Return to the Rails: The Motivations for Building a Modern Tramway in Bilbao Spain

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Introduction by the Editors

"Return to the Rails: The Motivations for Building a Modern Tramway in Bilbao Spain" is the 60th research paper available in the Geography research paper series. Currently in its 35th year, this peer-reviewed series was created to provide postgraduates in the School of Geography exposure to the review and publication process of academic publishing. We hope that you enjoy this fascinating story of tramway development in Spain.

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RETURN TO THE RAILS: THE MOTIVATIONS FOR BUILDING A MODERN TRAMWAY IN BILBAO SPAIN

Abstract

Relegated from the streets of many major cities by the 1960s as an anachronism of an old urban order, the modern tramway has resurfaced as today's miracle cure to urban transport problems such as road congestion, air pollution and uneven access to transit. So why is there renewed interest in tramways? Using the recent development of a tramway network in Bilbao, Spain as a case study, this paper explores public transit projects for their potential to achieve both a tangible set of objectives and an intangible symbolic meaning that presents transit investment as being about more than just moving people.

Keywords: public transit, tramways, light rail, transportation investment

1. INTRODUCTION

Cities around the world are now facing critical choices about urban transportation investment. With automobile usage in urban centres continuing to rise, car congestion threatens to make existing roads and highways more like parking lots than *free*ways. This intensified use of the personal automobile and attendant road congestion has been linked to lost economic productivity, environmental degradation through the emission of greenhouse gases and other toxic pollutants, and unequal access to urban mobility (since it requires a certain level of wealth to own and operate an automobile). As a result, many cities are now grappling with the dilemma of finding a balance between investing finite resources in extensive new road building initiatives to serve the automobile, and investing in massive new public transit initiatives that promote a more sustainable collective transit alternative.

Within this context of contested resource allocation, the cure to today's urban transit problems seemingly runs on rails. Relegated from the streets of many major cities by the 1960s as an anachronism of an old urban order, the modern tramway (or light rail as it has been re-branded) has resurfaced as today's miracle cure to urban transport problems such as road congestion, air pollution and uneven access to mobility. Since 1980, some 70 light rail systems have been opened worldwide, compared with 38 new metros, and 7 mass bus-transit systems (Institute for Transport Studies, 2002). It so characterises the faddy nature of urban transport infrastructure investment, where yesterday's transport problem is today's miracle solution.

A variety of motivations underpin this renewed interest in light rail transportation systems. Based on a survey of managers at 30 mass transit systems in 11 countries, Mackett and Edwards (1998) identified six key objectives that guided investment in rail based mass rapid transit: reduced traffic congestion, general improvement of public transport, better access to the city centre, improvement of the environment, stimulation of economic and property development, and other factors that included symbolic

motivations. For Vuchic (1999), urban rail is seen to be a more attractive service to passengers than other modes of urban transit. Specifically, the long held perception in some jurisdictions of the city bus as the 'loser cruiser' or 'proletariat chariot' is replaced by the sleek, modern image of urban rail, thus making rail systems more able to attract passengers than other modes of public transit. The fixed nature of rail lines is also a catalyst for mutually reinforcing land uses, such as high density residential and commercial developments. Thus beyond the movement of people, investments in urban tramways are also seen to serve a valid urban development function.

However, studies showing systemic discrepancies between ridership forecasts and actual ridership figures suggest that in many contexts, light rail systems are not living up to their potential as people movers, thus minimising the potential for such systems to provide better accessibility, alleviate traffic congestion and environmental degradation (Richmond, 2001, Flyvbjerg *et al.*, 2003). Some commentators have in fact argued that investment in capital intensive light rail projects can worsen overall public transit service in a city, by redirecting resources away from services such as buses which carry the majority of transit users in most cities (Grengs, 2002; Richmond, 2005). Studies have also questioned the consistency and magnitude to which light rail investment actually ameliorate environmental degradation and stimulate economic and property development (Hall and Hass-Klau, 1985; Vickermann, 1999; Flyvbjerg *et al.*, 2003). In sum, for the numerous examples where light rail lines have met their ridership expectations, contributed to reductions in car usage, and successfully catalysed new economic activity, there are also numerous examples of systems that have failed to meet expectations. Moreover, even along the route of a single new light rail system, successful urban regeneration sites can often be contrasted against locations where new activity has failed to materialise.

In light of the inconsistent findings about the efficacy of light rail to meet their diverse objectives, why do cities continue to invest in light rail projects? First, for Wachs (1988) and Flyvbjerg et al (2003), articles such as 'When planners lie with numbers' and 'The lying game' illustrate that there is a systemic pattern of wilful misinformation on the part of project proponents. As Flyvbjerg et al (2003: 64) note, the projects which get built are not "necessarily the best ones, but those projects for which proponents best succeed in conjuring a fantasy world of underestimated costs, overestimated revenues, undervalued environmental impacts and overvalued regional development effects."

Conjuring this fantasy world, as Flyvbjerg et al put it, is based not only on the instrumental rationality of technical studies, but also on the cultivation of a vital image for urban rail projects which highlight such investments as a popular and politically viable solution (Richmond, 2005; Vuchic, 1999). As elaborated by Altshuller and Luberoff (2003), the continued investment in urban transit mega projects (such as new rail lines) in spite of their poor performance reflects both the political potency and private financial benefits of a pro-transit message. Transit resonates with a wide range of powerful interest groups, including downtown and construction related businesses, construction and transit labour unions, environmentalists, and advocates for the poor. Concurrently, the failure to invest in transit has 'great nuisance potential.' In this sense, transit investment is part of a confluence of business and political forces, which guides individual decision making.

