

# ‘No bicycle lanes!’ Shouted the cyclists. A controversial bicycle project in Curitiba, Brazil



Fábio Duarte\*, Mario Procopiuck, Kelli Fujioka

Pontificia Universidade Catolica do Parana, Rua Imaculada Conceicao 1155, Curitiba-PR 80215-901, Brazil

## ARTICLE INFO

Available online 13 February 2014

### Keywords:

Bicycle policy  
Bicycle lane  
Controversy  
Curitiba

## ABSTRACT

After many years without any substantial improvement in bicycle infrastructure in Curitiba, a 4-km Leisure Bicycle Lane was implemented in the central area of the city in 2011. The project was one of several that City Hall hurriedly implemented following pressure from bike activists. On the Sunday the project was launched, more than three thousand cyclists are estimated to have used the bicycle lane; of these, 300 cycled alongside the lane, outside it, against it. They made the front pages of newspapers, disrupted the sociotechnical framework of bicycle policy in the city and put bicycles on the political agenda of the municipal elections. This paper discusses why, in a city renowned worldwide for its public transportation system and for having more than a 100 km of bicycle lanes, a bicycle project failed after being sabotaged by cyclists and was definitively abandoned in February 2013. Based on interviews with key actors, including public officials, journalists, and bicycle activists, this paper concludes that the failed bicycle lane unveils the profound and urgent social and political dimensions embedded in what had been presented by municipal authorities as a neutral technical solution.

© 2014 Elsevier Ltd. All rights reserved.

## 1. Introduction

Curitiba is an example of a city based on transit oriented development (TOD). Since the 1970s, buses have run in segregated corridors along 6 axes: North, South, East, West, Boqueirão and Green Line (under construction). Along the corridors, a four-block zone of high-density, high-rise buildings completes the bus-based TOD scheme.

Complementing the bus system, in 1977 the first bicycle path was implemented, partially linking Curitiba with a growing neighboring city to the east, and in 1980 new bicycle paths were implemented in the Industrial District. At this point, the main strategy was to use areas where there were restrictions on building, such as areas alongside urban rivers and abandoned or operating railways, to expand the incipient bicycle network. During the 1980s and 1990s, many urban parks were built in wetlands, with ponds being used for flood containment and control. Part of the bicycle network, which was built along rivers, links these parks. From this point on, the City of Curitiba considered and promoted bicycle lanes mainly as a network for leisure and well-being.

After many years without any substantial improvements in the infrastructure for bicycles in Curitiba, a 4-km Leisure Bicycle Lane

was implemented in the central area of the city in 2011. On the Sunday the project was launched, more than three thousand cyclists were estimated to have used the bicycle lane; among them were 300 who cycled alongside it, outside it, against it. In February 2013 the bicycle lane was deactivated. This paper investigates why cyclists came together to object to this bicycle infrastructure, deepening a sociotechnical controversy, and strengthening their influence on the reformulation of bicycle policy in Curitiba.

## 2. Conceptual principles to help in the understanding of controversy

Scientific and technological controversies rarely overrun the boundaries of discussions between experts to reach a broad public realm. On some occasions, however, such controversies involve political issues, as pressure groups, institutions, NGOs and even individuals come together for specific purposes and become actants of a sociotechnical framework along with traditional scientific and technological objects and their respective experts (Latour, 1999). As Venturini (2010, p. 262) puts, “controversies emerge when things and ideas that were taken for granted start to be questioned and discussed”, and when involved actors cannot ignore each other any longer.

When it comes to urban policy and urban technologies and infrastructure, technical discourse tends to prevail, and intense public discussions and conflicts between different groups are still

\* Corresponding author.

E-mail address: [duarte.fabio@pucpr.br](mailto:duarte.fabio@pucpr.br) (F. Duarte).

very rare—at least in Brazil. There are two possible reasons for this: first, during the decades under military dictatorship there was no space for controversy and, second, the generalized lack of basic infrastructure means that there is no polemics surrounding the need for sewage, urban drainage, paved roads and other infrastructure. In this scenario of a lack of basic infrastructure, technical controversies are anomalies, and when they do arise they are commonly dealt with in an “uncontroversial way” (Brante, 1993).

