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Sergey Pigach

# An Urban Mutagen

Chaotic and monstrous reincarnation of the Ciudad de los Palacios, Mexico's capital is often perceived as an unfortunate but natural outcome of demographic explosion, legendary corruption, and technocratic mismanagement. A closer examination of the matter, however, reveals that a great deal of artificial intervention helped the city mutate into the modern-day urban monster it is. Contrary to popular belief, Mexico City is not a policymaking failure, but a technocratic success: a consciously designed chaos, an orchestrated urban crisis. This experiment, which was made possible by an authoritarian centralization of power and has enormously benefited a very few, is notable not only for its scale, but also for a creative use of infrastructure as a powerful urban mutagen—with the most vivid example being the Mexico City metro system.

Infrastructure exists in a reciprocal relation with its milieu, each being in part the cause and the effect of the other. In the case of Mexico City's metro, however, this balance is deliberately shifted towards an explicitly top-down control of the environment, with infrastructure having become an exceedingly powerful tool for reshaping the city. This form of control is not a rigid system—rather, it is a system of controlled disorder that has ignited the fruitful crisis being witnessed today.

## A Radical Launch of the Metro

Infrastructure as a tool for the guided mutation of an urban space appealed to Mexican technocratic politicians, whose prominence within the PRI (Partido Revolucionario Institucional, or The Institutional Revolutionary Party) grew steadily after Miguel Aleman's administration (1946–1952). A

subway was offered as a remedy for the urban congestion that haunted the city's core, a site of active business development.<sup>1</sup> Yet, a proposal to build an underground network within a water-saturated subsoil of lakebeds located in an earthquake hazard zone underneath a city that sinks at a rate of 60mm a year did not seem particularly sane.<sup>2</sup> But with new technological advancements, and the increasing technocratic presence within the party, the real possibility of a metro began to take hold.

As a result, in the mid 1960s President Díaz Ordaz (1964–1970) pursued the development of Mexico City's modern subway network with conviction. The project was instantly sold to the public not only as an antidote for congestion and a salvation for commuting workers, but also as a crucial part of Mexico's "modernized" image to present to the world at the 1968 Summer Olympics.<sup>3</sup> All of these potential benefits (none of which actually worked out) were still insufficient to outweigh the great engineering complications that would be faced by the project.

The turning point that inspired Díaz Ordaz and his allies was twofold, and rooted in Mexico City's real estate market. The first and most obvious reason was the hope that subways would trigger downtown gentrification and boost land values, which would turn the city's core into an investment paradise for developers. Ideally, the metro would metamorphose the abnormally low-density historic centre into an area with a high-density land-use pattern—a desirable scenario for both the banking sector and the real estate market.<sup>4</sup> The second reason for the metro's construction lies exactly in its radical reformative and catalytic power. The PRI held that urban industrial production (which first manifested itself in the Import Substitution Industrialization of the 1940s and then in the Stabilizing Development of the mid-1950s and 1960s) created great inequality between rural and urban populations. This, in turn, triggered widespread rural migration that flooded urban areas across the country, and especially contributed to the rapid growth of Mexico City.<sup>5</sup> It was clear that the development of this

infrastructural apparatus would accelerate growth and cause the city's population to explode, again opening a whole new set of opportunities for banking and real estate forces.<sup>6</sup>

Not surprisingly, such a risky urban initiative found as many opponents as supporters. The pressure of uncontrolled expansion on deteriorating infrastructure, the spread of slum housing, and the astronomical costs of the project (almost 1.5 billion pesos in foreign lending, plus 900 million pesos from the Distrito Federal, or DF) could not be ignored. As an agent of expansion, the metro also scared Ernesto Uruchurtu, the city's mayor (1952-1966), since the sprawl outside Mexico City's DF borders would mean that part of the fiscal gains would go to the adjacent state of Mexico, and given that in the 1960s industrialists were starting to move outside the DF's limits, any further expansion foreshadowed considerable financial losses.<sup>7</sup>

