

LEARNING FROM CURITIBA

THE SUCCESSES AND FAILURES OF AN EARLY INSTANCE OF URBAN ACUPUNCTURE

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When Brasília was inaugurated as the new capital of Brazil in 1960, it was considered one of the world's premier examples of modernist urban planning. Lúcio Costa's and Oscar Niemeyer's design, the *Plano Piloto*, was much influenced by the automobile and the demonstration of state power. Five years later, Jorge Wilhelm designed an urban development plan for Curitiba, the capital of the Brazilian state Paraná, that was diametrically opposed to Brasília's model. Instead of an extensive system of highways, imposing boulevards, and monumental buildings, Curitiba featured a public transportation system, pedestrian zones, and recycling programs. This paradigm shift from top-down design to bottom-up management sought sustainable urban development long before it came into fashion.¹

In recent years the positive signs coming from what Kris Herbst called "South America's Green Capital" have dwindled.² Quite possibly, Curitiba is a victim of its own success. Throngs of poor immigrants streaming into the city have posed serious challenges. Like many of the world's other urban centers, rapid population was accompanied by population decline in the surrounding regions. The resulting shortage of resources forced Curitiba to develop measures that require minimal effort and produce maximum effect. Curitiba's experience in strategic urban development – what the architect and long-time mayor of Curitiba, Jaime Lerner, calls "urban acupuncture"³ – is more important than ever before. In an age of financial crises, weak government programs, and rising oil prices, this kind of alternative medicine represents a promising strategy.

From today's perspective it was a stroke of good fortune that when, in 1965, Curitiba began to undergo rapid industrialization and population growth, its budget was in bad shape. Lerner, the figurehead behind Curitiba's success, put it like this: "Creativity begins when you're forced to drop two zeros off your budget."⁴ At the time Lerner had little to lose. He had just turned thirty when he was made the director of the newly founded *Urban Research and Planning Institute* (IPPUC), whose mission was to prepare and execute urbanization strategies. Five years later Lerner became mayor, an office he held for three terms (1971–75, 1979–83, 1989–92) before he served as Governor of Paraná, between 1995 and 2002. Lerner's long career gave Curitiba a rare period of political continuity, and this continuity made possible its gradual approach to urban planning. To take an example I'll return to below: Curitiba's excellent bus system was the product of many ad hoc decisions whose goal was to achieve results quickly, pragmatically, and affordably. Yet each decision was made with a larger concept in mind – the concept of a compact city based on a radial layout. Curitiba's development illustrates three theorems of urban acupuncture:

1. A physiological understanding of urban development. The relationships of the parts to the whole and the parts to the parts take priority. Operating in a web of local dependencies, each measure strengthens the other, making the whole greater than the sum of its parts.
2. The initiation of process chains. Instead of anticipating an outcome and dictating urban development as a whole, the urban acupuncture concentrates on critical points that trigger general transformation. This strategy works from the bottom up, relying equally on citizens and city government alike.
3. Speedy deployment. Small-scale changes have immediate effects and permit early assessment, feedback, and adjustment. Compared with large-scale plans, they are more robust and less risky.

A good example is Lerner's first project, the *Rua das Flores*. One Friday evening city agencies initiated a blitz transformation of six inner-city streets. Within seventy-two hours and despite the resistance of local shop-owners, they created Brazil's first pedestrian zone. The message was clear: Curitiba was to be a city for people, not for cars.

Public Transit

From the very beginning, Curitiba's opposition to cars was about more than creating an idyllic inner city. Its designers wanted to use mobility and public transit to prevent urban sprawl. Its radial layout, based on a 1943 plan by the French architect Alfred Agaches, was arranged along five axes guiding public transportation and determining population densities: the closer the apartment blocks were to public transportation, the taller the buildings were permitted to be. The town's silhouette is a result of the modal split and directly reflects its types of transportation.

With neither the money nor the time to build a subway system, Curitiba's planners decided to create a mass transit bus system. The project – the world's first – did without widening city streets and purchasing additional property, saving enormous sums of money.⁵ It converted streets into three tiers. The first tier reserves two lanes for buses, with synchronized traffic lights giving them uninterrupted thoroughfare. The second tier is located to

the left and right of the bus corridor and contains lanes for local traffic. The third tier, for through traffic, consists of multi-lane one-way streets parallel to the main streets. The planners increased the efficiency of the bus system by designing tubular bus stops, simulating an above-ground subway system where ticket purchase and boarding are separated to increase efficiency. They also selected special 27-meter-long buses that can hold up to 270 guests.

The financing and operation of the system is based on a model that combines private and public funding. The city supplies the streets and stops, while private companies run the bus lines. In return for paying twenty-six companies a fixed fee based on service in kilometers rather than on passenger volume, the city keeps the ticket money. This approach balances out earnings across the system, supports outlying districts, and offers all residents the same price for the same services. The more people use the public transit system, the more money the city has to invest in new community projects. This positive feedback loop has allowed for continual improvement to Curitiba's local transit, ensuring it remains a more attractive option than private vehicles.