Nowadays, however, technological controversies are gaining political space. Technical objects are considered only part of a sociotechnical framework involving ideologies, social and economic pressures and personal preferences. These elements, which were previously considered to be separate from technology, became central actants in the search for socially constructed technical solutions rather than solutions that were merely the result of strict, bureaucratic technological procedures (Collins and Pinch, 1993). This would seem to reinforce the idea that “technology, as well as science, can [only] be understood as a social construct” (Pinch and Bijker, 2012, p. 19).

In actor-network theory, Latour et al. (1992) proposed that there is a heterogeneity and variability of associations between humans and non-humans that must be taken into account to understand society, especially its sociotechnical framework. Therefore, to comprehend the trajectory of changes in specific socio-technical frameworks it is important to bear in mind that technical artifacts themselves exert as much influence as scientists, engineers and social groups. This understanding leads us away from a hypothetical final optimum technical solution and opens up the possibility of finding a mix of possible solutions to satisfy technical and social purposes (Latour, 2007).

Based on this conceptual understanding of the sociotechnical framework, we propose to discuss the controversy surrounding the implementation of a bicycle lane project in Curitiba. To understand this controversy we gathered evidence of how different actors see the same object, mainly through interviews with actors directly involved in the controversy.

The controversy surrounding the bicycle lane project would suggest that a specific bicycle policy in a city known for its high-quality urban planning and transportation has little more to offer. This controversy may be seen as a turning point for the city, for it has shown that a bicycle infrastructure proposal had less to do with a technical solution than with conflicting political intentionalities of different groups.

In order to understand this controversy, we followed Venturini's (2010, p. 269) advice: “the cartography of controversies invites scholars to use every observation tool at hand, as well as mixing them without restraint”. We were at the bicycle lane inauguration; we took part in public meetings where bicycle policies were discussed, with the presence of public officials, activists, and academics; we followed closely all news published in the local newspapers. But mainly, while the controversy was still in its boiling temperature, we conducted interviews with the some of the most actors. We considered municipal politicians and technicians, bike activists and journalists as actors, and bicycles and bicycle infrastructure as actants.

The actors were chosen among those considered responsible for the project and for the protest. We have interviewed representatives of public authorities responsible for the project (IPPUC, SMELJ, described below), two activists of *Cicloguaçu* (a civil cyclists' association), and a city councilman. Opinions of others actors (from the Mayor to cyclists and academics) published by *Gazeta do Povo*, the most read newspaper, were also considered, as they gave us the context within which the controversy took place. As put Latour et al. (1991, p. 424), discussing controversies must consider simultaneously “the production of a ‘text’ and a ‘context’”; and “any division we make between

society on the one hand and scientific or technical content on the other is necessarily arbitrary”.

### 3. The sociotechnical framework of the bicycle in Curitiba

Even though the total length of bicycle paths in Brazil is not known with any certainty, the Ministry of Cities estimates, based on an Internet survey of 400 cities, that there are 2500 km of bicycle paths in the country. If only the 12 cities with more than one million inhabitants are considered, the corresponding figure is 483 km (Cidades, 2007, p. 37). In this scenario, Curitiba, with 114 km of off-street bicycle paths that are either completely segregated or shared with pedestrians, is considered an example of a bicycle-friendly city.

According to the Curitiba Institute of Research and Urban Planning (IPPUC), only 2% of Curitiba's 1.8 million inhabitants are frequent bicycle users, and of these, 90% use a bicycle for commuting. However, despite the worldwide recognition given to Curitiba's public transportation system – referred to by experts as a full BRT, or Bus Rapid Transit, system (Lindau et al., 2010) – bicycles are poorly integrated with it. Only two out of the 22 bus terminals have bicycle racks, and the bicycle network reaches only six terminals (Duarte and Rojas, 2012). This partly explains why non-motorized modes are under-developed in Curitiba even though the city is considered a benchmark in sustainable urban mobility (Miranda and Silva, 2012).

Fig. 1 shows the lack of connections between the BRT corridors and bicycle network in Curitiba.