Despite these warnings President Díaz Ordaz could not forgo the benefits the metro would provide, both for his allies and for himself personally. His decision was driven by ICA, a powerful Engineering and Construction firm that won the competition for the metro's construction and whose numerous affiliations, such as Banco del Atlántico, made enormous profits through real estate manipulation.<sup>8</sup> It is obvious that for ICA, which was involved in condominium construction as well as residential and industrial development across Mexico City, urban expansion was a best-case scenario, capable of drastically amplifying their profits. Díaz Ordaz himself had strong ties to the ICA by virtue of being married to a daughter of Borja de Navarrete, one of the firm's founders.<sup>9</sup> Provided with the powerful backing of his allies, Díaz Ordaz declared a media war on Uruchurtu and the metro's opponents, which culminated in a widespread bus strike that paralyzed Mexico City's core, thus demonstrating the necessity of an alternative mode of transportation.<sup>10</sup>

As a result, in 1967, ICA began the construction of the first Mexico City metro line. This infrastructural apparatus was launched

two years later, in 1969, and then rapidly and increasingly extended until 1972, when it reached a length of 42.4 km.<sup>11</sup> The layout intensified circulation in the downtown by encircling the historic core and stretching towards peripheral areas in all four directions. The subway's spatial arrangement was very much in tune with the PRI's fixation on centrality and the concentration of power, resources, and population in a single area. Despite the initial claims that the subway would help encourage decentralization, the first three lines were planned as converging towards a single circuit, enclosing what was thought to become in the future a cluster of large enterprises, enjoying centralized access to surrounding localities. Thus, the initial stage of Mexico City's metro can be viewed as a spatial imprint of an authoritarian mentality imposed on an urban space.

The system worked, but not exactly as expected by Díaz Ordaz, and definitely not as anticipated by the general public. The great controversy that accompanied the metro's inception did not allow President Díaz Ordaz to finish the construction in time for the 1968 Olympics. The plan to present the world with an image of a modern, technologically advanced metropolis was ruined—not only by a delay in the metro's construction, but also by a number of public protests that culminated in a massacre of students in the Tlatelolco area of the city.<sup>12</sup> Social tensions over the subway were further amplified by an increase in the cost of travel and commuting times for numerous workers. For many, it took four or five hours a day and numerous modes of transportation to get from their residences in Ciudad Netzahualcōyotl to the industrial areas of Naucalpan, Tlalnepantla, and Vallejo.<sup>13</sup>

Moreover, the metro's main purpose was not ideological, but spatial. Even though the metro failed as an advertising campaign for the metropolis, it worked perfectly well as a machine for urban transformation. It accelerated Mexico City's expansion and boosted the real estate market as initially intended. The horrifying urban experiment proved successful.

Over the next decade Mexico City witnessed a 56 percent increase in population, from 9.2 million in 1970 to 14.4 million in 1980.<sup>14</sup> As a side effect, the subway also helped to encourage tourism as it provided better access to the monuments of colonial architecture in the core, and also linked the majority of sports structures built for the Olympic games, such as Magdalena Mixhuca Sports City, Arena Mexico and Auditorio Nacional to name a few.<sup>15</sup>

Any policy that consciously pushes a city towards a self-destructive developmental path may seem like political suicide regardless of the financial gains, but not in the case of PRI. By encouraging hyper-speed industrialization since the 1940s, the party managed to achieve rapid economic growth after a decade of deep crisis.<sup>16</sup> Consequently, in the 1960s and early 1970s, the PRI enjoyed incredible public support, and their largest electoral support.<sup>17</sup> At the time, the question of perceived legitimacy was not the party's main concern, so such a radical intervention into the urban milieu as the metro was both socially affordable and financially beneficial. In any case, the successful launch of the infrastructural apparatus introduced a whole new level of technocratic intervention into Mexico City's development, which was further explored and modified in the decades to follow.

