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## Health Justice in the City: Why an Intersectional Analysis of Transportation Matters for Bioethics

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### Abstract

Recently, there has been a concerted effort to shift bioethics' traditional focus from clinical and research settings to more robustly engage with issues of justice and health equity. This broader bioethics agenda seeks to embed health related issues in wider institutional and cultural contexts and to help develop fair policies. In this paper, we argue that bioethicists who ascribe to the broader bioethics' agenda could gain valuable insights from the interdisciplinary field of environmental justice and transportation justice, in particular. We then proceed to demonstrate the importance of adopting an intersectional approach to transportation and health. The paper concludes with the argument that intersectional gender inequality is of particular importance when studying both health equity and the unequal distribution of burdens associated with transportation systems in local contexts. This essay is meant to be the beginning of a robust conversation concerning health equity, transportation justice, and intersectional distributions of both benefits and burdens.

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Recently, there has been a concerted effort to shift bioethics' traditional focus from clinical and research settings to more robustly engage with issues of justice and health equity. This broader bioethics agenda seeks to a) embed health related issues in wider institutional and cultural contexts and b) to help develop fair policies that could positively impact the distribution of healthcare resources (Daniels 2006; Braveman et al. 2011). According to Norman Daniels (2006), historically, "bioethics concentrated on problems arising in two important areas: The didactic, very special, relationships between doctors and patients and between researchers and subjects, and the Promethean challenges—The powers and responsibilities that come with new knowledge and technologies in medicine and the life sciences, including those that bear on extending and terminating life" (p.22). Part of the broader bioethics project includes strengthening the links between the bioethics agenda of improving human health and maximizing population health or health equity. This shift firmly connects bioethics with social justice, as achieving healthcare equity often depends on the social determinants of health, or the conditions in environments where people live, work, and play (Braveman & Gottlieb 2014; CDC.com 2019). As Braveman and Gottlieb (2014) argue, it is time that we consider what underlies the causes of health inequity.

In this paper, we argue that bioethicists who ascribe to the broader bioethics' agenda could gain valuable insights from the interdisciplinary field of environmental justice, more generally, and transportation justice, in particular. Environmental justice work on transportation carefully evaluates how regional transportation planning could impact marginalized communities, using a social justice lens (Epting 2019; Rowangould et al. 2016; Bullard and Johnson 1997). In addition, a robust treatment of equity and public health requires an intersectional investigation of transportation access. As Szasz (1993) argues, "health risks and damage appear to be associated with living conditions of the population" and "gender inequalities are magnified by poverty and other forms of social disadvantage," including access to healthcare facilities (p.13). Thus, gender inequality is of particular importance when studying health equity. Additionally, a detailed exploration of intersectionality as a feminist and health concern is important for both a) transportation justice and b) the broader bioethics agenda, as women are often the caretakers and transporters of the young and the elderly, which means that they experience a further burden of time and emotional care due to inequity in healthcare (Threadcraft 2016; Frumkin et al 2004).

It is our hope that this paper contributes to the bioethics literature, as it illustrates the importance of transportation justice and work on intersectionality, when developing fair policies that could positively impact the distribution of healthcare resources. Additionally, as "gender continues to be a relatively marginal issue in environmental justice" (Bell

2016, p.1005; Unger 2008), this paper also aims to help redress this balance by highlighting women's unique experiences at the crossroads of health equity and transportation justice. We begin our conversation about transportation and health justice with a discussion of the requirements of environmental and transportation justice broadly construed. We then proceed to demonstrate the importance of adopting an intersectional approach to transportation and health when analyzing issues of justices in the city. We conclude with the argument that intersectional gender inequality is of particular importance when studying both health equity and the unequal distribution of burdens associated with transportation systems in local contexts. This essay is meant to be the beginning of a robust conversation concerning health equity, transportation justice, and intersectional distributions of both benefits and burdens.