In the last 10 years, the number of private cars in Curitiba has grown by 68%, or eight times the population growth in the same period (Denatran, 2013). Cycling on the streets has become dangerous, and reflecting the worldwide renewal in the popularity of bicycles, cyclists in Curitiba have started to ask for more infrastructure. These demands have attracted the attention of the local media, urban planners and City Hall. Seminars have been organized, the main newspaper has created a specific blog for bicycle-related issues and cyclists have taken part in technical meetings with the municipal technical committee for mobility.

### 4. The origins of a desperate project

As the municipal elections for mayor were being held that year, 2012 was a crucial one for bicycles in Curitiba. Promises to improve the bicycle infrastructure were included in all the candidates' proposals.

In 2011, pressed by bike activists, the media and experts, the mayor, who was running for reelection, decided to act promptly. On October 2011 the Leisure Bicycle Lane project was ready. IPPUC, the municipal planning authority, was responsible for the project. According to IPPUC's official interviewed for this paper, the bicycle lane would be 15 km long, would link various parks and would cross the city center. The first phase, implemented in the city center, consisted of 4 km of lanes closed to motorized traffic. The total cost to implement and operate this phase was nearly US 65,000.

Three municipal departments were involved in the initiative: IPPUC planned the route, SETRAN (the Municipal Traffic Department) was responsible for managing the traffic and SMELJ (the Municipal Department of Sport, Recreation and Youth) was responsible for operating the whole project.

The intention in implementing the bicycle lane in the heart of the city was clear: to show that City Hall was working to improve the infrastructure for cyclists. In the beginning, the Leisure Bicycle Lane opened only one Sunday a month, from 8 am to 4 pm. This was a very limited response to bicyclists' complaints and could hardly be deemed to address the need for improved cycling