With a general theory already in place that explains public transit infrastructure planning as a mixture of technocratic and political processes, this paper seeks to better understand the methods by which a vital image is ascribed to urban rail projects. Using the recent development of a tramway network in Bilbao, Spain as a case study, I will argue that decisions to invest in light rail infrastructure are about more than just moving people. They must be situated within a specific urban context and examined for their potential to achieve both a tangible set of objectives that can be quantified on a cost benefit analysis, and an intangible set of symbolic meanings. The added element of a symbolic motivation for transit investment can be seen as a by-product of an increasingly entrepreneurial model of city governance, which forces cities to make themselves attractive sites for globally footloose capital. Indeed, an efficient urban transit system has increasingly come to be identified as a requisite element of any city's desire to position itself as a productive and profitable site for economic activity, while presenting an enlightened image towards social equity and environmental preservation (Harvey, 1989). The end result is the construction of light rail systems that do not necessarily fulfil the immediate transit needs of the existing population, but are instead constructed for the urban imagery they project.

2. BIRTH, DEATH AND REBIRTH OF AN INDUSTRIAL CITY

Located in the Basque Autonomous Community in the north of Spain, the Bilbao Metropolitan Area is situated in a narrow valley between two chains of mountains, divided in the middle by the Nervion River. Covering some 370 kilometres square, the population of Bilbao extends down both banks of the Nervion until it meets the Atlantic Ocean.

For over a century, urban development in Bilbao has been closely tied to local and global cycles in industrial activity. From the mid-nineteenth century, the left bank of the Nervion river in Bilbao was a major site of iron ore extraction which was exported to iron and steel industries across Europe. The profits from mining were invested locally in complementary heavy industries, giving rise to a significant agglomeration of activities including iron processing, electrical, chemical and paper production. Accompanying this growth in heavy industry was the creation of an indigenous Basque financial sector that became the most dominant in Spain, with direct investments in banking, engineering and electrical power firms, shipping companies and steel manufacturing all across the country (Gomez Uranga and Etxebarria, 2000; Zulaika, 1998). Following the conclusion of the Spanish civil war and a decade long isolation from the Franco regime, Bilbao along with Barcelona and Madrid, experienced a second wave of industrialisation and urban development. In Bilbao, this resulted in a further specialisation towards heavy industry and metal works, and was also accompanied by a major influx of employment seeking immigrants from disadvantaged Spanish regions (Rodriguez *et al*., 2001).

Beginning in the early 1970s, Bilbao and the surrounding region experienced a steady period of economic decline as the previously strong manufacturing base began to erode under a structural crisis of Fordism. Structural crises are those that find their origin in a collapse of either the regime of accumulation, the mode of accumulation, or both (Boyer, 1986). Regimes of accumulation are defined as the broad articulation between

labour, capital and resources that guide economic activity and stability (Fordism, for instance, was one regime of accumulation). Modes of accumulation are the contextual frameworks of formal and informal laws, policies, customs, traditions and norms that support the existing regime of accumulation. In Bilbao, this structural crisis was precipitated by weakening demand for mature industrial products that were associated with an outmoded regime of mass produced industrial accumulation, combined with increased industrial competition from cheaper sites of production in the developing world. The effects of the economic recession were exacerbated and localised in Bilbao by inherent features of the process of accumulation in the Basque Country, including the concentration of industry and population in the city, extreme environmental and urban deterioration resulting from decades of minimally regulated heavy manufacturing, and poorly equipped productive and social infrastructures (Gomez Uranga and Etxebarria, 2000).

Despite great effort on the part of local and regional officials to increase foreign investment in manufacturing industries and create new markets for the region's traditional goods, such 'band-aid' solutions failed to favourably reposition Bilbao within the new global economy for manufacturing. On the contrary, employment in Bilbao's manufacturing sector continued to disappear, and joblessness rose steadily. Between 1975 and 1986, the unemployment rate in the city spiked from 2.3% to 26%, and a decade later in 1996, unemployment remained at 27% of the labour force (Eustat, 1996). The long-term inability to reinvigorate the local economy was not wholly unexpected, as academics have long posited that following a structural crisis of accumulation, only profound restructuring of the accumulation regime can provide a long term remedy (Boyer, 1986).

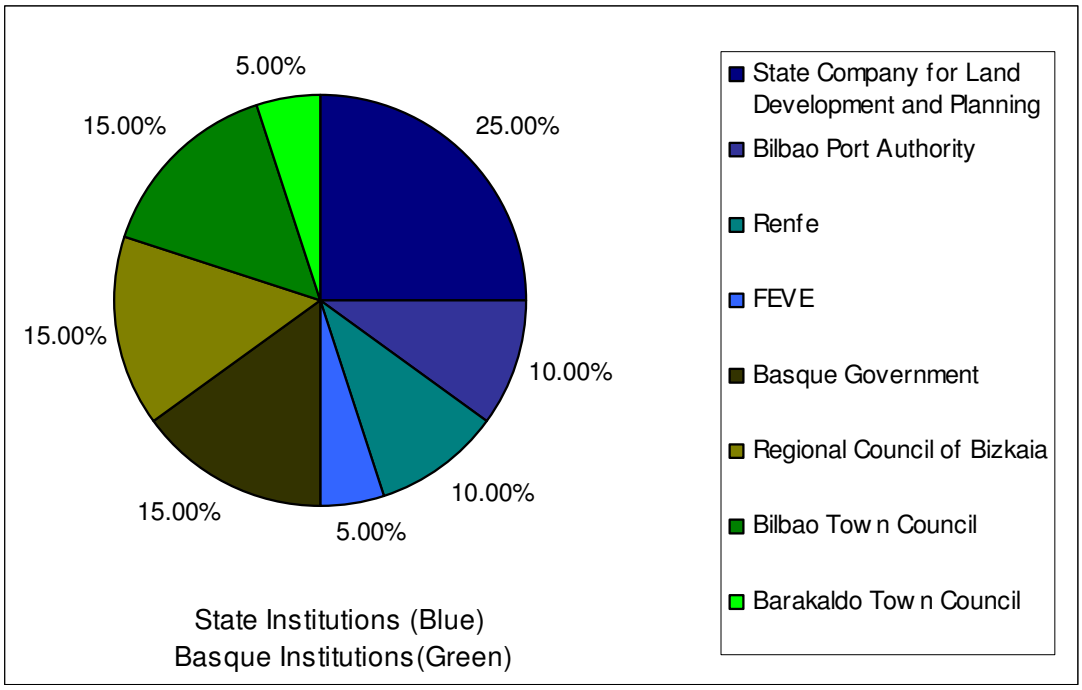
Yet while a number of other metropolitan areas in Spain such as Barcelona, Madrid and Seville were taking advantage of a national economic recovery to pour billions of pesetas into large scale civic building schemes, Bilbao seemed resigned to what *The Economist* (1993: 95) called a 'North Iberian parsimony' which was exacerbated by a leadership unable to galvanise support for redevelopment. This inability to forward development in Bilbao left residents and their built urban environment to wither under an oppressive economic recession, while providing little basis for hope of a rejuvenated city space (Rodriguez and Martinez, 2003). A government report published online in English by the Deputación Foral de Bizkaia (2002) reflected on the situation in Bilbao prior to redevelopment and its goals for the future as follows:

