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The Peñalosa Principle of Transportation Democracy: Lessons from Bogotá on the Morality of Urban Mobility

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Abstract The mayor of Bogotá, Enrique Peñalosa strives to deliver transit services that promote social equity through bicycle lanes, improved sidewalks, and a world-famous Bus Rapid Transit (BRT) system, "TransMilenio." Through examining the principles that guide his planning, we can flesh out a starting point for socially just transit systems. While such measures can alleviate several harms that transit systems cause, they rest on an incomplete foundation due to their top-down nature. To amend this situation, the author argues for a restorative justice approach to transportation democracy, using examples from Peñalosa's mayoral tenure. In turn, lessons from Bogotá's transportation history reveal how to develop transit systems that strongly favor justice.

Keywords Transportation justice · Transportation democracy · Urban mobility · Enrique Peñalosa · TransMilenio

Introduction

The mayor of Bogotá, Enrique Peñalosa (2015, 38) argues: "If all citizens are equal, as constitutions trumpet, a bus with 80 passengers has a right to 80 times more road space than a car with one passenger." On the surface, this assertion sounds as if it was only concerned with the distribution of roadway space, or it might be a problem-solving measure for private–public transportation issues. Yet, there are democratic ideals embedded in the text that can serve as normative guides for how to address topics such as public works. For instance, one could hold that it concerns

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how governmental representation ought to extend to infrastructures and services that serve a common purpose such as transit systems that make getting around the city possible. Considering that the public essentially owns most roadways in a democracy, then, their representatives should ensure that they are used in a fair and just manner.

If these ideas are given credence, then parsing out Peñalosa's passage above can give a dictum for developing just transit systems, the Peñalosa Principle of Transportation Democracy. This principle holds that the governing powers of a constitution can extend to cover transportation infrastructure. Depending on how it is fleshed out, this claim could hold that each person deserves equitable access to transit. It could cover topics such as subsidies, distribution of services, and impacts on public health, along with public-land usage.

The list above is not exhaustive, but it indicates the kind of issues that one could consider when debating urban mobility and justice. Although one might be tempted to enumerate areas of concern, I hesitate to take that route because it comes across as an authoritarian measure, not democratic. However, in most instances, these concerns should address harms that a community has endured, or they could serve as preventative measures against additional injuries. While this principle could advance just planning efforts, it lacks a solid basis, challenging the idea that it remains fully just. Establishing a just foundation of transportation democracy means deciding who gets to weigh in on transit concerns, an inquiry that examines the just conditions for determining justice.

To put it in concrete terms, the problem is that people who use transit systems often lack meaningful ways to help develop or improve them. Residents require this ability because of the effects that transportation has on their health, livelihoods, ability to economically advance, and they involve hundreds of millions of tax dollars. Knowing about some of these harms, however, requires intimate access to affected people. Lacking this information hinders planners' and engineers' efforts to create transit systems that promote social justice.

Because they do not know about several of the ways that transit systems injure people, planners and engineers lack pertinent information required to solve problems. Due to these conditions and the high-stakes of such decisions, I argue that municipal leaders have a responsibility of a moral nature to implement resident-centered democratic practices that can shape transit systems, from the initial planning stages to adjustments in daily operations. Considering that my argument is for municipalities to work with transit users to mitigate harm and prevent damages, this issue qualifies as a concern for restorative justice.[1] Although restorative justice receives more attention in criminal justice studies than it does in other fields, the pattern behind its principles works for several non-criminal cases (Wachtel and McGold 2001).

The primary motivation to employ a restorative framework to develop and maintain transit systems is that its tenets are consistent with the requirements for

[1] One could argue that distribute justice frameworks could work well for promoting just transit systems. Yet, it is worth pointing out that restorative justice is a pluralistic model that includes distributive considerations.

building and operating a transit system that justly serves its users. For instance, describing restorative justice in a broad sense, Braithwaite (2004, 28) asserts: "Restorative justice is a process where all the stakeholders affected by an injustice have an opportunity to discuss how they have been affected by the injustice and to decide what should be done to repair the harm." For complex issues in transportation engineering and planning, it provides a way to alleviate harm that transit systems cause and develop means to prevent future incidents. For instance, through connecting planners and engineers with transit riders, they can obtain the necessary information required to develop and sustain transit systems that favor justice.