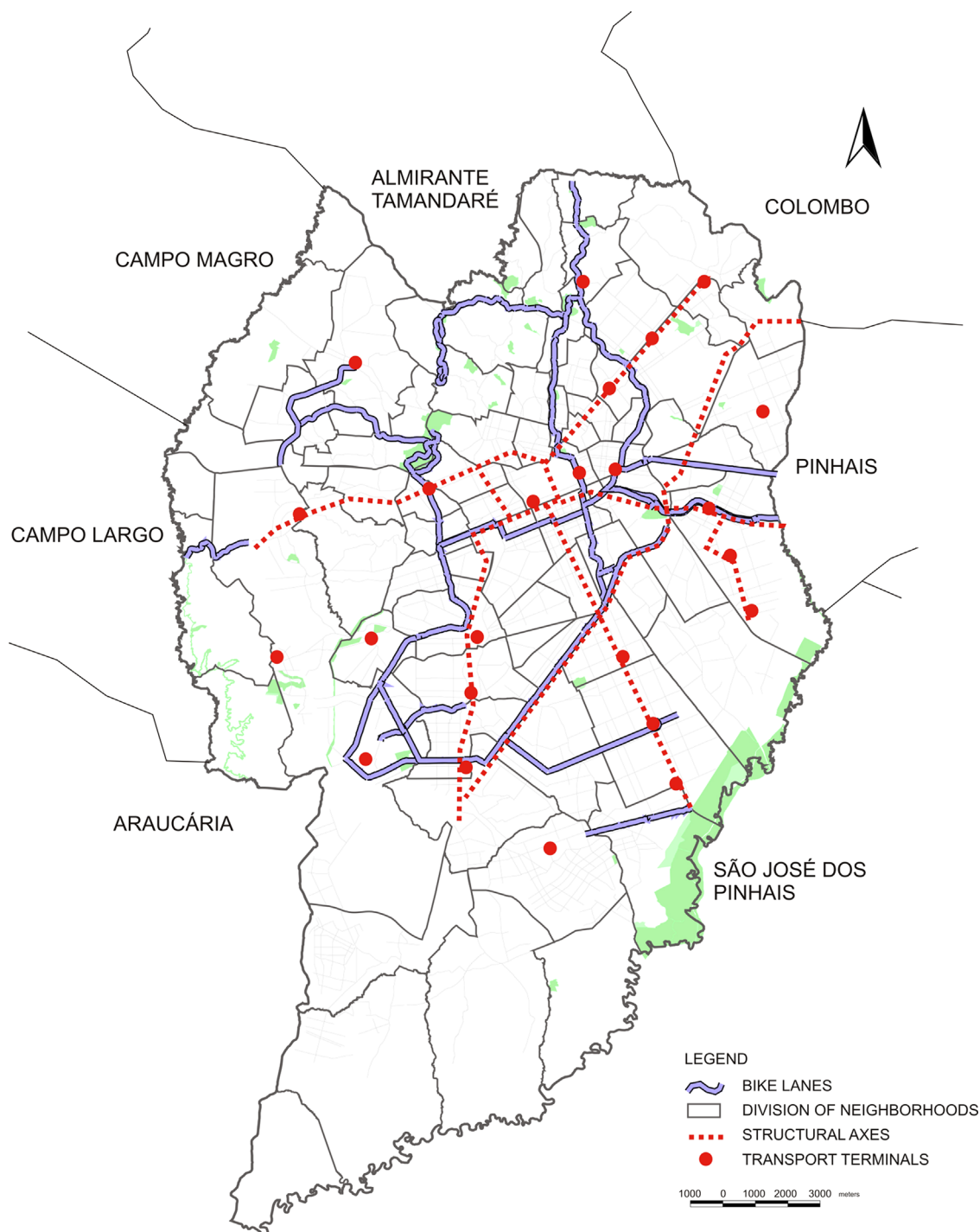


Fig. 1. Map of the existing bike lanes in Curitiba.

conditions. As for the infrastructure, the intention was that, with the expected success of the project, the private sector would become a partner, and the route would then be opened every Sunday. However, when the monthly project was bitterly mocked, City Hall extended the initiative to every Sunday even though a private partner had not been found.

#### 4.1. The opening day

It was a bright Sunday when the Leisure Bicycle Lane was officially launched on October 23rd, 2011. City Hall estimated that more than three thousand cyclists used the lane that day.

However, what was impressive was the 300 cyclists cycling alongside the bicycle lane, outside it, against it (Fig. 2).

After decades without any significant improvements in Curitiba and years of demands for a better bicycle infrastructure, why did so many cyclists decide to cycle against a 4-km long bicycle lane in the city center? Instead of being considered a sign of goodwill and a first step toward further investments in bicycle infrastructure promised by City Hall, the protest, which was reported on the front page of the most important newspaper in the state, was the visible manifestation of a fierce controversy.

Interest in this counter-intuitive behavior by cyclists – cycling against the Leisure Bicycle Lane – goes beyond Curitiba, precisely



Fig. 2. 300 bicyclists against the bike lane for leisure.

because it happened in Curitiba: a public-transport benchmark city with the most bicycle infrastructure per inhabitant of all the Brazilian state capitals (Mobilize, 2011).

## 5. Cyclists in Curitiba: An organized movement

*Bicicletada* is a national cyclist movement inspired by the Critical Mass movement, which was first organized on the West Coast of the United States in the 1990s and whose spirit *Bicicletada* shares: “a direct-action, anarchic event in that rides are unsanctioned by city officials and riders are motivated by self-determination, self-rule and non-hierarchical organization” (Furness, 2010, p. 80).

In Curitiba the movement began in 2005 with 30 participants. On September 22nd, 2012, this number had increased to two thousand. *Bicicletada* rides take place on the last Saturday of each month and are always along roads with heavy traffic, deliberately chosen to draw attention to the bicycle as a form of transport. *Bicicletada* acquired political significance in the city when, in 2007, a group of cyclists decided to paint a “pirate bicycle lane”, as they called it, in a very busy road. After several attempts to draw public attention to the extremely limited bicycle infrastructure in Curitiba, this “pirate bicycle lane” drew an immediate response from City Hall: the cyclists were prosecuted for environmental crime for interfering with a public space without permission. Nevertheless, the cyclists got what they wanted: media attention. From that point on, the number of articles in the news soared.

Public meetings were organized to discuss the lack bicycle policies. They gathered hundreds of bicyclists and got attention from media. City councilmen also started to attend these meetings—even though bicyclists said in the interview they did not contribute at all.