#### Symbiotic Recalibration

Even heavily centralized states can ignore public opinion regarding the radical transformations of the city only for so long. The scale of urban change caused by the discrepancy between the promised and actual benefits for commuters caused widespread discontent among the general public. In a populist effort to relieve the tensions, Díaz Ordaz's successor, Luis Echeverría (1970-1976), decided to declare a moratorium on any further extensions of the network. Very soon, however, it became apparent that, once triggered, urban growth could not be stopped, but only slowed down. At the same time, the inefficient bus system and the overcrowded metro promised

an impending transportation crisis. To solve this issue, Echeverría decided to follow in the steps of his predecessor and ally himself with pro-growth forces, such as the banking and financial sector, and real estate developers. As a result, in 1972 Mexico City Mayor Gomez Senties announced the government's plans to double the already existing network, which in turn led to further waves of large-scale technocratic intervention in the 1980s, 1990s, and 2000s.<sup>18</sup>

This time, however, the radical, highly centralized model was revised. It became clear that in order to sustain its already damaged legitimacy, the PRI would have to restrain itself from policies that affected the population in a highly negative way, even if this entailed financial losses for the party's allies. This situation triggered a shift in the technocratic logic away from a strict, infrastructural dictatorship, and part of this change comes from processes then occurring in numerous urban areas around the world. After the 1970s, Mexico City could not avoid the fate of many other metropolitan regions, and experienced a shift towards a post-Fordist, postindustrial system of production, and the rising prominence of tertiary activities.<sup>19</sup> This change resulted in an overall recalibration of the technocratic dogma away from the modernist preoccupation with resistant and centralized systems, and towards flexible, more resilient, and multinodal assemblages.

In Mexico's politics, this new approach manifested itself in a (hypocritical) decentralization of power that started with President Miguel de la Madrid (1982-88), who attempted to decrease the role of the state and provide more opportunities for opposition parties to compete within a more open system. However, the growing success of the opposition parties in local elections soon forced de la Madrid to return to more traditional strategies. His successor, Carlos Salinas de Gortari (1988-94), managed to take the illusion of democratization to a whole new level. As William Beezley argues, even though widespread privatization, secularization reforms, and the dissolution of the ejido

### Inception and evolution of the Mexico City Metro

# 1940

**Manuel Avila Camacho**  
(1940-46)

Urbanization-led industrial development

**Miguel Alemán**  
(1946-52)

PRI further reduces the tax burden on industrialists located in Mexico City

# 1950

**Adolfo Ruiz Cortines**  
(1952-58)

Confederación Nacional de Asociaciones de Hoteleros is founded

**Adolfo López Mateos**  
(1958-64)

Relocation of industry outside of DF's boundaries

# 1960

Stabilizing Development

**Gustavo Díaz Ordaz**  
(1964-70)

1968 Summer Olympics Tlatelolco massacre

Mayor Senties announces government's plans to double the existing network

# 1970

**Luis Echeverría**  
(1970-76)

Construction Starts

# Launch of the Metro

**Jose Lopez Portillo**  
(1976-82)

# 1980

**Miguel de la Madrid**  
(1982-88)

1985 Earthquake

Over two years Mexico invests \$1.796 Billion in development of Telecommunication Technologies

**Carlos Salinas de Gortari**  
(1988-94)

Extensive Urban Renewal Projects triggered by the massive transnational investments