To make this case in this paper, the kinds of damages that different transportation infrastructures cause through their relationships with the political and social elements that surround them are examined. Exploring such harms, along with the epistemological incongruence mentioned above, it is clear that urban dwellers ought to be included in decisions about transit systems. Through bringing these elements together to examine Peñalosa's planning practices, we learn how to address some of the problems that could arise when executing just planning efforts. In closing, I speculate about extending such lessons beyond Bogotá.

Transportation Systems and Harm

While urban transit remains riddled with justice issues (as examined below), such concerns are arguably not planners' initial motivations behind transit decisions. What we need to understand about transportation planning is that getting people to and from where they need to go is the primary task, regardless of mode or destination (Walker 2009, 2012). Today's planners have to deal with several decisions that were made before they came into the profession (Epting 2015). Due to planners such as Robert Moses who favored highways in the city, several urban centers in the US lack mass transit systems (Winner 1980). In turn, getting to and from work in a reasonable timespan is a challenge for numerous urbanites.

For instance, the majority of US urban residents can use some form of public transit, but 39 million people lack service (Tomer et al. 2011). In the Miami-Fort Lauderdale-Pompano Beach metropolitan area, for example, mass transit only connects workers with 16.2% of jobs that are within 90 min of travel time; for residents of Richmond, Virginia transit services only reach 26.5% of available jobs (ibid). In addition to workday commutes, travel-related terms such as "food desert" suggest that transportation issues are tied to public health (Cummins 2014). This term is connected with another expression that is emerging within urban planning, 'transit desert," neighborhoods that lack effective transportation services (Hilkevitch 2014).

One can argue that cities that lack efficient transit infrastructure force residents to remain on the road, assuming that car ownership is feasible. Through such conditions, people view problems associated with automobile travel as inevitable realities, situations that might not appear as social problems due to their familiarity. While seemingly benign, such issues affect public health issues such as obesity,

neck and back pain, along with anxiety and fatigue (Crabtree 2010; Christian 2012; Hoehner et al. 2012). Commuting also promotes social isolationism (Putnam 2001; Miles et al. 2012).

While the harms above show how a city's population must deal with the detrimental results of transportation planning, these injuries only account for the damages that the majority of people endure. In the section below, so how environmental justice studies reveal the kinds of harm that disproportionately affect minority groups are examined. Through investigating how these communities suffer, a dire imperative of responsibility can be discovered that involves cooperation from municipal workers and residents.

Transportation Systems and Environmental Justice

Regarding environmental justice, commuters that reside outside of metropolitan areas benefit from highway systems, but minority residents in the city must endure pollution's unfavorable effects (Lazarus 2001). Such conditions often put poor communities in harmful situations that compromise their respiratory health (Maantay 2007). This notion suggests that the mere presence of a transit system can be detrimental, in certain cases.

Although the effects above count as instances of environmental injustice due to their physical effects for people, Robert Figueroa (2006) argues that harming minorities' cultures is also unjust; minorities ought to be able to participate in decisions that impact them. In terms of transportation infrastructure, the decisions that govern where highways and rail lines will be and how they operate often align with his account.[2]

For example, in south Dallas, highway implementation has a controversial past, intertwined with racial struggles and injustice (Payne 2015; Welfen et al. 2015). In addition to roadways, but to a lesser degree, light rail systems also displace minorities (Scott 2012). In Portland, Oregon, for example, new mass transit systems increased property values, forcing African Americans from their homes when rents increased, cutting them off from their communities and churches (Scott 2012). These outcomes are unjust because of cultural harm.