In 2010, the Sustainable Urban Mobility Bill (or Bicycle Bill) was launched by the *Voto Livre* movement (Free Vote, in English). In Brazil, anyone can propose a bill if it has the signatures of 5% of the voters, which in the case of the Sustainable Urban Mobility Bill meant that 65 thousand signatures were needed to present it to City Hall. However, before all the signatures had been collected, the bill was already being discussed by city representatives.

In 2011, *Cicloguaçu* was founded with the aim of putting political pressure on City Hall to improve the bicycle infrastructure. Including cyclists with academic and technical background among its participants, it was immediately recognized as a main actor in mobility issues and was invited to present its views on cycling policies to the municipal technical chamber for mobility, organized by the city councilman interviewed for this paper.

From the very beginning, *Cicloguaçu* was against the Leisure Bicycle Lane. The association’s reaction was so strong and received

so much support from the local media that three days before the project was launched *Cicloguaçu* was invited to a meeting with the mayor and other city officials, including the president of IPPUC and the secretary for sports, leisure and youth. City Hall admitted it had made a mistake by not including *Cicloguaçu* and other bicycle users in the initial stages of the project. Three days later, *Cicloguaçu* members were cycling alongside and outside the Leisure Bicycle Lane. And according to the city councilman interviewed, the choice between supporting the Leisure Bicycle Lane, as a sign of bicycle infrastructure improvements, and riding against it, supporting the bicycle activists, was a difficult decision.

During the interview for *Gazeta do Povo* immediately after the protest, and stressed during the interview with a representative of the movement, cyclists pointed out the following mistakes, which they have already addressed directly to IPPUC, SMELJ, and other city officials: according to the national traffic code, they argued, bicycles have to ride on the right side of the street, but the bicycle lane was on the left; some crossings had no signs, making them quite dangerous; there were no bicycle racks; and a monthly bicycle lane would be ignored by potential users and not taken seriously by car drivers, distracting attention from the real problems faced by cyclists in Curitiba.

## 6. Municipal and technical authorities

In 2008 the Municipal Mobility Plan was concluded, and it was expected that a detailed cycling plan would be presented by IPPUC. Although a further 280 km of bicycle infrastructure (bicycle lanes and bicycle paths) was to be added to the existing bicycle network, for four years IPPUC only presented drafts, and this only after political pressure from bike activists and the media—in our interview with IPPUC, the same drafts were presented. One argument for not improving the bicycle infrastructure was that there were budget constraints. However, what cycling associations most wanted was a comprehensive plan, and after City Hall started to develop a huge road plan to alleviate problems associated with motorized traffic in the city without considering the implementation of a bicycle lane, the budget-constraint argument was discredited.

Because of growing political pressure, City Hall decided to act, and IPPUC and SMELJ were asked to do something—indeed, anything. The Leisure Bicycle Lane project was the first initiative. During the interview carried out as part of the research for this paper, a representative of IPPUC stated that the project was not part of the comprehensive bicycle plan and had only been included in response to direct demands from City Hall. The Leisure Bicycle Lane was designed to link urban parks with the city center using traffic lanes that would be closed at the weekend to expand the bicycle network. Following the protest during the launch and criticism of various technical aspects of the project by cyclists, whose views were supported by transport experts in newspapers and TV shows, the planned expansion of the project was cancelled.

City Hall said that the presence of more than three thousand cyclists on the opening day of the Leisure Bicycle Lane demonstrated the success of the project. However, after a few months, fewer than 500 people used the lane every Sunday, according to SMELJ counts, presented during the interview with its representative. In January 2013, a month before City Hall definitively abandoned the initiative, this figure had dropped to 400—well below the number of cyclists using the other bicycle paths in town. The absence of cyclists, together with the negative image the project had acquired as a result of protests and criticisms, discouraged private partners from investing in the scheme.