> "During the [19]80s both Bilbao and its citizens were in the throes of a crisis and decline period, with a feeling of pessimism about their future. A revitalisation scheme was required to shake its inhabitants awake, radiate hope and confidence in the region, generating attraction magnets overseas and sell its emerging international reality."

The process of redefining Bilbao to a global audience was finally commenced in the late 1980s, as a plan was created to restructure the local economy from being predominantly manufacturing dependent to a more diversified, post-industrial economic base. One catalyst for change came in the formation of a new urban revitalisation

programme called BilbaoRia2000, a consortium of Basque and Spanish state institutions that aimed to use massive, emblematic property redevelopment projects as a means of reinvigorating the economic, political, cultural and environmental landscape (See figure 1 below). While serving as a coordinating organisation between its members, BilbaoRia2000 has a primary function as a property redeveloper. Thus profits to fund other projects are generated for the consortium through the value added activity of land development that would have otherwise been captured by private industry (BilbaoRia2000, 2003).

Figure 1: Composition of Bilbao Ria2000 and Funding Proportions



Source: BilbaoRia2000 (2003)

What made the revitalisation efforts of BilbaoRia2000 and other involved agencies unique was its massive scope and grandeur. In fact, the scale of effort was so large that one article in *The Economist* magazine (1993: 95) quipped, "given Bilbao's relatively small size, the new project's scale makes it look more like a programme of full-blown rebuilding than urban revitalisation."

Centred around the flagship redevelopment of an ex-industrial waterfront site called Abandoibarra, the Bilbao redevelopment scheme has included a new concert hall, a conference centre and riverside park, a museum of modern art, a maritime museum, an underground metro, a network of modern tramways, an international airport, a renovated central railway terminal, a central bus station, a suspension bridge and a new downtown office tower for the government of Bizkaia. Yet differentiating this urban redevelopment from others undertaken by decaying industrial cities has been a decision to gamble on the morally enhancing, seductive nature of top quality modern architecture. A single glance

at the constellation of internationally prestigious architects that have undertaken projects in Bilbao – including Sir Norman Foster, Sir James Stirling, Cesar Pelli, Frank O. Gehry, and Santiago Calatrava, - reflects the city's desire to position itself as a "living museum of world architecture" (Deputación Foral de Bizkaia, 2002).

Through the undertaking of mega projects, leaders of Bilbao are actively trying to redefine the regime of capital accumulation in the city from one based on primary resource extraction and manufacturing to a more knowledge driven, tertiary based economy complete with an active financial sector and a vital tourism industry. To date, this strategy has been successful, with unemployment declining to 16% in 1998, a drop of 11% from the previous measurement in 1996. Over 52% of the city's economic growth is derived from the tertiary sector, while manufacturing still comprises 32% (Eustat, 1996). Furthermore, the bold design of the Guggenheim museum and accompanying wave of urban renewal projects has propelled Bilbao into international consciousness as a model for urban revitalisation and a tourist destination. Fuelled by lauding articles in mainstream media like the *New York Times* and *The Guardian*, the tourism industry now attracts over 1.4 million visitors to the city annually who generate nearly £130 million in revenue (KPMG Peat Marwick, 1999). It is within this context of large-scale urban renewal and re-branding that the current investment in rail based rapid transport in Bilbao must be viewed.

3. A TRANSIT RIDING METROPOLIS

Bilbao has a strong tradition of being at the vanguard of mass public transit investment and innovation in Spain. In 1876, the first tram line on the left bank of the Nervion River was constructed as a means of supporting the booming mining and industrial activity which had developed in the region. In the late 1880s, Bilbao was the first city in Spain to install an electrified tramway. The introduction of electricity allowed an expansion of the tram network to its zenith of twelve lines operating over 109 kilometres of service in the 1920s, and also facilitated an increase in coach size, speed and capacity (EuskoTran, 2001). As Bilbao's urban expansion continued into the second third of the twentieth century, the city was the first in Spain to install electric trolleybuses in 1940. This hybrid between a tram and a bus had transformed the European urban public transport industry, and it would do the same in Bilbao. A tram without tracks, a bus with electricity; trolleybuses provided the environmental benefit of emission free operation in the city without the high fixed capital cost of track installation and maintenance. By the late 1950s, only 6 million passenger trips per year were made by tram, compared with 37 million by trolley bus. In 1964, the tram made its last trip in Bilbao, as was the trend in many other European and North American cities. While the trolley bus continued to operate, it faced a strong challenge from the ascendance of the private automobile. As Bilbao's population grew and the city spread geographically, the traditionally close interconnection between residential and work locations which was favourable to public transit usage began to expand, resulting in longer distance commutes that were more conducive to automobile travel. Consequently, motorisation rates increased consistently, and the trolley bus finally succumbed to competition from cars and internal combustion engine buses in the early 1980s (EuskoTran, 2001).

