that only 4% of respondents

who had experienced or witnessed sexual harassment on the subway had reported the incident to transit operators or police, only 14% of respondents who had been sexually assaulted on the subway reported the incident, and only 9% of respondents who had witnessed sexual assault on the subway had reported the incident. (Stringer, 2007)

Current approaches to addressing women's transit safety concerns and the problem of sexual harassment on public transit suffer from the inability of transit planners to recognize and address the problem, and also from lack of trust in transit operators, which leads to a sense that women are more or less on their own when it comes to transit safety and the threat of sexual harassment. Transit operators must therefore consider a wide range of strategies to confront sexual harassment on public transit.

A first step for a transit agency might be a "gender audit," a process by which a transit system is evaluated for its effectiveness at addressing gender-specific needs. Hamilton and Jenkins (2000) describe a gender audit as,

A toolkit for management, to assess how well the organisation meets women's needs. It can assist in the identification of priorities for improvement and can be used to measure progress towards gender-based targets. As a community tool, it can be used to assess how well a local transport provider or local authority meets women's transport needs. (Ibid)

In practical terms, this means identifying problems and possible solutions through public input and internal review. Stringer's (2007) report on sexual assault and harassment in the New York City subway system could be considered a component of a gender audit, as it examines a gender-specific problem within a transit system and recommends measures for addressing that problem. Another component might be a "safety audit," in which "women walk around a transportation setting or public environment noting their fears and concerns and making suggestions for improved safety." (Loukaitou-Sideris et al., 2009) This is a particularly simple tool, one that could be implemented using a combination of transit agency personnel and volunteers from the public, yet safety audits performed in multiple cities have consistently yielded findings which challenge the basic "gender-neutral" assumptions that drive transit safety policy, in particular that women are skeptical of electronic surveillance replacing on-board staff, and that safety at bus stops is a major concern for women. (Ibid) Gender audits can help transit operators to understand

gender differences in travel behavior as well, in terms of journey purpose, times of travel, distance covered, and mode choice (especially with regards to car availability). (Hamilton & Jenkins, 2000) Gender audits represent a flexible group of tools, rather than a specific strategy, but their purpose is to dispel the myth of gender-neutral transit planning, to identify gender-specific transit needs, and to find shortcomings in transit systems that may previously have been invisible.

Transit agencies that wish to address sexual harassment and assault may wish to work directly with law enforcement, in order to hold harassers accountable, and to create resources for victims. This can go a long way in making transit spaces safe spaces, by fostering trust between transit operators and women riders, who need to know that complaints of harassment will be taken seriously, and that their need to feel safe is a priority. If a transit user knows that if she is harassed she can report the incident to a driver and that her harasser will be expelled from the bus, or that she can report the incident to the transit agency and know that her harasser will be punished in some way, she regains a level of control over the transit space she inhabits.

Stringer's (2007) report recommends the following steps for the NYPD:

- *Increase NYPD presence on subway trains and in subway stations.*
- *Introduce and upgrade needed safety amenities throughout the transit network.*
- *Ensure that NYPD tracks subway sexual harassment and assault crimes as stand-alone offenses; tracks the prevalence of these crimes across time, borough, individual subway lines, and stations; and makes all of these statistics publicly available and easily accessible.*
- *Launch an ongoing public awareness campaign to educate riders about: the risk of sexual harassment and assault in the subway system; preventive measures that riders can take; steps that victims of sexual harassment and assault can take to seek support; and the overall importance of reporting sexual harassment and assault incidents to authorities. (Ibid)*

The first two recommendations are straightforward responses to the widespread nature of sexual harassment and assault in the New York City Subway, as found by Stringer, and to the finding common to many studies that women feel safer with the presence of police or transit staff than with electronic surveillance. The second two recommendations are equally, if not more important. The fact is that sexual harassment and assault in public

space and on public transit are not well-recorded crimes. Many instances of sexual harassment fall below the level of what could be considered a "crime," and are therefore unrecorded, though they have far-reaching effects on women's perceptions of safety. Most cities, moreover, do not track sexual harassment and assault on public transit in the way they track other crimes. Cities do not track where on transit maps sexual harassment and assault occur, when they occur, and whether they increase or decrease. Stringer's recommendation is that the City not only track these crimes in order to help police address them, but make the statistics publicly available, so that the MTA's success in addressing sexual harassment and assault becomes part of how that transit system is judged.