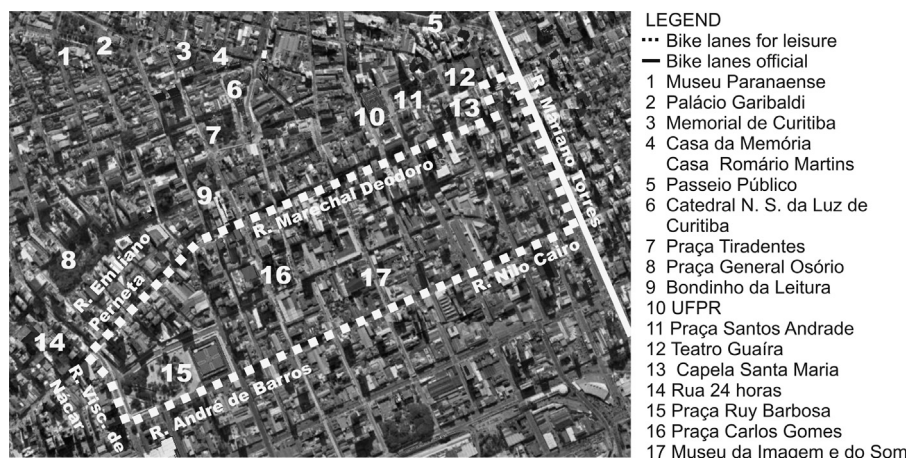


Fig. 3. Map of the bike lane for leisure.

The other 11 km, which were intended to complete the circuit, were abandoned.

SMELJ and IPPUC said that the protests were due to a misleading announcement. As the project was launched as a bicycle lane, cyclists were expecting permanent infrastructure in the city center, while the purpose of the project was leisure rather than transport. According to SMELJ, the Leisure Bicycle Lane was intended to bring people to the historical city center during the weekends. However, Fig. 3 shows that the circuit failed to link some of the city's important cultural attractions, such as art galleries and museums. Moreover, no bicycle racks were implemented to allow cyclists to park their bicycles while visiting or shopping in the historical center.

When interviewed for this paper, cyclists said that what was needed was permanent infrastructure for bicycles in the city center. IPPUC said that the bicycle lane in the center could not be permanent because the traffic in the city center is heavy and maintained that what was needed for bicycles in the city center was not infrastructure, but educational campaigns to enable different transportation modes to share the road. Yet it is hard to believe that such a campaign would help to reduce the number of cyclists injured in bicycle accidents (121 in 2011, considering only those hit by buses). Furthermore, IPPUC appeared to be ignoring bicyclists' behavior and opinions: based on a survey of 1449 non-exercise users, Broach et al. (2012) showed that cyclists value off-street bicycle paths and cycleways with traffic-calming features. This may be a minimal detail in a large project; but in a state of fervent controversy, any small detail triggers fierce disputes among actors and amplifies their disagreeing standpoints. Although they could not ignore each other any longer, after a deep state of mistrust had been installed, a compromised solution was out of reach.

## 7. Conclusion

The most bicycle-friendly of Brazilian state capitals, which has more than 100 km of bicycle paths, launched a 4-km bicycle lane. Instead of being a success, the project produced a strong reaction among cyclists, 300 of whom cycled against it.

At first glance this reaction would appear to have been an isolated protest against a specific project organized by a specific group demanding more and better bicycle infrastructure. Were this the case, it would follow that with a better-designed bicycle lane open every Sunday rather than once a month, no protests would occur, or that any that did occur would be isolated incidents and easily managed. However, the protest was echoed by the media and upset the status quo of bicycles in Curitiba, illustrating

the findings of Pucher et al., 2011 that, in North America, cycling advocacy groups can play a key role in promoting cycling and even changing public policies for cycling.

In this paper we have attempted to discuss the introduction of the Leisure Bicycle Lane as an icon of a deep-rooted political and technical controversy stemming from two views of urban mobility: on the one hand, City Hall, and on the other, cyclists.

What becomes clear in the leisure bicycle lane controversy in Curitiba is that, as several technical controversies, it was more a question of conflicting political standpoints than simply the search for the "best" technical solution.

The protest was the pinnacle of this controversy, which developed in parallel with the actions of *Bicicletada*, a group of cyclists who came together to form a critical mass in 2005. The movement's actions include bicycle rides along busy roads every month; a competition between bicycles, pedestrians, buses and cars during Car-Free Day to show which is faster (in Curitiba, bicycles); and bringing together young politicians, experts and journalists to discuss how to improve bicycle infrastructure in Curitiba.