### **Transportation Justice**

While this definition is contested, broadly speaking, environmental justice (EJ) can be understood as a multidimensional demand for “a healthy environment for all; equal access (across social groups) to environmental goods; equal protection from environmental harms” and equal participation in the decision-making processes that impact the social distribution of harms and benefits (Bell 2016, p.1). Research has shown that communities of color, marginalized groups, and low-income communities are inordinately exposed to greater harm and receive fewer benefits from transportation systems (Bullard and Johnson 1997; Rowangould et al. 2016; Schweitzer and Valenzuela 2004). Though EJ initially focused on problematic land use and immobile sources of air pollution, such as trash incinerators and energy plants, the health impacts of transportation systems received greater attention during the past two decades (Epting 2019; Rowangould et al. 2016; Bullard and Johnson 1997; Martens et al., 1999; Schweitzer and Valenzuela 2004). As Epting (2019) illustrates in his treatment of transportation justice, this work provides nuanced accounts of the unequal distribution of harms and benefits specifically associated with transportation systems. The majority of these analyses refer- explicitly or implicitly- “to distributive justice: who gets what, when, and, to some degree, how” (Schweitzer and Valenzuela 2004, p. 384). However, it is important to note that this literature also includes robust discussions of participatory, procedural, and other types of injustices, as well as their interrelationships (Chakraborty 2017; Holifield 2001; Walker 2012).

Indeed, imbalances of benefits and costs for communities often form the impetus for claims that communities are being treated in an unjust manner (Lober 1995; Pellow et al., 2002). For example, in their analysis of transportation justice literature, Schweitzer and Valenzuela (2004) found over 120 articles exploring access to economic opportunities or access inequalities, including studies on reverse commuting (Blackley 1990; Moore and

Laramore 1990), the uneven distribution of travel infrastructure (Chapple 2002), and the varied impacts of automobile centered cities (Bullard, Johnson, and Torres 2000). In addition, there is a small but growing literature on how marginalized communities are less protected from negative environmental impacts during the building of transport projects (Shepard and Son 1997). Bullard and Johnson (1997) explore how transportation facilities are often placed in low-income neighborhoods and, once built, these facilities irrevocably change local economic networks. Members of these same communities are given fewer employment opportunities to work in the transportation facilities once they are built (Bullard and Johnson 1997; Schweitzer and Valenzuela 2004). In fact, Schweitzer and Valenzuela (2004) argue that “low-income and minority residents are exposed to more environmental hazards from transportation facility construction and operations, including air, water, and noise pollution” (p.385). All forms of transportation (including rail, road, air, and marine) are significant sources of air pollution.

Pollution from emissions or traffic density is, in turn, connected to a wide range of negative health outcomes of urban residents, especially those in low income neighborhoods (Asch and Seneca 1978; Bowen 2001; Mitchell and Dorling 2003). For example, Linn et al (2000) found a significant relationship between high carbon monoxide and hospital admissions for cardiopulmonary complaints. Similarly, Gwynn and Thurston (2001) examined possible connections between cardiopulmonary risk with increased exposure to aerosol acidity, ozone, and sulfates. While they did not find significant differences in risk between racial groups, risk clearly increased based on income level and access to medical insurance status. Epidemiological studies of children found a correlation between exposure to vehicle exhaust and higher rates of cancer (Knox and Gilman 1997; Pearson, Wachtel, and Ebi 2000) and a clear connection between exposure and elevated levels of asthma in impacted populations (Brunekreef et al. 1997). Wilhelm and Ritz (2003) found that babies born by mothers living in high traffic areas had a 25% greater chance of having a baby with low birth weight.

When we highlight the health-related claims in transportation justice literature, a “tug of war” or tension arises between human rights and environmental justice (Schweitzer and Valenzuela 2004). On the one hand, living near transportation hubs may mean that residents have greater access to these services (Jacobs et al 2011; Syed et. al 2013), thus providing lower-income and minority residents with a greater access to opportunities beyond their neighborhoods (Schweitzer and Valenzuela 2004). While, on the other hand, as illustrated above, transportation facilities can negatively impact the environmental quality of the communities living near them and thus their health outcomes. When placed in this context, the distribution of benefits and environmental costs of transportation systems can be understood as complex factors that have the potential

to impact population health in a wide range of ways. For example, by increasing the availability of economic/employment opportunities, some communities may have better health outcomes, as non-insured and Medicaid patients have a higher risk of developing health complications brought on by air pollution levels (Schweitzer and Valenzuela 2004). In contrast, population health may be negatively impacted due to other factors associated with transportation systems, such as air pollution levels (Kelly and Fussell 2015). If the bioethics community is committed to accepting a broader agenda that include the distribution of health, then it is imperative that research on transportation justice be considered, as it provides key insights concerning environmental impacts to health, as well as potential infrastructurally bound benefits.