Waste Management

Curitiba's planning strategy relies on the synergy generated from close cooperation between its programs. For instance, the financing model for its local transit was also used to tackle the problem of waste management. As in many large Latin American cities, informal settlements (*favelas*) spread across the city's hills and flood plains, where waste collection service is impossible. Curitiba's government solved the problem by setting up central trash collection sites where residents can trade in their separated trash for bus passes. The city then sells recyclable materials to purchase surplus from farmers and distribute it to the needy as payment for collecting the trash. In 1990 – the year Germany introduced the recycling system *Green Dot* – the cart people, the so-called *carrinheiros*, were already collecting 70% of the city's recyclable material on their own initiative, earning Curitiba the environmental prize of the *United Nations*.⁶ Accompanying the waste management system was an information and education program that promoted environmental responsibility and awareness among school children. The children were supposed to share their knowledge with their families and in doing so spread the idea.

Integral Planning and Interdependency

In addition to its innovations in transit and waste management, the IPPUC has started programs for flood protection, the preservation of the city's open spaces, affordable housing, micro credit, and education. These too have been implemented in small steps and have strengthened each other mutually in their close cooperation. The resulting synergies allow isolated measures to improve the system as a whole, so that each achieves its full potential as part of a comprehensive strategy. This kind of urban acupuncture takes advantage of the emergent condition of the city. Planning is understood as a problem of organized complexity to be solved from the bottom up.⁷

Lack of Civic Involvement

Curitiba's difficulties are just as instructive as its past successes. The chorus of voices critical of Curitiba is growing despite the immaculate image cultivated by its planners over the past forty years. Its most glaring fault is the lack of democratic participation and the city's paternalistic attitude. As Teresa Urban, a local journalist and civil rights activist, argues, "the city's progressive urban planning was not initiated by a democratic process but rather by the military dictatorship that seized power in 1960 and ruled Brazil until the 1980s."⁸ Although many IPPUC initiatives depended on community involvement, the city's people were rarely included in discussions. Under the unwritten rules of the municipality they became complacent, engaging themselves only for urgent matters and trusting that city officials know best.⁹

These attitudes might explain the diminishing success of IPPUC programs. Over the last ten years the number of cars on the street has risen steadily, and by now only twenty-two percent of the city's garbage is recycled. As José Antonio Andreguetto, Curitiba's environmental spokesperson, put it, "the only thing harder than convincing people not to use their cars is convincing them to separate the trash." Even more worrying is the significant drop-off in efforts to educate the public on the importance of recycling.

These developments all stem from a basic problem: Curitiba's government concentrates on launching and publicizing new projects but tends to ignore them once in place. Paradoxically, the government's propagation of its achievements has often undermined their long-term success. As the number of top-down decisions increases, people's sense of responsibility decreases. Curitiba must work to reverse this process. Especially in light of resource shortages, the government must make people understand that it is their civic duty to keep these programs going. The city must put less energy in cultivating its international reputation and begin meeting the urgent needs of its people, such as providing working sewers and clean water.

From the City to the Metropolitan Area

Since the 1960s, Curitiba's population has grown from 350,000 to 1.8 million – 3.2 million if you count the larger metropolitan area. The image of Curitiba as "Latin America's green capital" and "the people's city" has attracted more than big businesses and investors. The city has become home to a growing number of migrant workers, most of whom have settled in the favelas at the edge of the city. The influx of the working poor has widened the social gap between the center and the periphery. These surrounding communities, some of which have competing interests, must be incorporated into the city's urban planning. Without the formerly centralized planning authority, the IPPUC has difficulties pushing through general measures at the local level for the good of the overall system. In its current state, the city is neither a geographic nor a political unity, yet environmental problems do not stop at administrative borders.

In light of these problems, city planners need both to find a vision for Curitiba's metropolitan area and to reawaken the civic responsibility of its citizenry. Doing the former requires linking city administrations and thinking regionally. Doing the latter requires facilitating citizen involvement. This can foster democracy and social justice. Above all else, however, it can teach the city's people that urban planning is their business too.

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1) See Oil Aicher, "Planung und Steuerung," Arch+ 98 (1989).

2) See Kris Herbst, "Brazil's Model City," Planning 9 (1992).

3) Jaime Lerner, *Acupuntura Urbana (Rio de Janeiro, 2003)*.

4) See the lecture by Jaime Lerner at the TED Conference 2007 (<http://www.ted.com>).

5) The cost for the bus system was approx. \$1,000,000 per kilometer. Compare this number with the \$100,000,000 per kilometer it costs to build a subway. See Lucian Kroll, "Creative Curitiba," *The Architectural Review* 127 (2007).

6) See Marta E. Fausto, "Planning Theories and Concepts, Implementation Strategies, and Integrated Transportation Network Elements in Curitiba," *Transportation Quarterly* 1 (1999).

7) See Jane Jacobs, "The Kind of Problems Cities are," in *Death and Life of Great American Cities* (New York, 1961).

8) Teresa Urban is a journalist and civil rights activist from Curitiba. See Arthur Lubow, "The Road to Curitiba," *New York Times Magazine* (May 20, 2007).

9) See Clara Irazábal, "Behind the Scenes of Wonderland: Re-assessing Curitiba's Planning Model," *Aula* 1 (1999).