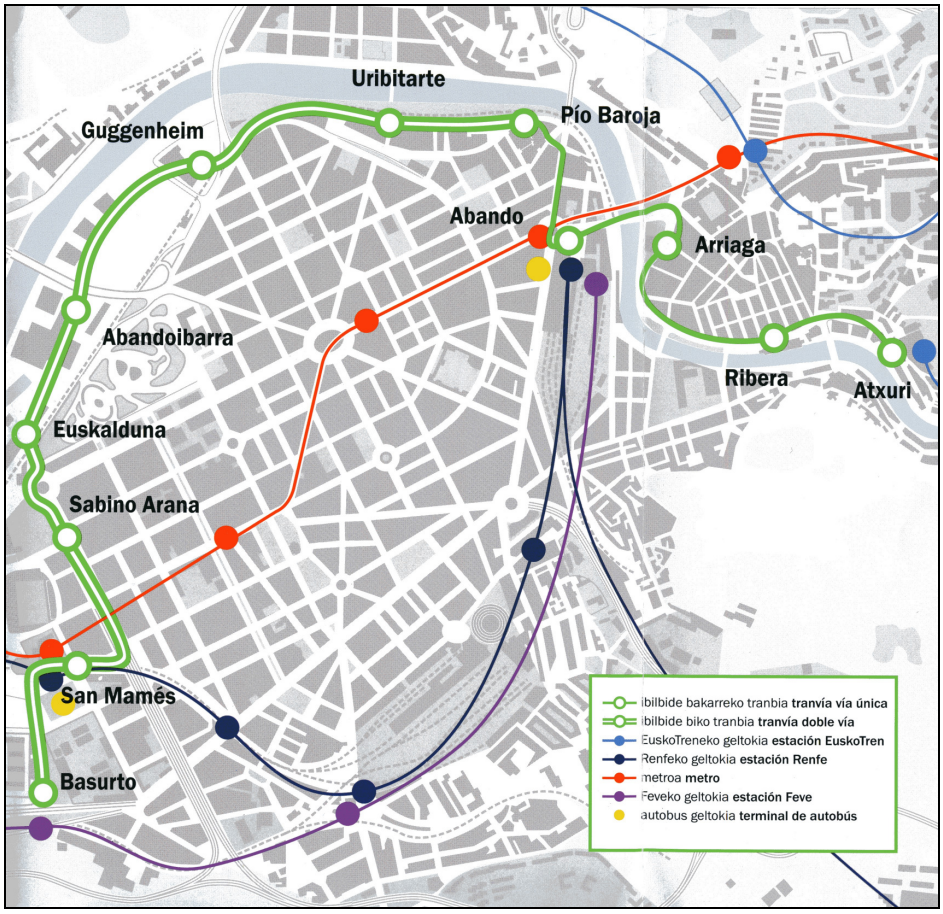
In the years that followed, the public transport system in Bilbao became characterised by depreciating service quality and a general inability to meet the evolving transport needs of the community. Greater road congestion made bus travel slower and there was a lack of integration between different modes of public transit in terms of fares and scheduling. Public confusion was exacerbated by the lack of a single organisation to coordinate public transport in the region. Depreciating service quality had the reflexive affect of shrinking public transit patronage while encouraging more car usage (Bizkaia Transport Consortium, 1996). Nevertheless the historical legacy of affordable and efficient public transport throughout Bilbao and the surrounding region has remained a strong source of civic pride that has carried through until the present.

The reintroduction of a rail based mass rapid transit system in Bilbao began in the mid 1990s. In 1996, after 15 years of debate and 7 years of construction, Line 1 of a new Metropolitan Railway (Metro Bilbao) was inaugurated at a cost of £410 million. Consisting of 27 stations designed by architect Norman Foster, Metro Bilbao was an immediate success. Carrying some 31.5 million passengers in its first year of operation, ridership has increased annually to nearly 56 million passengers in 2001 and Metro Bilbao has one of the highest operating cost recovery rates in Europe at 91%. In 2003, Bilbao inaugurated the first 5 stations of the Metro's Line 2 at a cost of £192 million (EMTA, 2002).

4. THE TRAMWAY PROJECT

Building on the momentum of its experience with the Metro, Bilbao has embarked on an intensive period of tramway construction that saw the first section of the £14 million Line A open in December of 2002. In the words of José Ramon Madinaveitia (2003: 27), Technical Manager at Bilboko Metrorako Ingenaritza AB, "light rail augments the metro's backbone." Thus the five kilometre long Line A links unconnected traffic generators in and around the city with the new developments at Abandoibarra. Figure 2 on the next page illustrates the route of the new tramway in green, the metro in red and inter-regional rail lines in blue and purple. In explaining the project purpose, Madinaveitia (2003: 28) continues, "An impressive panoply of buildings and centres lies along the route, which is set to make a significant contribution to communications in and through the centre of Bilbao." From Basurto hospital, the line runs past the inter city bus and coach station, the Euskalduna Conference & Performing Arts Centre, Abandoibarra's new hotel and business complexes, the regional government's administrative offices, the Guggenheim Museum, some of the City Council's administrative buildings, Spanish National Railways' main line station, the major shopping district of the Casco Viejo (the historic city centre) and the Arriaga Theatre (See figure 2 on the next page). The line finishes at Atxuri station, the terminus for the Basque Railway suburban services.