The final recommendation, that the MTA "launch an ongoing public awareness campaign" is as important as the City taking an active role in policing and preventing sexual harassment and assault. The failure of transit operators to recognize and address sexual harassment and assault on public transit has fostered a culture of non-reporting, and encouraged a normalization of sexual harassment. Though the phrase "preventative measures riders can take" seems to put the burden on women not to be harassed, Stringer's intent with this recommendation becomes clearer when it is expanded to include a full public education campaign.

The MTA should sponsor an ongoing public education campaign to support awareness of sexual harassment and assault incidents as serious, punishable offenses, and to instruct and encourage riders to [report] these incidents...Like the public service advertisements in the New York City subway system on terrorism, a public campaign that focuses on sexual harassment and assault may help to deter potential criminals by reinforcing the fact that the NYPD and the MTA will take these crimes seriously. It will also help to educate the public on the importance of reaching out to authorities when incidents do occur. Without this basic level of public participation, authorities cannot understand the full scope of the problem and are at a disadvantage in their efforts to design targeted prevention and response measures. (Ibid)

Though New York's public awareness anti-terrorism campaign is problematic, and has resulted in young men of Arab decent being unnecessarily detained because someone called them in, and subway cars being evacuated because someone left their gym bag behind, the phrase "See Something, Say Something" is a part of that city's vocabulary,

and Stringer's recommendation that a similar public awareness campaign be put in place for sexual harassment has been realized in the form of signs on subway cars and buses. The point here isn't the same as establishing a sexual harassment tipline for public transit, though reporting is part of it. The point is to reverse the "bystander effect," and to address the normalization of sexual harassment. This is, perhaps, the most essential goal of a public outreach campaign. When sexual harassment is normalized, it has no consequence, and the avoidance-based coping mechanisms that are second nature to many women transit users unintentionally cede control of transit spaces to harassers. When women avoid the bus in order to avoid being harassed, harassers continue to ride the bus. When transit agencies take steps to reach out to women and give them resources to report harassment and hold harassers accountable, they push harassers off the bus and make transit spaces safer.

3. Research

1. Methods

Data on sexual harassment in the Austin, TX bus system (Capital Metro) was collected using a brief online survey. The purpose of the survey was to gather information on Austin transit users' perceptions of safety while using public transit, and to gain insight into what factors influenced transit users' perceptions of safety. The survey was advertised via Bus Riders Union of Austin, Texas, a social media group where users discuss transit in Austin. The survey consisted of the following questions:

- Age
- Gender
- Race/Ethnicity
- How often do you take the bus?
 - Every day
 - Once or twice a week
 - Once or twice a month
 - Rarely
 - Never
- Do you think the bus is a safe place to be?
- Have you ever been bothered while riding the bus?
- Do you have any ideas about how Capital Metro could improve safety on buses?

The final question allowed participants to write a short response giving their opinions on how safety could be improved. The survey did not directly address the issue of sexual harassment, but was intended to provide a neutral, open-ended prompt to gauge Austin transit users' perceptions of safety while using transit.

2. Results

Fifty-nine people completed the Austin survey (not all responded to the final, open-ended question). This included 25 women, 32 men, and two who identified as neither male or female. 38 identified as white, 7 identified as hispanic, 7 identified as mixed-race, 1 identified as asian, and 6 did not provide their race or ethnicity. Ages ranged from 21-59 with an average age of 33.24 years. Tables 9-10 represent data from

the questions regarding frequency of ridership, perceptions of safety, and experience with harassment. Male respondents were more frequent riders than female respondents, and female respondents were more likely to use public transit rarely, but semi-frequent riders, those who rode public transit once a twice a week or once or twice a month, were similarly common across gender lines. The survey referred to safety in a general sense, and did not make reference to sexual harassment. However, gender differences are apparent in the respondents' perceptions of safety and experiences with harassment. While most respondents considered public transit a safe space, a higher percentage of men felt safe using the bus than of women (87% versus 68%). Additionally, while about half (45%) of men reported having experienced some form of harassment on while riding the bus, 76% of women reported experiencing harassment.