# 1990

**Ernesto Zedillo**  
(1994-2000)

# NAFTA

# 2000

**Vicente Fox**  
(2000-06)

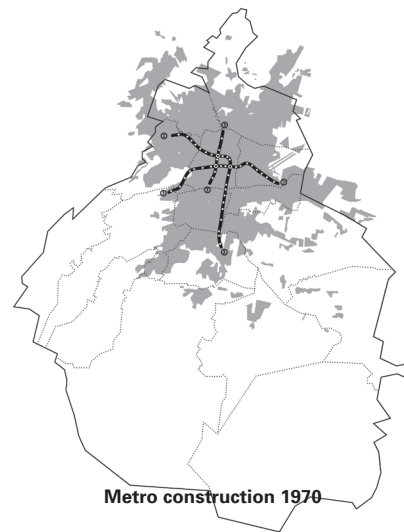
Programa de Rescate

**Felipe Calderón**  
(2006-12)

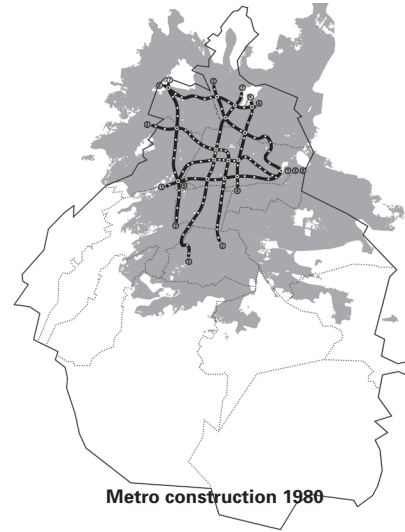
# 2010

**Enrique Peña Nieto**  
(2012-)

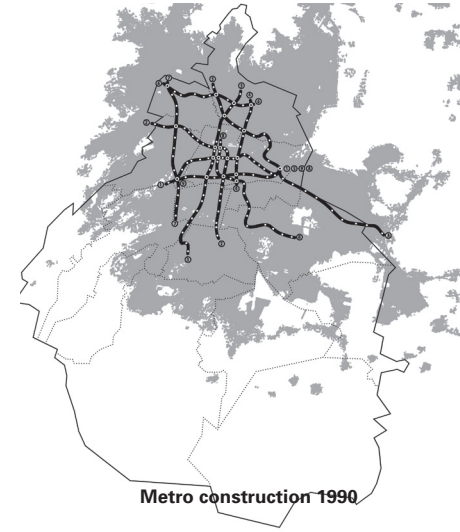
Completion of Line 12



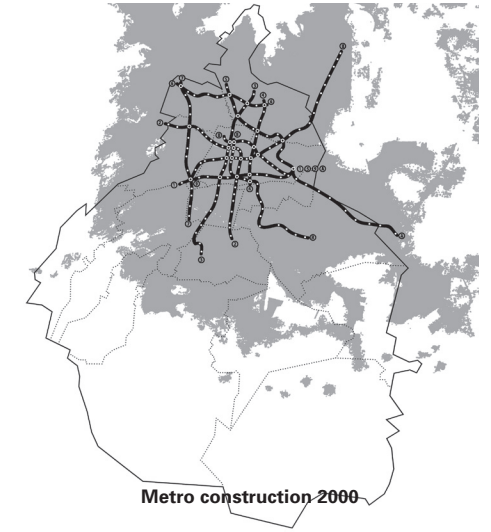
Metro construction 1970



Metro construction 1980



Metro construction 1990



Metro construction 2000

system of agriculture helped to decrease the state's influence on the economy, Carlos Salinas also did a great job in strengthening the presidency and keeping opposition parties under control: postmodern political resilience in action.<sup>20</sup>

Carlos Salinas's neoliberal adoption of NAFTA had a direct impact on Mexico City, particularly on its growth pattern, which in turn influenced the metro's development at the time. Just as Diane E. Davis predicted in her 1994 book *Urban Leviathan: Mexico City in the Twentieth Century*, the free trade agreement helped to shift attention away from the metropolis and redirect part of the migrant population towards northern border states. Indeed, in 1980 Mexico City employed 44.4 percent of manufacturing workers, and the border states employed only 21 percent, by 2003 the situation nearly reversed, to 21 percent and 35 percent, respectively.<sup>21</sup> The city's growth did slow down during this period, but did not stop completely, in part because of job losses in the agricultural sector (due to imports) and the *maquiladoras* (due to the relocation of assembly plants to countries paying lower wages in Asia); this resulted in a new wave of migration to metropolitan areas, with DF being a popular destination.<sup>22</sup>

The city changed not only in terms of its size, but also structurally. Set free by

NAFTA, vast inflows of transnational capital began to reshape Mexico City's urban fabric according to the necessities of large-scale businesses and commercial enterprises. Such giants as Hewlett-Packard, Mercedes-Benz, Chubb Insurance, and Televisa established headquarters in the Santa Fe area of the city, where 650 hectares of land had been dedicated to new businesses, shopping malls, and opulent residential developments. Paseo de la Reforma and fragments of Polanco, Insurgentes, and Periférico Sur underwent a radical transition from notorious low-income neighbourhoods to upscale residential and commercial areas built in accord with "first-world" standards. These new developments featured transnational hotel chains and large-scale shopping centres, which introduced satellite telecommunications, cable television, and multiplex cinemas to the neighbourhoods that just a decade previous would be considered the ultimate urban disaster.<sup>23</sup>