Figure 2: Tramway Route Map (Double Line)



Source: EuskoTran (2001)

In February 2002, a report entitled *Railway Services in the Functional Area of Metropolitan Bilbao* was released by the Basque regional government, which outlined the future applications of light rail in the Bilbao Metropolitan area. In particular, emphasis has been placed on connecting the southern part of the city by closing a ring that will serve Autonomia, Rekalde and San Francisco. Other proposals include the implementation of a light rail feeder link between the university campus on the outskirts of Bilbao and the Metro (Madinaveitia, 2003).

The Tramway Project: Tangible Motivations

The current city-centre tramway route provides improved accessibility to many of the newly redeveloped commercial and upscale recreational features of Bilbao's urban landscape (Madinaveirtia, 2003). As the network is extended outwards into the suburbs under its current expansion plan, residents in surrounding communities will become increasingly connected to the city centre via a direct rail link. This will further improve the equity of access to rapid intra-urban transport that was initiated by the construction of

Metro Bilbao (Gomez Uranga and Etxebarria, 2000). Additionally, as a system that has been either segmented entirely or given some form of priority over auto traffic (Elordi, 2002), the tramway can provide fast and reliable public transit service. It is thus hoped that the high service quality offered by the Tram will be able to attract residents out of their cars, reducing road congestion and auto emissions.

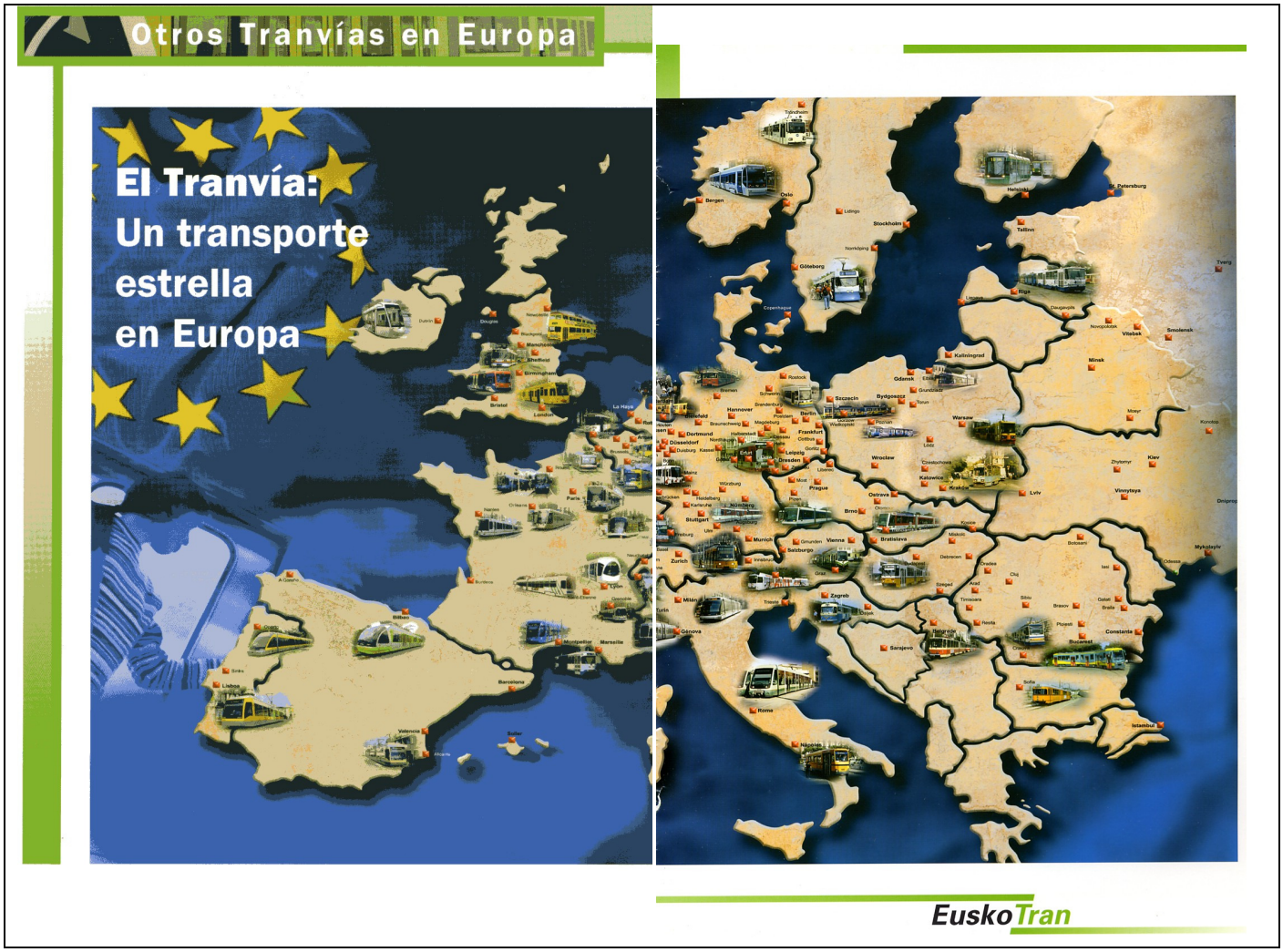
Furthering their commitment to the environmental benefits of the tramway, in July of 2003, the public tramway operator and energy company IBERDROLA signed a Green Energy contract guaranteeing that the 1.5 million Kilowatts/hour consumed by the tram will be generated using greenhouse gas emission free, renewable sources such as sun, wind and water. This makes the Bilbao tramway the first such system in the European Union to be powered by Green Energy (EuskoTran, 2003a). Linked to improved accessibility is the potential for the tramway to catalyse and complement property redevelopment. This is particularly the case with the Abandoibarra project, which has been a key motivator of the tramway Line A development. To quote Madinaveirtia (2003: 28), the Abandoibarra project "opened up the potential to develop a new light rail line more geared to the needs of a modern urban development."