Table 9: Austin: Frequency of Transit Use

	Every Day	Once or Twice a Week	Once or Twice a Month	Rarely	Never
Male	12	8	7	3	1
Female	5	6	5	7	2
Other	0	1	0	0	1

Table 10: Austin: Perceptions of Safety and Harassment Experience

	Are buses safe spaces: Yes	Are buses safe spaces: No	Have you experienced harassment on public transit: Yes	Have you experienced harassment on public transit: No
Male	27	4	14	17
Female	17	8	19	6
Other	1	1	0	2

The purpose of the final question regarding improvements to safety on public transit was to gauge what aspects of public transit made Austin bus riders feel unsafe. To this end, responses were tagged for recurring or significant themes. Not all responses conformed to these themes, however the themes listed were chosen either for the frequency with which they appeared, or a high degree of relevance to the factors involved

in fear of sexual harassment in transit spaces established by existing scholarship. Table 11 shows the range of these responses. Responses differed significantly by gender. While the level of response was similar by gender (17 men and 19 women), responses from men tended to refer to issues like regularity of service, and several responded that they did not see a safety problem that needed to be solved. Women, on the other hand, frequently referred to social incivilities, such as drunk or disruptive passengers (12 responses), poor lighting at bus stops (6 responses), or a lack of security (3 responses).

Table 11: Austin Transit Users: Common Safety Complaints

	Social incivilities	Inadequate security from drivers or need for police	Inadequate lighting at stops	Inadequate electronic security (cameras)	Too few night buses	Poorly trained drivers
Women	12	3	6	4	1	2
Men	4	3	2	3	0	0

Responses from the Austin survey show a stark contrast between genders. Of the respondents who felt that buses were not safe spaces and had experienced some form of harassment, seven were female and only two were male. Of these, each answered the optional question "Do you have any ideas about how Capital Metro could improve safety on buses?" Thus, women reporting experience with harassment on public transit who do not feel safe on public transit account for all but one of the women who responded that buses are not safe spaces, and roughly a third of the women who responded to the question about improving safety. The percentage of women reporting experience with harassment while riding Austin's buses is significantly higher than that of men, as is the percentage of women who felt that buses were unsafe spaces. The implication of the correlation between harassment experiences implies a connection between harassment experience and perceptions of safety. The responses from these women clearly illustrate that connection.

"[Capital Metro needs] Better lit stations, buses that run more frequently after dark, and a zero tolerance policy for harassment on public transportation." - Female, 33.

"I am verbally and sometimes physically abused at bus stops at least 7/10 times." - Female, 27.

"Capital Metro should be a leader in opposing sexual harassment and street harassment, engaging in everything from public education campaigns through working with APD to patrol buses and bus stops through barring known harassers from using transit." - Female, 46.

While many of the responses from Austin referred to similar types of social incivilities to those referenced in other studies — the unpredictable behavior of mentally ill passengers, public intoxication — these three mention sexual harassment, and in particular the need for Capital Metro to confront it as a serious problem. The first respondent's reference to lighting on bus stops and more frequent night buses echoes similar complaints about fear of harassment at bus stops at night, and a sense of being trapped in these spaces and made vulnerable. Not only are these complaints typical, they speak to a culture of planning that considers women's perceptions of safety on public transit a relatively low priority.

Respondents described feeling unsafe for a variety of reasons in a variety of different locations, routes, and settings, but many of the themes addressed in the existent literature were evident. The following respondent references two important themes.

"Depending on what bus you ride, it's safe. All my incidents have occurred on local routes near downtown with clearly homeless and possibly mentally ill people." - Female, 24.

This response makes reference to both a mental geography in which certain downtown buses are unsafe because of what she has experienced and what she expects to experience again in those spaces, and social incivility, in the form of other passengers whose behavior she considers disruptive. The following response from Austin describes a different iteration of transfer of threat appraisal.

"[Capital Metro needs] More seating up front for disabled riders and riders with children because when a single person in a wheelchair gets on, everyone else has to scrunch up in the back of the bus and literally every time this happens my ass gets groped." - Female, 23.