### **An Intersectional Analysis of the Health Impacts of Transportation**

In addition, this literature illustrates how transportation systems are multifaceted and could simultaneously bring with them potential benefits and harms, that could be unequally distributed throughout the local population. According to Hanlan (2011), “women’s transport needs are distinct from those of men and they are poorly met by current transport, policy, and provision. The transport world has been slow to see the relevance of women, women’s needs, or women’s issues to planning and decision-making” (p.650). With this context in mind, gender inequality is of particular importance when studying both health equity and the unequal distribution of burdens associated with transportation systems in local contexts. While feminist literature has a robust history of highlighting the importance of intersectional analyses (Collins & Bilge 2016; Lorde 1984; Davis 1983; Crenshaw 1996), the same cannot be said for traditional bioethics literature (Daniels 2006). As Rogers and Kelly (2011) argue, “the principles of autonomy, beneficence, non-maleficence, and justice are well established ethical principles in health research.... [however] of these principles, justice has received less attention by health researchers” and gender analyses have received even less attention (p. 397). They go on to argue that feminist intersectional frameworks are imperative for better understanding health disparities and how these are linked to social action and justice (Rogers and Kelly, 2011). Inequalities, and the social systems that make them possible, are co-constituted and intersecting, as various systems of oppression combine, including but not limited to capitalism, heterosexism, ableism, sexism, etc (Frye 1983; Young 1988; Grzanka, Brian, and Shim 2016). Thus, a robust exploration of intersectionality as a feminist and health concern is important for both a) transportation justice and b) the broader bioethics agenda<sup>1</sup>.

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<sup>1</sup> It is important to note that this paper does not offer a complete discussion of intersectionality. This is because intersectionality is a diverse topic that encapsulates a diverse number of thinkers and has been adopted in many different fields. Rather what we focus on are some of the important aspects that highlight the importance of discussing intersectional justice in regards to transportation.

Historically, intersectionality arose from a Black Feminist critique of white feminism that ignored the ways in which Black women experienced a double oppression from being both black and women. The oppression of black women cannot be explained looking at their oppression qua women or looking at it as qua members of the black community. One of the key aspects of this ongoing conversation concerned the reproductive rights movement (Roberts 1997; Kluchin 2011; Gardner 2005). Black feminists critiqued the ways in which “feminist” movements focused on reproductive freedom as an access issue, or the freedom to access technologies and procedures that limit one’s ability to reproduce. In contrast, women of color were more likely to experience limitations of their reproductive freedom that prevented them *from* reproducing, including forced sterilization and compulsive birth control (Threadcraft 2016; Roberts 1997). Similarly, as Threadcraft (2016) argues, white feminists tended to ignore the ways in which a white woman’s ability to work outside of the home was largely contingent on using a black woman’s body to do the work that the white woman had once done in the home.

Intersectionality, while widely agreed upon as important when discussing gender justice, does not have a widely agreed upon definition or even consensus on its exact dimensions. However, as we use it as an analytical tool our working definition is similar to Collin and Chepp’s (2013) definition of intersectionality that

Consists of an assemblage of ideas and practices that maintain that gender, race, class, sexuality, age, ethnicity, ability, and similar phenomenon cannot be analytically understood in isolation from one another; instead, these constructs signal an intersecting constellation of power relationships that produce unequal material realities and distinctive social experiences for individuals and groups positioned within them (p.59).

As we demonstrate below, the material health realities of people living in urban areas are differentially impacted based on their belonging to one or more of the groups mentioned. The intersecting constellation of power relations involves the intersection of neighborhood placement, access to health care, health impacts, and access to transportation.