Motivations for the Tramway Project: The Cultivation of a Symbolic Meaning

While Madinaveitia was referring specifically to the Abandoibarra project, the linkage made between light rail investment and urban modernity embodies one of the key symbolic rationales for investing in the tramway. According to Marshall Berman (1982: 6, 15) modernism is the ongoing "struggle to make ourselves at home in a constantly changing world," while striving to create "an environment that promises us adventure, power, joy, growth, transformation of ourselves and the world". Broadly defined, the struggle to be modern encompasses physical, intellectual, cultural and political activities, producing the conditions for interplay between the past, the present and the future. Enhancing transportation infrastructure can serve as a vehicle for furthering a sense of urban modernity, while providing a link between historical and contemporary community narratives. At the same time as cities around the world are introducing the new tramways as a means of efficiently and comfortably providing public transit and catalysing physical revitalisation, the development of a tramway in Bilbao has been used to reinvigorate the morale of the local populous and attract foreign attention by projecting an image of international competitiveness within the global economy.

This image has been carefully cultivated and presented to the public through an intensive marketing campaign by EuskoTran, the public corporation responsible for the tramway operation. In a tent erected in the city centre in December 2002 and on brochures handed out around the city, EuskoTran displayed maps of Europe depicting all of the cities in which tramways are currently being operated (see figure 3 on the next page). On the actual billboard in the marketing tent, the logo of each level of government that had funded the project was presented.

Figure 3: Tramways of Europe Promotion



Source: EuskoTran (2002a)

Through this marketing material, EuskoTran was emphasising that by operating a contemporary tramway, Bilbao had placed itself on a comparable international scale to the other European cities displayed on the billboard in terms of urban mobility and modernity. Furthermore, displaying the logos of the agencies responsible for the project on the same billboard as the map of Europe reinforced the message that this progressive initiative had not spontaneously materialised but was instead driven by the proactive and forward looking efforts of the government. To extend the symbol one step further, it appears as though a direct link was being made between the image of progress delivered by the tramway project and the political agents at all levels of government who had brokered the deal. Finally, this promotional message by EuskoTran may have been trying to justify the large financial investment in the tramway by showing how other cities across Europe had made a similar decision.

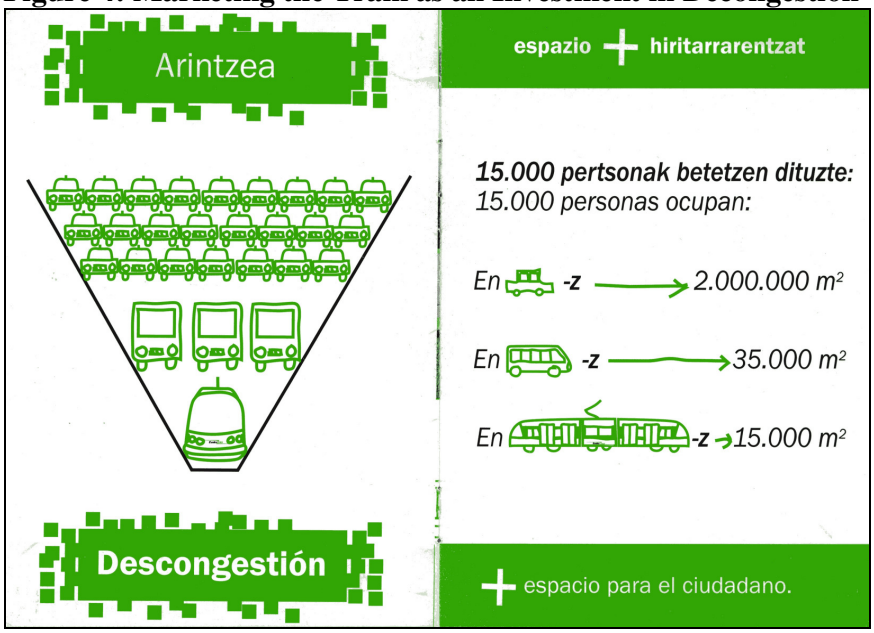
Yet for Bilbao, the new tramway has a greater symbolic meaning than simply projecting an image of modernity. It also provides a potent symbol connecting the city's past to future promise. With the long and illustrious history of tramway operations in the city as a means of providing public transit, the reintroduction of the modern tramway has been widely portrayed as a return to a halcyon era, when Bilbao was one of the most powerful cities in Spain. To capture this popular sentimentality, EuskoTran made a special effort to link the current tramway with its predecessor. In the EuskoTran marketing tent in the centre of Bilbao, a television displayed black and white video footage of the old tramway as it wove its way through the streets of Bilbao. On either side of the screen were poster boards proudly presenting the history and significance of the tramway in Bilbao up to its current incarnation. Thus through its marketing efforts, EuskoTran has projected an image of urban modernity and homage to the city's past experience with public transit.

Presenting a new deal for the natural environment of Bilbao has also featured prominently as a literal and symbolic motivation for the tramway project. In the Bilbao Metropolitan Area, road traffic has grown at a rate of 4% to 6% per year between 1994 and 2001, leading to extensive congestion and air pollution (Stockholm Partnerships, 2001). Additionally, the heavy industries that dominated the urban landscape in Bilbao for the first two thirds of the twentieth century have left many lasting environmental blemishes including 52 industrial ruins occupying 48 hectares of land (Zelaika, 1998), as well as a persistent reputation as grimy city (The Economist, 1993). Thus the construction of a tramway network which will be powered by certifiably "Green" electricity (and is hence emission-free at both the point of production and operation) has been widely offered as an opportunity to mitigate some of the air pollution currently caused by automobiles and buses in Bilbao, while presenting a renewed image of caring for nature.