Changes in both Mexican politics and the capital's demographic situation influenced the subway's structure. During the 1980s and 1990s, the metro witnessed a vast expansion of its network, while in terms of being a top-down urban mutagen the subway was switched to "standby" mode. This constituted a temporary shift from infrastructural dictatorship towards a more neutral bottom-up logic dictating the

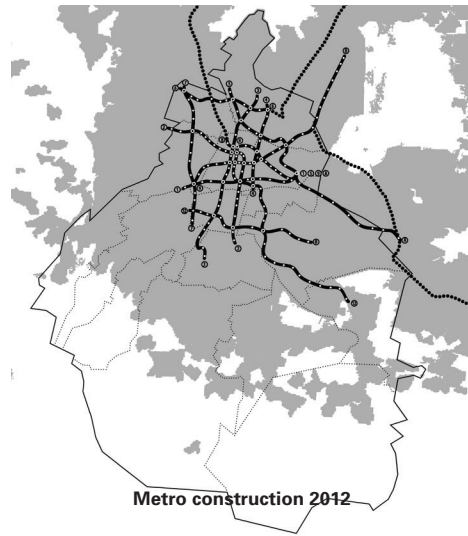
system's development. During this period, the geometry of the network also followed the path of decentralization, the new paradigm both professed by the government and evident in increasingly multinodal urban forms around the world. While in the late 1960s and early 1970s, the metro was supposed to connect the core to the periphery by means of radial and diametrical lines, over the next two decades new tangential lines started to appear.<sup>24</sup> The extensions of the subway system during this period were adapted to urban changes rather than deliberately driving them as before. The new lines were aimed at intensifying circulation in the first ring of the expanding metropolis, which experienced accelerating migration up to the 1990s, despite an overall slowdown in population growth during this period.

The fact that the government temporarily restrained itself from using the radical reformative force of the subway did not mean that it was ready to completely abandon this valuable utility. It became evident that in the given circumstances, redeployment of the subway as an aggressive growth agent was neither safe nor affordable, especially when there were easier means of gaining profit. It was the case that even though the initial employment of the apparatus greatly aided banking and real estate players, it did a poor job triggering gentrification in the core,

failing to spark high-density development in the area. When a new wave of growth was inconvenient and socially dangerous, it was time to pursue an alternative opportunity. The power source for this new urban transformation was also found in the realm of infrastructure; however, this time the honour of technocratic intervention belonged to the field of telecommunications. In 1986 and 1987, Mexico invested \$850.7 million and \$945.9 million, respectively, in the development of this technology, the lion's share of which went to the improvement of Mexico City's telephone infrastructure, which was seriously damaged by the 1985 earthquake.<sup>25</sup> These infrastructural improvements, in combination with metro expansion, boosted tertiary activities in the populous first ring, which by the year 1990 housed 1,844,491 workers employed in service-sector activities.<sup>26</sup>

All of the aforementioned processes contributed to the rise of Grupo Carso, its sister conglomerate Carso Global Telecom, and, in particular, the latter's daughter company TELMEX (Telefonos de Mexico). The Grupo Carso itself is a transnational multinodal entity owned by billionaire Carlos Slim, with investments in three continents. The Slim family, in turn, has large investments in real estate and other companies (including Reynolds Alumnio, Sanborns, Sears, Grupo





financier Inbursa, and so on).<sup>27</sup> This state of affairs suggests that a company invested in real estate and telecommunications would be highly interested in the densification and redevelopment of the Centro. And indeed, in 2001, when the proposal for downtown redevelopment Programa de Rescate was launched, Grupo Carso became a major sponsor of the project and even decided to relocate its offices to the city's core in order to encourage white-collar workers to move back to the Historic Centre.<sup>28</sup>

This second-wave intervention can be viewed as a return of infrastructural dictatorship in a more flexible, hypocritical, and populist form. Since its launch in August 2001 with good intentions, Programa de Rescate has caused as much controversy over political ethics and planning responsibility as did the metro proposal in the 1960s. The Programa is essentially an aggressive "roll-out-neoliberalization"<sup>29</sup> aimed at establishing surveillance and zero-tolerance policing in the Historic Centre by implementing such strategies as the "privatization of public space, the emergence of gated communities, urban disenfranchisement, economic and political exclusion, segregation and attacks on urban citizens' rights to the city."<sup>30</sup> It is noteworthy that during this period the metro served as the spatial backdrop for another infrastructural

mechanism, with which it created an almost symbiotic relationship. While the subway provided a connection between the current location and desirable location of middle-class residents (e.g. the first ring and the Centro), the telecommunication industry financially enabled the resulting processes of gentrification.