Marginalized people who use unjust transit systems also struggle to secure work, face mobility challenges when meeting their needs, and often spend a substantial portion of their income on travel (Deka 2004; Fol and Gallez 2014). Herein lies a problem for some urban poor: to improve one's economic status, a person needs an automobile, but purchasing a car is challenging when you consider the elements above.

While most residents benefit from highways, the urban poor suffer. The surprising problem is that the majority also suffers, considering the negative effects mentioned above. Bearing such outcomes in mind, the majority and the minority

[2] Figueroa's "Environmental Justice Paradigm" is a pluralistic approach that contains elements of and is compatible with restorative justice. See: Figueroa (2006) Evaluating Environmental Justice Claims. In J. Bauer (Ed.), *Forging Environmentalism: Justice, Livelihood, and Contested Environments* (pp. 360–376). Armonk, NY: M.E. Sharpe.

should be motivated to improve the conditions of urban mobility. Yet, residents lack the democratic ability to improve the situation. In addition to these considerations, urban dwellers require an increased voice in determining the conditions of transit systems due to different kinds of costs that intersect with infrastructure's placement and operational impacts.

In the following section, a brief account of how such factors can create situations that require intimate knowledge of a community's values to develop transit systems that align with residents' interests is provided. Adding to the harms outlined above, this segment exhibits how transportation infrastructure obscures dimensions that require consideration for transportation justice.

Economic, Social, and Environmental Costs of Transit

Due to the complex nature of transportation systems, statements about their "costs" are problematic. For instance, economic considerations must be stacked against other social needs and justice concerns, while environmental issues lurk in the background. In turn, determining the worth of a particular system must be assessed on a case-by-case basis. The financial values of these systems range from millions to billions of dollars, with local taxpayers usually carrying the burden. Once implemented, transit systems usually remain, along with problems that accompany their operation. Planners and engineers must mitigate problems as they arise.

The history of transportation infrastructure in the US, however, suggests that some lessons are too expensive and deprive society of needed resources. For instance, one could argue that highway removal projects count as multi-million dollar mistakes—taxpayer funds that could have been put to better use. If the highway removal project in Buffalo is examined, residents are excited to have their waterfront view returned (Fisher 2016). In this case, the community weighed the aesthetic cost of nature over the cost of urban mobility. While particular features of highway-removal cases vary, several instances show that such projects improved air quality and public health, spillover traffic was easily absorbed, property values in surrounding neighborhoods increased, and crime decreased (City of Seattle 2008). One could argue that highway removals reveal that planners overly estimated that value of some freeways, neglecting to weigh social elements such as clean air, walkability, and economic improvements.

Bearing these aspects in mind, planners and engineers must balance several "costs" to prevent poor uses of transportation funding. As stated earlier, a possible solution requires that they must meaningfully include residents into the decision-making processes that govern transit systems.

Herein lies the tension between municipal authority and community autonomy, manifesting in the form of insufficient consultation with residents. For the environmental justice cases above, such instances wherein marginalized groups receive unjust treatment, the focus remains on them *receiving* harm. When it comes to assessing whether or not wrongdoing occurred, the notion of disparate impacts holds that systematic racism is an ingrained part of society, meaning that deliberate

or intentional harm is not the issue.[3] In turn, minority groups can become victims of environmental injustice, despite not being able to identify the perpetrator in transit cases (Epting 2015).

If one were to apply the pattern of thinking behind Figueroa's environmental justice paradigm for marginalized groups to the public, then planners would be wrong to exclude them from decisions regarding the polices that can lead to harm. One might think that it should not take much legwork to extend the pattern of Figueroa's argument to the public, but problems arise because one is not dealing with systematic oppression, suggesting that appeals to disparate impacts will not hold (Epting 2016a, b). Yet, considering that both marginalized people and the rest of society suffer, one has strong reasons to believe that meaningful public input is required for building and maintaining transit systems. In the next section, some of the challenges that hinder such efforts are explored.