While there have been significant conversations in the literature on the uneven impacts of urbanization from a feminist perspective, less has been said about the effects of transportation and equality and justice in urban areas. This is especially true in the case of access to healthcare. Rather, the discussion of public health and transportation often focuses on the health precarities that are laden in urban areas. There are negative health impacts from living in urban areas. Urban planning movements often involve ways to help people deal with the health risks of living in cities, but may not carefully consider

whether the solutions are accessible to all. For instance, many focus on ways that infrastructure can be modified (to support pedestrian and cyclist friendly modes of transportation) to increase the activity levels of citizens (Frumkin et al. 2004 & Lawrence & Engelke 2001). However, this does not address the ways in which these modes of transportation are centered around the white male commuter and so are not accessible to those that are already disenfranchised by modes of mass transportation (Hanlan 2011). This is especially important from a feminist perspective, as the burden caused by lack of access by other marginalized populations (children and the elderly) is often carried by women. As Hanlan (2011) argues, “the characteristics of a woman’s role means that we must often travel with small children, with baby strollers, with heavy shopping, or with frail or elderly relatives (p.653). In this context, it becomes clear that a complete conceptualization of justice and transportation in urban areas needs to include a feminist intersectional perspective. Below we explore the differential impacts of urbanization and transportation on health on various marginalized populations including, women, people of color, the elderly, children, and the disabled.

It should be noted that a handful of theorists working in justice have included a conversation about intersectional gender inequality and transportation. For instance, Shatema Threadcraft (2016) includes a more robust form of equity as one of her pillars of intimate justice. Her analysis explores how black women, who live in already impoverished areas, have to commute further to their undervalued jobs using less efficient means of public transit. In turn, these arduous commutes exacerbate another issue concerning intimate care, as the time spent on the commute reduces their time in the home, thus making it more likely that their children could be removed due to *perceived* neglect. This illustrates how the benefits and burdens associated with transportation systems are not evenly applied across groups, but exacerbate other racialized and gendered inequities in urban populations. “Space is currently structured by, and as spatial feminists have argued, for men. Intimate racial justice requires transforming space to better serve the needs of women” (Threadcraft 2016, p.160). There are several other health impacts that are differentially experienced by people of color due to the combined effects of urbanization and inequality in access to transportation. These include (but are no way limited to): drug and alcohol abuse, domestic and sexual violence, gang violence, unsafe sex and the related increase in STI’s, including HIV (Frumkin et al., p.198).

Less has been said about the distance that already marginalized populations have to travel to gain access to healthcare. According to Hanlon (2011), “women make proportionately more trips by bus, on foot, and as car passengers than men do. The bus is the most used mode of transport for young and older women, with two thirds of

all bus users being women. Women make more local trips and undertake travel more often in the interpeak than men” (p.652).

Women are expected to meet most of the transportation needs of the family (children and the elderly), including trips associated with health care appointments (Frumkin et al. 2004, p.187). This is an especially important area to consider when discussing what a just and equitable transportation system would look like. As women (especially women of color) are already impacted by urbanization differentially, it is imperative that their needs be addressed. For those who are lucky enough to be able to use private transportation, there are additional health risks. For instance, Frumkin et al. (2004) argue that more time spent meeting family transportation needs is correlated with increased health risks, such as higher levels of stress and a higher likelihood of experiencing a car crash. This is important from a bioethics context, as higher stress levels associated with transportation, environmental impacts of living in urban areas, and lack of access to health facilities could increase the probability that women will develop a host of medical issues (Harronis and Gabriel 2000).

People with disabilities also experience negative health impacts due to inequity to access in transportation (Louca-Mai 2003). Mental health impacts offer special insights into the importance of intersectionality as African American youths are especially at risk (Assari et al. 2018). They are less likely to seek psychological/other mental health treatments, more likely to experience mental disorders including depression, and less likely to be diagnosed when experiencing these issues. Lack of treatment leads to these mental health issues worsening and can lead to further mental health complications including suicidal ideation (Ofenudu et al.; Brodey et al. 2015; Williams and Mohammed 2009). Another group of marginalized people whose health is negatively impacted by the lack of transportation access is the elderly (Rosenbloom 2006). These risks are threefold. First, the more that elderly people have to rely on themselves for transportation, the more likely it is that they will experience a car accident (Ettelman 2017) and be harmed when in an accident (Baldock and McLean 2005). Second, they also may live further from health care areas making it more difficult to gain access to needed treatments (Mattson 2011; Ettelman 2017). And finally, they are more likely to be forced to relocate in new neighborhoods which exacerbates isolation which has been confirmed to lead to increased health risks in the elderly.