For a long time, City Hall officials seemed not to realize that such movements had political power and technical expertise. Indeed, there appeared to be no reason for City Hall to worry as cycling accounts for only 2% of the city's modal share. However, the bicyclists' movement, technically prepared and politically engaged, successfully blocked an easy answer the City Hall rashly offered when political pressures for better bicycle policies arose.

During public meetings and interviews we conducted with city officials, particularly technical staff, they did not understand why such a fuss was being made in a city known for the excellence of its public transportation and for having the second longest bicycle infrastructure among Brazilian state capitals. Why was there such an outcry, after all?

City Hall had treated it as a problem of infrastructure, whereas it was a deepening structural problem in the municipal policies for mobility. When cyclists started not only to ask for more and better bicycle infrastructure, but also to give technical opinions about how it should be designed and operated, and how comprehensive mobility policies should be designed, the controversy intensified.

Once, in a meeting with cyclists, the president of IPPUC, the city's internationally renowned planning "think tank" (Campbell, 2009) asked, "What do you cyclists want? Do you want us to ask your opinion on every bicycle project?" He was astonished when the cyclists answered in the affirmative. What some city officials appear to be unable to grasp is that cyclists are bricklayers and shopkeepers as well as engineers, urban planners, doctors and journalists.

Whereas the "pirate" bicycle lanes painted overnight by the cyclists' movement a few years earlier were intended to reveal

the lack of bicycle policies in the city, the harsh protest against the leisure bicycle lane was a frontal refutation of a technical solution the municipality had repeatedly presented to reassert its authority over the public realm.

Considering any technical artifact as being socially constructed, the leisure bicycle lane controversy in Curitiba makes clear that:

- (a) Artifacts are embedded with social and political features, which, when not taken into account, may trigger unexpected reactions. In the case of the leisure bicycle lane, it was presented as a technical solution for a problem that had more profound and urgent political grounds;
- (b) Candidates and city officials tend to use the apparent a-political technical solutions in order to gain legitimacy, placate social demands and minimize political debates. As we have shown, “pure” technical solution is merely a rhetorical diversion.

When the municipal elections came in 2012, all the candidates presented their proposals for improving cycling facilities in Curitiba—a subject that had been almost completely absent in the two previous elections (2004 and 2008). The mayor, who was standing for reelection, did not get through to the second round, having lost by less than five thousand votes. On January 1st, 2013, the elected mayor went to work by bicycle. In February 2013 the Leisure Bicycle Lane was closed.

## Acknowledgements

This paper is part of a research program funded by Fundação Araucária and CNPq.