Resident Participation in Transit Planning

Although citizens do vote on some transportation projects and city councils often solicit feedback on such developments, resident participation mostly ends there. Considering this degree of participation has nary an influence, dismissing it sounds appropriate. Sherry Arnstein (1969, 217) for example, describes such weak attempts at inclusion as "non-participation," illustrating how several kinds of ill-fated endeavors are substituted for genuine participatory measures.

These involvements favor "weak" or "thin" democracy, meaning that it supports individualism rather than public justice (Barber 1984). Yet, as the points above suggest, transportation issues have several deep-seated concerns that require a "strong" version, wherein community members take an active role in determining the conditions for mobility in the city. Without meaningful and inclusive provisions, resident participation remains null, and any attempt to employ Peñalosa's principle would only be partially just, bearing in mind that all improvements in transit efficiency and coverage would stem from conventional authoritarian structures.

One could object to this notion, arguing that only outcomes matter for such cases. A case could be made holding that it is the job of planners and engineers to achieve such results, suggesting that any paternalistic measures do not require justification. These are fair criticisms, but the former neglects to consider that I am arguing for a just approach to transportation democracy, not a model of project completion. If one fails to consider that justice entails meaningful inclusion, then any progress in planning falls short of being truly just. Beginning a transit project with an inclusive foundation, however, avoids this pitfall. Regarding the latter criticism, this point indicates a larger, systemic problem within the history of engineering and planning practice.

Consider, for example, engineers or planners might not welcome the idea of working with communities that want to be included in the decision-making process. For instance, Ali Mostashari (2005) makes the case that it is common practice for

[3] For more information on disparate impacts, see Griggs v. Duke Power Co., 401 U.S. 424, 91 S.Ct. 849, 28 L.Ed.2d 158 (1971).

engineers to talk to stakeholders *after* making decisions. While these norms are customary, their repeated practice does not justify their role in engineering and planning, and they could lead to additional harm (Epting 2016c). To get results that avoid such harms, adjusting informal and or formal planning and engineering protocols to include meaningful inclusive measures could improve such situations.

While this suggestion has a practical aspect that highlights the importance of engineer-stakeholder communication, the point worth emphasizing rests on inclusion as a primary concern for restorative justice. For instance, urban geographers have grounded this point in rights-based language, the right to the city (see below for explanation). Through focusing on this dimension, the notion that being included into the decision-making process is about much more than transportation justice. It also involves how people co-create identities with the built environment that surrounds them.

In the critical geography literature, for instance, researchers employ the notion of the "right to the city," a concept holding that residents have a right to determine the defining characteristics of a city and how such features help or hinder self-determination. David Harvey (2008, 23) clarifies:

> The right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city. It is, moreover, a common rather than an individual right since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization. The freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights.

If we are to seriously consider Harvey's point, then we must question the elements that impede people's abilities to improve urban life, and transit is not exempt. Inefficient urban mobility is a primary reason why marginalized groups cannot escape poverty, and this notion exhibits why transportation remains a pressing issue for social justice (Wachs 2010; Blumenberga and Agrawalb 2014; Bouchard 2015). However, as Kafui Ablode Attoh (2012) points out in his study of transportation and disability in Syracuse, scholars researching right-to-the-city issues have paid little attention to transportation.

Bearing these points in mind, cities that have made progress and that have had setbacks with transit-justice issues provide an opportunity to learn how to improve the conditions associated with transportation infrastructure. In turn, municipal leaders can benefit from such studies. Considering that Bogotá has made substantial progress and has encountered several challenges, some of the city's planning history in the section below are examined.