To be certain, the government corporations created to design, construct and operate the tramway have been quite deliberate in cultivating an organisational culture and image that emphasises environmental protection. For IMEBISA and EuskoTran, the firms responsible for the tramway design, construction and operation, each crown corporation has been approved for the ISO 9000 and ISO 14001 certification, that together confirm the existence of an integrated quality control and environmental management system (EuskoTran, 2003b). The subscription to these internationally recognised certification programmes project a symbol of environmental care to the general public, which is backed by a verifiable set of protocols embodied in the standardisation agreement. Thus for IMEBISA and EuskoTran, the financial and time commitment invested to implement a quality control and environmental management system credible enough to obtain the ISO14000 certification illustrates both a literal and symbolic commitment to the environment. Further emphasis on the environmental benefits of the tramway in Bilbao has manifested itself through EuskoTran's introductory marketing campaign. For example, the system's potential to reduce carbon dioxide emissions and road congestion featured prominently in a series of promotional pamphlets released by EuskoTran in the months leading up to the tramway's inauguration (Figure 4 on the next page). By emphasising the environmental benefits and congestion reducing potential of the tramway in their marketing material, EuskoTran has suggested that these

variables are central to the community at large, and thus influenced the decision for constructing the tramway.

Figure 4: Marketing the Tram as an Investment in Decongestion



Source: EuskoTran (2002a)

As demonstrated in the previous section, the tramway project in Bilbao was tangibly driven by a desire to reduce road congestion, stimulate urban development, make the city centre more accessible and mitigate damage to the natural environment. Symbolically, the tramway was designed to elevate the spirits of the local residents by linking the city to its past, while portraying an image of urban modernity and optimism for the future. This understanding of the robust set of benefits that mass rail transit can deliver in Bilbao reflects the strategic nature of the local redevelopment process, which views public transport investment as both a means of moving people and as a critical element in the wider scheme to revitalise this once decaying industrial centre.

5. ASCRIBING MEANING TO PUBLIC TRANSIT PROJECTS

The ascription of meaning to public transit projects is an active process. Both the tangible objectives and symbolic meanings are constructed to fit within a specific urban context, and they are officially mediated by the agencies, organisations and individuals that are charged with planning the system. This necessarily implies a link between process and outcome, as those involved in the planning process have a dominant role in guiding the objectives and meanings that are emphasised by the project. With so much riding on those that are consulted in the transit planning process, many projects include some form of public consultation so that the meanings that are privileged reflect not only

the interests of the agencies involved but also the multiplicity of interests within the community. Of course the construction of meaning is not only a one way promotional effort. Following completion, constituent groups must internalise and interpret the messages that are being presented and what has been built based on their personal set of experiences, and then decide whether to accept or reject the tangible and symbolic meanings of the system. To this end, unofficial sources of information are important to guide perceptions, and the media for instance, can play an important role in how a system is accepted by the public.

Nevertheless, what becomes increasingly apparent is that the constituencies being targeted for approbation by contemporary transit systems are not limited to the local citizenry who will be the primary ridership base. On the contrary, public transit systems now promote a global image, seeking interest and approval from a diverse and geographically dispersed constituency including international investors, property developers and tourists. For example in Bilbao, one government sponsored website (BilbaoCity, 2003) extolled that the tramway "will connect the most emblematic buildings and parts of Bilbao," making it "destined to become a popular means of transport for residents and visitors alike, as, not only is it both comfortable and quick, it will also be an important tourist attraction." When meaning is ascribed in such a broad manner and is diversely targeted, the motivations for implementing a transit system can be about more than just moving people, and the new system may be deemed a success by its creators in spite of poor patronage. This is because in Bilbao, the tramway is not just being evaluated as a transport system, but in its contribution to the overall strategy of city renewal, which is constructed around image and symbolism.

The Bilbao Tramway: A Marketing Ploy?

As I was sitting on the right bank of the Nervion River on a warm spring afternoon watching the futuristic looking green trams pass on their way to the Guggenheim museum, it became apparent that something was amiss about this brand new £13,5 million piece of transport infrastructure: where are all the passengers? After two hours of observation, not a single tram had more than 20 people aboard. Furthermore, pre-construction forecasts predicted that the system would carry just 10,000 workday users upon its completion (EMTA, 2005). As illustrated by numerous studies (Edwards and Mackett, 1996), a bus line could surely accommodate this passenger load over the 3.3 kilometre stretch of operation between the city centre and the museum (Elordi, 2002), and likely at a fraction of the cost. Furthermore, if the tramway was not meeting its ridership expectations, then it was unlikely that the new system would reduce the number of cars on the road, thus contributing only minimally to its other tangible objectives such as reduced road congestion or environmental amelioration. So why was all this money spent on the tramway, and how was this lightly travelled route alignment selected?

The answer to these questions is seemingly embedded in the agencies and individuals that were involved in the system's planning. Specifically, the tramway in Bilbao was conceived and planned primarily by politicians and bureaucrats representing the interests of the Basque government and the inter-governmental land development consortium BilbaoRia2000. The City of Bilbao urban planning department was largely removed from the strategic planning process, and there was no formal public consultation

or participation. The result is a system that suits the interests of the organisations most prominently involved in its planning process, which at the time was to stimulate urban regeneration through upscale property development. Within this context, the value of the tramway has been constituted more in a symbolic imagery of renewed hope, commitment to progress and international competitiveness than as a means of improving urban mobility in Bilbao.

Let us begin by examining the route alignment for the tramway as a means of explaining the system's low ridership in the early years following inauguration. With its route selection along the waterfront, which passes the Guggenheim Museum and the new Abandoiberra development project, the tramway is in an ideal location to service the new tourist attractions and flagship office developments of the city. However, with the exception of the museum, the Abandoiberra project is still under construction. Furthermore the tramway is not situated near many existing residences. In fact, the few residents that are currently located near the waterfront area are separated from the tramway route by a natural cliff which acts as a physical barrier to using the tramway. The result is that nearby metro and bus stops are more accessible, and provide far better connectivity to the city as a whole. Thus at present, there is little in the form of connected trip generators along the route, and the tramway can be seen as part of a strategy to serve future transportation demand.