## References

- Brante, T., 1993. Reasons for studying scientific and science-based controversies. In: Fuller, S., Lynch, W. (Eds.), *Controversial Science: From Content to Contention*. SUNY Press, New York, pp. 177–192.
- Broach, J., Dill, J., Gliebe, J., 2012. Where do cyclists ride? A route choice model developed with revealed preference GPS data. *Transp. Res.: Part A: Policy Practice* 46 (10), 1730–1740.
- Campbell, T., 2009. Learning cities: knowledge, capacity and competitiveness. *Habitat Int.* 33 (2), 195–201.
- Cidades. (2007). *Caderno de Referência para Elaboração de Plano de Mobilidade por Bicicleta nas Cidades*. Ministério das Cidades, Brasília.
- Collins, H., Pinch, T., 1993. *The Golem: What Everyone Should Know About Science*. Cambridge University Press, Cambridge.
- Denatran. (2013). *Dados Estatísticos: frota de veículos por Tipo e Município*. Curitiba, Denatran. Available at: <http://www.denatran.pr.gov.br/modules/conteudo/conteudo.php?conteudo=194>.
- Duarte, F., Rojas, F., 2012. Intermodal connectivity to BRT: a comparative analysis of Bogotá and Curitiba. *J. Public. Transp.* 15 (2), 1–18.
- Furness, Z., 2010. *One Less Car: Bicycling and the Politics of Automobility*. Temple University Press, Philadelphia.
- Latour, B., Mauguin, P., TEIL, G., 1992. A note on socio-technical graphs. *Soc. Stud. Sci.* 22 (1), 33–57.
- Latour, B., Mauguin, P., Teil, G. (1991). Une méthode nouvelle de suivi socio-technique des innovations: le graphe socio-technique. In: VINCK, D. (Ed.), *Gestion de la recherche, nouveaux problèmes, nouveaux outils*. De Boeck, Bruxelles, pp. 419–480. Unpublished English Translation Available at: <http://www.bruno-latour.fr/sites/default/files/downloads/44bis-GRAPH-GB.pdf>.
- Latour, B., 1999. *Pandora's Hope: Essays on the Reality of Science Studies*. Harvard University Press, Cambridge.
- Latour, B., 2007. Turning around politics: a note on Gerard de Vries' paper. *Soc. Stud. Sci.* 37 (5), 811–820.
- Lindau, L.A., Hidalgo, D., Facchini, D., 2010. Curitiba, the Cradle of bus rapid transit. *Built Environ.* 36 (3), 274–282.
- Miranda, H., Silva, A., 2012. Benchmarking sustainable urban mobility: the case of Curitiba, Brazil. *Transp. Policy* 21, 141–151.
- Mobilize. (2011). *Estrutura cicloviária em cidades do Brasil (km)*. Mobilize. Available at: <http://www.mobilize.org.br/estatisticas/28/estrutura-ciclovitaria-em-cidades-do-brasil-km.html>.
- Pinch, T., Bijker, W., 2012. The social construction of facts and artifacts: or how the sociology of Science and the sociology of technology might benefit each other. In: Bijker, W., Hughes, T., Pinch, T. (Eds.), *The Social Construction of Technological Systems*. MIT Press, Cambridge.
- Pucher, J., Buehler, R., Seinen, M., 2011. Bicycling renaissance in North America? An update and re-appraisal of cycling trends and policies. *Transp. Res.: Part A: Policy Practice* 45 (6), 451–475.
- Venturini, T., 2010. Diving in magma: how to explore controversies with actor-network theory. *Public Understanding Sci.* 19 (3), 258–273.
- ALMEIDA, Cléver Ubiratan Teixeira de. O desafio da mobilidade multimodal. *Gazeta do Povo*, Curitiba, 09 de novembro de 2011.
- BRAND, Jorge; JARUGA, Rodolfo. Novos caminhos para a bicicleta. *Gazeta do Povo*, Curitiba, 09 de novembro de 2011. Opinião, Opinião do Dia.
- (no authorship). Faltam ciclovias. *Gazeta do Povo*, Curitiba, 31 de agosto de 2011. Editorial 2, Opinião.
- (no authorship). Busca por mobilidade muda perfil dos clientes. *Gazeta do Povo*, Curitiba, 18 de setembro de 2011. Economia, Negócios.
- (no authorship). Ciclistas em marcha no Dia Sem Carro. *Gazeta do Povo*, Curitiba, 22 de setembro de 2011. Vida e Cidadania, Mobilidade.
- (no authorship). Inauguração de ciclofaixa terá protesto. *Gazeta do Povo*, Curitiba, 20 de outubro de 2011. Vida e Cidadania, Mobilidade.
- FAVRETTO, Angélica. Ciclistas protestam contra “meia-faixa”. *Gazeta do Povo*, Curitiba, 22 de dezembro de 2011.
- NASCIMENTO, Alexandre. Artista cria bicicleta a partir do lixo. *Gazeta do Povo*, Curitiba, 14 de agosto de 2011.
- NASCIMENTO, Alexandre; RIBEIRO, Diego. Ciclistas pedem faixas diárias. *Gazeta do Povo*, Curitiba, 24 de outubro de 2011.
- NASCIMENTO, Alexandre. Os empreendedores do pedal. *Gazeta do Povo*, Curitiba, 14 de agosto de 2011.
- NASCIMENTO, Alexandre. Menos carros, mais bicicletas. *Gazeta do Povo*, Curitiba, 18 de setembro de 2011.
- RIBEIRO, Felipe; BARREIRO, Geovane. Transporte está saturado e é mais barato andar de carro do que de ônibus. *Gazeta do Povo*, 16 de fevereiro de 2012.
- WALTRICK, Rafael. A “jornada dupla” dos bikers. *Gazeta do Povo*, Curitiba, 10 de outubro de 2011.

## Additional reading—local newspaper