A Lesson from Bogotá on the Conditions for Restorative Justice in Transit Planning

Improving urban mobility in several Latin American cities means that planners and engineers must overcome financial obstacles that limit their options (Bocarejo, Velásquez, and Galarza 2014). Although finding just solutions for transportation

issues is usually not feasible under such conditions, Peñalosa's transit planning illustrates how to work towards such goals, despite impediments. For instance, Peñalosa (2011) made equality the criterion that underscored his planning agenda, developing a multidimensional plan that addresses the complexities of urban mobility. Achieving this goal meant using the means within his reach that could move people around the city. Eliminating parking on sidewalks, restricting driving during peak hours, and starting "Car Free Thursdays" in the city, along with increasing bicycle paths and sidewalks, all were efforts to increase the quality of urban mobility (Peñalosa 2011, 93).

Working with attainable resources, Peñalosa implemented a new fleet of red buses, "Bus Rapid Transit" (BRT) stations, and exclusive BRT lanes across the city, a system called "TransMilenio (Pineda 2013)." This system significantly improved mobility, and people who previously lacked meaningful transit options could move about Bogotá. Its approval rating initially soared (Hidalgo et al. 2013).[4] Despite some inevitable shortcomings, it improved air quality and had noticeable impacts on crime, employment, and land value (Hidalgo et al. 2013). Peñalosa's improvements gained widespread approval from city dwellers and garnered international attention (Hidalgo and King 2014).

His successors, Antanas Mockus and Luis Eduardo Garzón, continued his work on TransMilenio, dealing with emerging problems such as overcrowding and efficiency (Bassett and Marpillero-Colomina 2013). Yet, they did not share Peñalosa's dedication and enthusiasm for the system (ibid). When elected in 2007, Samuel Moreno Rojas turned attention away from TransMilenio and towards a subway system, a maneuver that ultimately failed (ibid). Without the leadership to keep TransMilenio concerns firmly in view, one could argue that the efficiency of BRT decreased. At present, the majority of users strongly disapprove of TransMilenio's current state (Semana 2016).

On February 10, 2016, protests against TransMilenio's conditions turned violent, resulting in 70 arrests, 60 vandalized buses, with damages estimated at 180 million pesos (ibid). During a press conference, Peñalosa argued that the government's neglect of transportation services (assumingly, during his absence as mayor) led to unfavorable conditions (such as overcrowding and rising costs). Considering such volatile circumstances, employing a restorative-justice approach is appropriate to bring peace to TransMilenio.

While this point is merely suggestive, appealing to such measures identifies some of the factors that played a role in the breakdown of TransMilenio. For instance, Peñalosa initially sought to include community members into the planning process, despite limited interest (Bassett and Marpillero-Colomina 2013). Yet, critics argue that they were excluded from such decisions (Hidalgo and King 2014; Kash and Hidalgo 2012).[5]

[4] Specifically, in 2008, travel times were reduced 32% for system users. Traffic fatalities were reduced by 88%, and greenhouse gases were reduced have by 134,011 Tons/year. For more information, see Hidalgo (2008). Why Is TransMilenio Still So Special? *The City Fix*, 5 August 2008. http://thecityfix.com/blog/why-is-transmilenio-still-so-special/. Accessed 16 September 2016.

[5] In addition, Pineda (2013) shows how poor residents, along with the disabled, were excluded from the models used to design Transmilenio.

To amend this situation, Peñalosa could develop new approaches that would better serve how resident groups are included into his planning agenda, working to ensure meaningful inclusion. Community members could provide the necessary feedback that is required to deal with issues pertaining to the system's operations. Due to community-municipality cooperation to alleviate harm and prevent future injury, this step aligns with the requirements for restorative justice, and it could help develop a long-term framework to support the overall functioning of TransMilenio. Such actions work toward developing a just transit system, a condition required for the system's long-term survival.

While this notion merely indicates one possible way to initiate cooperation between municipalities and communities, it can serve as an essential component for developing just transit systems. For residents, some of their responsibilities rest with how they communicate with the city leaders that they elect or who are paid to fulfill duties on their behalf (contractors, planners, engineers, etc.). In other words, one could argue that they have an obligation to avoid harmful, violent practices, and voice their concerns through appropriate channels.