Certainly, when the office towers and residences are completed at Abandoiberra, and the tramway route is completed to its final alignment which will extend up to San Mames Metro station, patronage will increase, making the system more justifiable based on ridership. Internationally, evidence suggests that it can take a decade or more for ridership on new light rail systems to ramp up to forecasted levels, and in Bilbao, increased patronage on the current tramway is already observable. Between 2003 and 2005, the number of weekday trips grew by 34% to 8,700, although the current level of patronage is still 13% below the forecasted 10,000 users per day (EuskoTran, 2005). Yet the current increases in ridership fail to completely allay questions about why an alignment was selected which primarily services a tourist area and a new upscale development that is already well connected by existing modes of public transport such as the metro and the bus network, and has forecasted patronage levels that could be accommodated by other less expensive modes of public transit.

The answer to such questions appears to reside in the interests of the organisations involved in the redevelopment scheme that was taking place at Abandoibarra when the tramway was first conceived. Specifically, BilbaoRia2000, the main proponent and coordinator of the tramway project, was leading the redevelopment of the Abandoibarra property. Since BilbaoRia2000 derives its revenue for future redevelopment schemes from the proceeds of property sales that can be significantly influenced by public transport accessibility, the organisation has been explicit about using the tramway alignment as a means of increasing connectivity and boosting the attractiveness of the Abandoibarra site. However, perhaps at the real core of the selection and implementation of a tramway was the Basque government, who played a pivotal role in designing and implementing the tramway project in Bilbao. Since the mid 1990s, the Basque government, which is responsible for rail based transport in the BAC, has become increasingly supportive of using tramways as a strategy for alleviating urban traffic congestion (BilbaoCity, 2003). To this end, tram projects have been proposed in the

other provincial capitals of the Basque region, Vitoria and San Sebastian. However a lack of political consensus and sceptical local constituencies made the Basque government hesitant to implement tram projects in these cities. Filling the void was Bilbao, whose entrepreneurial public property development agency BilbaoRia2000 (of which Basque government corporations controlled 50%), saw an opportunity for the tramway. In addition to increasing localised property development at their new flagship development, many other cities around the world had introduced tramway systems which were rapidly becoming a symbol of urban modernity and a sign of a city willing to take an active role in solving transport problems. For Bilbao, there was an additional historical reference to constructing a tramway since the tram had been a major icon in urban transport and the city's development. Thus the construction of a tramway was seen to have the potential to further raise the profile of Bilbao's revitalisation programme, and hence attract new foreign interest and investment.

Yet probing deeper into why the Basque government has recently become so interested in tramway development across the entire autonomous community, another explanation is available. Many of the technology and construction contracts, from the tram cars, to the electrification, to the signals, to the physical track building, have been awarded to Basque companies, or companies with local subsidiaries. Thus there is an element of New Deal type job creation that belies this post-modern project, which is expected to be the first of a £116 million tramway investment program planned for the Basque region over the next decade (EMTA, 2005). In the case of the rolling stock, for example, the Basque train manufacturer CAF has been able to garner international publicity by showcasing its new tram products in Bilbao, while the city has been obtaining world attention for its progressive transport and urban development strategy. For example, a polished CAF tram car on the streets of Bilbao was displayed on the cover of *Urban Transport International*, a trade journal with a readership around the world. By contracting to CAF (whose two manufacturing plants in the Basque Country employ over 1600 people) and other local companies then, it is hoped that the Basque company will gain an international reputation for their tram related products and hence obtain contracts for projects in other cities. Not only would this benefit the private corporate investors, it would also stimulate a new round of local job creation in the manufacturing sector that was ravaged by deindustrialisation in the 1970s and 1980s.

6. CONCLUSION

As has been demonstrated in this paper, public transit projects are about more than just moving people. Transit projects are developed based on both a tangible set of motivations, and an intangible imagery. Furthermore the tangible motivations and symbolic meanings of a transit project do not simply materialise; there is not a generic set of objectives that can be attached to all transit projects. On the contrary, both tangible and intangible meanings are consciously constructed to fit within a specific urban context that includes urban history, city form, and past public transit experience. The motivations for constructing the tramway in Bilbao can be seen as an outcrop of the institutions that were involved and the process that was undertaken to make the project a reality.

Taking a broader view, the case of Bilbao helps to explain the continuing international trend towards light rail investment, even as empirical evidence suggests that such systems often fail to meet their mobility related targets. To be certain, the intricate politics of transportation planning as identified by Wachs, Flyvbjerg, and Altshuler and Luberoff remains salient in explaining investment decisions. Those in control of the polity and the tramway planning process in Bilbao illustrated a desire to maximise political as well as public and private financial benefits from the new system.

However, in addition to the political motivations, another more instrumental rationality remains present at the core of the tramway project in Bilbao. This rationality situates transit as being about more than just moving people. Transit investment catalysed and complemented transformations to the built urban structure, resulting in economic development to significant parts of the city. In a system of global capitalism where cities are in constant competition for international attention and investment, transportation infrastructure that promotes the free flow of people and the image of urban vitality has been viewed as a precondition for profitable enterprise, social advancement and environmental amelioration.

When the development of transit projects are seen to be driven by a combination of both tangible and symbolic motivations, new urban transit infrastructure can be deemed a success even if they fail to meet mobility related targets. Paradoxically, however, transit systems that fail to meet their mobility related targets are less likely to deliver desired tangible benefits such as congestion relief and air quality amelioration as forecasted, thus opening the door to renewed emphasis on road based initiatives that can reinforce the supremacy of the automobile at the expense of public transit. In light of this paradox, there is a need to question both the tangible and symbolic bases upon which transit investments are made.

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