### The Crisis

Thus, since its inception in the late 1960s Mexico City's metro has helped to initiate major urban changes within the metropolis, whether by direct intervention in the city's growth pattern or through collaboration with other infrastructural mechanisms such as telecommunications technology. It is important to note that the Programa de Rescate was launched during the 12-year rule of the Partido Accion Nacional, the right-wing party that interrupted PRI's 71-year-long monopoly on power before it returned in 2012. This period is seen by certain scholars as a moment of crucial restructuring within the PRI, which made it an increasingly flexible, efficient, and sustainable political structure, whose present resilience allows for an even firmer grip on power.<sup>31</sup> Like the PRI, the metro was also rebooted and rethought as a profit-gaining opportunity, as was the case with other forms of Mexico City's infrastructure.

Although it is going too far to claim that the present-day urban crisis was planned from the beginning, the government has never hesitated to choose highly dangerous—and profitable—developmental strategies. The present-day crisis is the most financially fruitful outcome of this logic. The resulting condition of an urban catastrophe with a sprawling city suffocating from insufficient public transport, poor road infrastructure, scarce electricity and water supplies, and so on, is an investment paradise with unlimited demand for improvement. A usual antidote to further sprawl in such cases is densification through high-rise development, which has already begun in the Historic Centre by large construction firms such as URBI.<sup>32</sup>

However, building up necessarily requires an increase in transportation network's capacity on the ground.<sup>33</sup> Since in the case of Mexico City the employment of Intelligent Transportation Systems technology is impossible due to the lack of sufficient processing facilities and serious telecommunication issues, the problem is being solved by a "Supply Fix" transportation strategy, the implementation of which is evident from the direction and scale of foreign and local investment flows. For instance, since 2008, three lines of the Tren Suburbano—an extensive suburban railroad—were launched in order to connect the central city to the populous northern territories and outermost southeastern areas.<sup>34</sup> In October 2012, ICA completed Line 12, the longest line in the metro system, estimated to carry 367, 000 passengers a day.<sup>35</sup> Also, in 2013 President Peña Nieto launched a new program whose aim is to attract foreign investment to the development of Mexico's infrastructure, particularly the expansion of the suburban railroad network in Mexico City.<sup>36</sup> And finally, the ICA has revealed its plans to double the metro's length by the year 2020 by constructing five more lines, which would give the network a total length of 483 kilometres.<sup>37</sup>

Thus, in a curious way, the metro evolved from a means to an end (as a driver of urban growth that created favourable conditions for real estate development) to an end in itself (as a final destination for investment inflows). By driving Mexico City to a point of no return, the subway effectively created a demand for itself, as well as for other rescue measures that promise high profits for investors. For how long this situation can remain under relative control is unclear, especially given the recent acceleration of Mexico City's population growth, following more modest growth rates in the 1980s and 1990s. But in any case, Mexico City's metro is a fascinating exercise in the artificial engineering of urban space, and a bold experiment that evidently shows how changing regimes of power produce diverse physical imprints on the ground.

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- 5 Davis, *Urban Leviathan*, 151.
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- 7 Beezley, *The Oxford History of Mexico*, chap. 19 and Davis, *Urban Leviathan*, 162.
- 8 Beezley, *The Oxford History of Mexico*, chap. 19.
- 9 *Ibid.*
- 10 According to Diane Davis, the first bus strikes of the mid-1960s were organized by independent union leaders, which means that the inception of the protest cannot be fully attributed to President Díaz Ordaz. However, Davis and Beezley both agree that the strikes were later encouraged by being allowed to last for a long
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