For city leaders and workers, however, their expertise requires them to implement appropriate measures to successfully do their jobs, but they must do so in a just manner. As seen above, accomplishing this task means that they must have intimate knowledge of how transit systems affect communities. Obtaining and meaningfully acting on this information holds steady as a necessary condition for justice. In turn, securing this input remains paramount, suggesting they should create protocols that have participatory provisions.

While the aim of TransMilenio is to promote equality, arriving at this condition entails that the means that practitioners use must do the same. As King (1963) reminds us: "the means we use must be as pure as the ends we seek." Through adopting restorative means for transportation democracy as a protocol, community groups could address topics such as subsidies, distribution of services, and impacts on public health, along with public land and space issues. The point is that they must be included in deciding the elements that pertain to transit systems. Having this initial protocol in place suggests that the conditions for pursuing justice are just. By including community groups in these fundamental decisions, restorative-justice efforts can flourish, along with the possibility of creating a just transit system.

Yet, one could object to the points above on several grounds. Firstly, participatory approaches are not a cure-all remedy for social ills. For example, while participatory budgeting has become a championed practice in Latin America, it often fails to achieve desired results (Goldfrank 2011; Vásquez 2016). Regarding Bogotá, previous attempts to implement inclusive democratic practices such as participatory budgeting in Bogotá have not lived up to people's expectations (Vásquez 2016). For such cases, one could argue that inclusive practices do not fare better than traditional means. So should restorative justice into transportation infrastructure be implemented? Does it make sense to employ a method that has already failed as a means for policy measures?

While these are fair criticisms, the problem is that participatory approaches remain in their infancy. Attempting to discredit them based on failures during developmental stages does not prove that inclusive measures are doomed from the

outset. Such criticisms only show that such applications require additional study—a reasonable consideration for any new theory, practice, or product. One could argue that examining such failures could bolster efforts that could lead to success.

For example, regarding participatory budgeting in Bogotá, through extensive research, Vásquez (2016) has identified two primary kinds of issues that hinder inclusive efforts, design and implementation. By pinpointing how such problems arise, additional study could reveal ways to correct failures. In turn, revising the ways that municipalities and communities engage with participatory approaches could avoid negative outcomes.

What is more, the Participatory Budgeting Project (PBP) in the United States illustrates that such means can work. To date, for instance, PBP has secured $170,000,00 for over 500 projects, involving over 200,000 people and 84 elected representatives (PBP 2016). Considering that this organization has developed a way to produce viable municipal-community partnerships, there is evidence that participatory approaches are feasible. Although PBP cases do not guarantee that all such measures will achieve the same results, perhaps studying the patterns of success can help restore justice to areas such as transit systems.

Beyond Bogotá

Peñalosa made great strides towards improving urban mobility, but without the means to continue his transit initiative, services and people suffered. This point suggests that a great transit system must not solely depend on an individual. If such systems are to advance, then they must continue because of the will of the residents who direct them, along with support from city leaders, a lesson from Bogotá on the morality of urban mobility.

Learning about the conditions that affect transportation justice means discovering that such issues are deeply ingrained in the thinking that guides mobility planning and engineering. For example, Martens (2006) illustrates how basic transport modeling and cost-benefit analysis used to correct justice issues actually perpetuate injustice. In turn, the frightening reality is that symptoms surface in the form of harmful living conditions for urban dwellers, and the experts unknowingly reshape the conditions of such problems.

While transportation infrastructures across the world technologically advance, the concern for planners and engineers should rest on the moral progress of transit systems, such as promoting human flourishing. To this end, an excellent transit system should focus on residents' transit needs beyond work, and should include aspects such as recreation and health care. Because cases differ, professionals working on such projects need theoretical devices that will work in numerous settings. With hope, the lessons expressed in this paper will count as humble contributions towards finding solutions to such problems.

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