These inequalities are exacerbated by further disparities in health issues caused by urbanization, more generally. Children living in heavily populated areas are more likely to experience short term and long-term health issues (especially respiratory diseases) living in industrialized areas. This means that they are more likely to need better access

to healthcare which is disproportionately available given the constraints of what Threadcraft (2016) and others have deemed the “Dark Ghetto.” Which is further exacerbated by the lack of exercise available to those living in a sprawling city and the fact that where there is a dearth of areas dedicated to outdoor activity lead to a higher likelihood of experiencing a traffic accident which again is most likely to occur in impoverished areas (Frumkin et al. 2004, p.189).

### **Transportation Justice and an Intersectional Bioethics Agenda**

If bioethics is to expand to include wider issues of social justice and health inequities, then justice mandates that we pursue fairness in the promotion of health (Daniels 2006). For Daniels (2006), this broader bioethics agenda should move beyond the doctor-patient relationship to include the following: “(1) health inequalities between different social groups and the politics needed to reduce them, (2) intergenerational equity in the context of rapid societal aging” and (3) inequities between international communities (p.23). However, as we have illustrated above, the distribution of health-related benefits and harms is multifaceted and intersectional. Inequalities, and the social systems that make them possible, are co-constituted and intersecting, as various systems of oppression combine, including but not limited to capitalism, heterosexism, ableism, sexism, etc (Frye 1983; Young 1988; Grzanka, Brian, and Shim 2016). Women, the elderly, and other marginalized communities are more likely to be socially situated in such a way that the burdens of transportation systems (including those that impact health) fall more heavily on their shoulders. If systems of oppression are multidimensional (Frye 1983) and “gender inequalities are magnified by poverty and other forms of social disadvantage” (Szasz 1993, p.13), then a robust intersectional exploration is imperative for understanding health inequities between different groups and *within these groups*. Thus, we call for an even broader bioethics agenda that recognizes a) the necessity of an intersectional analysis of how benefits and burdens can be unequally distributed within groups and b) connects this unequal distribution to wider environmental injustices and the built environment.

However, one could argue that, rather than focusing on an intersectional approach to transportation justice, a more appropriate application of justice would be to consider those people that are the worst-off in any particular scenario. Those whose health is most disadvantaged by a transportation system will be those who receive the most consideration in any new recommendations. For instance, if a transportation hub is built in a neighborhood, any programs implemented should consider those that were harmed the most by the hub’s installation. Rather than focusing on a complex intersecting system of disadvantage, this approach would be more actionable, in that it could provide

immediate policy recommendations and clear outcome targets. However, we argue that this view is short-sighted. In order to fully understand and combat current injustices one must understand the historical contexts in which they appear. Mohanty (2003) focuses on the importance of acknowledging and incorporating history into feminist intersectionality. An ahistorical approach risks perpetuating the status quo and the continued erasure of counterhegemonic histories both of which contribute further to injustice (p. 54). Furthermore, an intersectional approach is required to determine who is the most negatively impacted in these scenarios. As we have demonstrated, determining who is the “worst-off” in any given scenario is a complex process that involves considering many different factors that require a historical intersectional approach.