In this case, the respondent's complaint is as much about the design of the transit space as about the harassment she has experienced. This is an important aspect of transfer of threat appraisal: the environment is consciously identified as a cause of harassment as much as the harasser's behavior. And this is not to imply that the respondent's blame is misplaced,

or that she has ignored or forgiven an obvious violation of her personal space in order to place blame on bus design. Rather, she is pointing out that the design of the bus gives her inadequate resources to address the potential threat of sexual harassment. There is not enough space on the bus, thus if she chooses to take the bus, she must bear the risk of being harassed in a space that gives victims the feeling of being trapped, of lacking control over the transit space and their experiences as riders.

Some respondents were less concerned with buses themselves than with bus stops.

"I think that safety on buses might be less of an issues than safety at bus stops. The buses themselves are well lit and more often than not have many people on them whose mere presence can help to discourage inappropriate behavior. I have been "bothered" on the bus before but have never felt unsafe until I get off the bus." - Female, 32.

"I've felt uncomfortable but never unsafe on the bus. Where I feel more unsafe is at the bus stop and walking from the bus stop to my house off North Lamar, especially at night or early in the morning." - Female, 37.

The first response reflects concern over socially incivil behavior, and notes that the bus itself feels more safe than the bus stop or the walk home, because it is well-lit, while the second references the journey between the bus and her home at night. Both responses reflect the necessity of navigating unpredictable, unsafe spaces as part of using a transit system. These common threads, feelings of unsafety using public transit at night, or around social incivilities indicate that public transit is a public space governed by the same narratives and patterns of context-based usafety as any other public space. In the same way that a park may feel safe at noon when it is filled with children's birthday parties, and unsafe at midnight when it is filled with shadows and strangers, perceptions of unsafety increase at night, or when transit spaces are characterized by unpredictable behavior and social incivilities. This connection between perceptions of transit spaces and the broader category of public spaces helps clarify the gendered nature of perceptions of safety in public space and the factors that contribute to fear of sexual harassment and sexual assault on public transit.

4. Discussion

The results of the Austin survey align with the conclusions reached by previous scholars in other cities. Women's perception of public space as safe or unsafe is influenced by fear of sexual harassment. In the case of transit space, fear of sexual harassment can not only cause women to view transit spaces negatively, but cause them to restrict their use of transit systems. While safety on public transit is a gender neutral concern, the reality of what constitutes safety and what influences perceptions of safety and danger are deeply gendered. The threat of sexual harassment characterizes riding public transit for many women, and must be viewed as a wide-spread problem that directly and significantly affects transit ridership.

Research into sexual harassment on public transportation has been scarce, and so has public attention to the issue. Sexual harassment is a normalized behavior, a fact of urban life, yet even the relatively small body of research available on the topic shows a clear consensus that fear of sexual harassment influences travel behavior. While more research on this topic is necessary, the goal of that research must be to advocate for approaches to transportation planning that hold perceptions of safety as central tenants of effective transit systems. The sense that safety on public transportation is a "public safety" issue in the sense that it is grouped with street crime and handled by law enforcement contributes to the normalization of "minor" forms of harassment and helps absolve transit operators of their responsibility to combat the problem. Viewing perceptions of safety on public transit as a "safety from crime" issue is tied up with notions of "legitimate" crime and ignores the social incivilities and normalized forms of harassment that make transit spaces unsafe. Research into sexual harassment in transit spaces needs to push for planning approaches that create safe spaces in transit spaces, that recognize the gendered nature of public space, and take into account the distinct needs of women passengers.

It is strange to suggest that transit operators take responsibility for the culture of transit ridership, but this is essentially the change that must be made. Right To The City is degraded when women feel unsafe on public transit because they lose ownership of

transit spaces, and when transit operators do not effectively address sexual harassment, this is exactly what happens. The normalization of sexual harassment is a culture of disinterested bystanders and transit operators, of spaces controlled by harassers and taken away from victims who cannot look to operators or fellow passengers for help. By recognizing the influence of sexual harassment on public transit on travel behavior, planners can build transit systems that serve their cities more effectively, and foster a transit culture in which transit spaces are safe spaces that provide access to entire cities to all riders.

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ment for an understanding of transit and Right to the City that focuses on gender politics and rejects traditional "rational choice" models. Levy argues that the idea of a "rational" transit user ignores the influence of social position, ie gender, race, and class, by assuming that each transit user has equal access to transit and will enjoy an comparable transit experience. Levy helps provide a theoretical framework for the argument that women's travel behavior is limited by the unsafe spaces and sexual harassment they face when using public transit.

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Vita

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