In addition, one could argue that the field of bioethics has barely begun addressing ethical challenges in research and clinical contexts (Daniels 2006) and thus expanding the scope of the field to include transportation justice concerns is problematic. In particular, it could reduce the effectiveness of bioethics in these core research areas, as it shifts bioethics focus beyond the context of medicine and into the social and political sphere. Additionally, bioethicists are often less familiar working in political philosophy circles and the social sciences. This lack of expertise could act as a barrier to effective policy development and implementation. In reply, we second Daniels (2006) argument that “all socially controllable factors that affect the distribution of health become the concern of those pursuing equity in health” (p.25). In a striking way, robust intersectional explorations of health disparities challenge the view that we should conceive health as a separate sphere-- i.e. “focusing on health benefits without thinking about the contributions that health makes across spheres” (Daniels 2006, p.25). As discussed throughout this essay, health disparities do not occur in a vacuum. They are socially constructed and embedded in cultures and built environments. If bioethicists are truly committed to developing fair policies that could positively impact the distribution of healthcare resources, then historical and environmental factors need to be considered. Additionally, The World Health Organization defines health as a “state of complete physical, mental, and social wellbeing” (p.x). If we accept this definition, then expanding the boundaries of bioethics beyond clinical and research contexts is necessary for achieving a healthy state.

In this vein, work coming out of environmental justice, in general, and transportation justice, in particular, could provide us with a more robust understanding of important tensions that may prove useful when designing policies aimed at reducing health inequities. As discussed in the section on transportation justice, there is a “tug of war” or tension that often arises between human rights and environmental justice (Schweitzer and Valenzuela 2004). On the one hand, living near transportation hubs may mean that residents have greater access to these services (Jacobs et al 2011; Syed et. al 2013), thus

providing lower-income and minority residents with greater access to opportunities (Schweitzer and Valenzuela 2004). On the other hand, transportation facilities can negatively impact the environmental quality of the communities living near them and thus their health. When coupled with the intersectional analysis, this insight is important, as it illustrates how benefits and harms could be unequally distributed between communities and the stark reality that a population could simultaneously benefit and be harmed by policies and the design of built environments. We argue that empirical work proving a nuanced understanding of these complex factors is necessary for fully determining what fairness or health equity means. If policy pursuing “fairness in the promotion of health... needs the guidance of ethics in determining what this means,” as Daniels (2006) argues, then it is also fair to state that ethics needs guidance in determining what inequity means, as it is experienced by communities in their everyday lives. As such, work in environmental justice, which is grounded in community activism, could provide valuable guidance for determining the shape that “fair” policies should take, as bioethicists and public health officials push for the promotion of equitable distribution of health resources.

## Conclusion

With this context in mind, we argue that an expanded bioethics which includes a mandate to address inequity, must consider insights from transportation justice literature and should adopt an intersectional approach regarding both the health impacts of the city and access to healthcare. Marginalized populations experience a disproportionate number of negative impacts due to the lived-in realities of their day-to-day lives in urban areas. This, in turn, is exacerbated by lack of access to healthcare. Empirical and philosophical work on equity and access to healthcare in the city needs to motivate the bioethics agenda-- an agenda that includes a) improving human health and b) maximizing population health or health equity. Given the inequalities and the disparate negative health impacts in the city, access to quality health care is a primary concern. However, little research has currently been done in this area (Hanlon 2011).

In this paper, we argued that bioethicists who ascribe to the broader bioethics’ agenda could gain valuable insights from the interdisciplinary field of environmental justice, more generally, and transportation justice, in particular. In addition, a robust treatment of equity and public health requires an intersectional investigation of transportation access. In this vein, we presented a detailed exploration of intersectionality as a feminist and health concern and highlighted how this analysis is important for both a) transportation justice and b) the broader bioethics agenda (Threadcraft 2016; Frumkin et al. 2004). It is our hope that this paper contributes to the bioethics literature, as it illustrates the importance of transportation justice and work on intersectionality, when developing

fair policies that could positively impact the distribution of healthcare resources. From an intersectional feminist perspective, this is a key contribution given the racist biopolitical history in the United States. *De jure* and *de facto* policies have privileged white, affluent lives over those of people of color and the impoverished. This inequality is compounded by the racial disparities in reproductive health that leads to a significantly higher death rate for women of color than white women (Martin 2018 & LeBolt et al. 1982). Disparities in access to transportation only exacerbates these issues. If we are truly committed to addressing health inequities for all populations, we need to consider environmental factors, such as the unequal distribution of burdens associated with transportation systems. This essay is meant to be the beginning of a much larger conversation concerning health equity, transportation justice, and intersectional distributions of both benefits and burdens.

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