Transport engineering and reduction in crime: the Medellín case

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SUMMARY

This study analyses the impact of the aerial cable car public transport system, locally known as *Metrocable*, in Medellín (Colombia), on the reduction in crime. As part of the municipal policies of social urbanism, Metrocable has contributed to the social integration of the population in the outlying neighbourhoods, which has increased safety in Medellín. This case is clearly of great interest from the point of view of Criminal Sciences, demonstrating how crime can be combated by using tools beyond *ius puniendi*.

1. INTRODUCTION

The first line of the Medellín Metrocable (line K) was opened in 2004. It represented a milestone in the field of transport engineering, not only in technical terms, but especially in its implications for social integration. Cable car transport, previously used for tourists, was transformed into a mass transit system linking up the city centre with districts in the mountainous periphery that were difficult to access (Leibler and Brand, 2012). The implementation of Metrocable, in conjunction with other local urban development policies, has helped make Medellín a more prosperous and safer place, where over the last few years poverty indicators and crime rates have been significantly reduced.

This paper aims to assess the positive impact that public works can have in the fight against crime. For this purpose, I will begin by discussing the mechanisms available to society to combat crime.

2. CRIMINAL LAW AND OTHER CRIME PREVENTION MECHANISMS

2.1 Criminal law as the main means of fighting crime

Criminal law is currently society's main means of combating crime. It is a means of social control aimed at preventing or curbing socially undesirable behaviour. It is differentiated from other means of social control, such as the family or religion, by its formal and highly institutionalised nature (Muñoz, 1985; Mir, 2015). In effect, it is Parliament which decides, through legal norms, what behaviour constitutes crimes (or administrative offences) and the penalties to be imposed those who commit them. Unlike other social norms, legal norms are backed by the powers of the State. Therefore, the courts are responsible, in

collaboration with the prosecution service and the law enforcement agencies, for imposing criminal sanctions.

Punishment has a three-fold function (Mir, 2015): (a) a *retributive* function, consisting of the execution of justice, i.e. the need to restore the legal order that has been violated by the criminal offence committed; (b) a *general-preventive* function, aimed at the community, which seeks to prevent crimes being committed, and (c) a *special-preventive* function, which is aimed at preventing previous offenders from re-offending. Together with these functions which are common to any type of sanction, custodial sentences have another important function that is recognised constitutionally, the "rehabilitation and social reintegration" of the offender (article 25.1 of the Spanish Constitution). Therefore, prison sentences must be aimed at the recovery of offenders and their reincorporation into society.

While in principle the retributive function can only be exercised through the instrument of punishment, the other three functions can also be fulfilled through other social mechanisms. In fact, criminal law is conceived as a last resort or *ultima ratio*, as a secondary mechanism that comes into play where there are no less intrusive means available to prevent crime (Orts and González, 2015). Whereas *ius puniendi* (in this case also including punitive administrative law) necessarily presupposes the committing of an unlawful act, so that if no crime or administrative offence has been committed, the public authorities have no legitimacy to apply the punitive instruments of the State. It is in these cases where extrapenal mechanisms should be mobilised to deal with social conflict.

2.2 Social inclusion as an alternative means of prevention

The State is responsible for ensuring public safety (article 149.1.29 of the Spanish Constitution), and therefore has the duty to create a threat and violence-free social environment. To achieve this, authorities have a wide variety of means at their disposal, ranging from instruments of intimidation, such as the establishing of punishment for behaviour which seriously undermines social order, to measures which deal directly with the causes of crime. Here we will focus on the latter.

On analysing criminal behaviour in depth, a combination of factors -psychological, social, family, etc.- are seen to be affecting the individual or individuals responsible for the behaviour. Of these, poverty or, more precisely, social exclusion may be the single most important factor influencing the committing of a crime (Antón, 2011). In light of this, the State can intervene in two different ways: (a) firstly, it can tackle the root of the problem by encouraging the social integration of marginalised sectors of the population; (b) secondly, it can isolate the socially excluded individual, keeping them apart from the urban setting, criminalising them or subjecting them to security measures that prevent them from harming the rest of society (Wacquant, 2010; Maqueda, 2015). The first avenue seems the most fitting in the context of a social and democratic State of Law, which is in place to guarantee the fundamental rights of its citizens, entailing equal access to opportunities and

resources. However, in reality the prisons are still full of the poorest people, which leads us to talk in terms of criminalisation of poverty (Cabrera, 2002; 2011).

Nonetheless, many strategies for inclusion have been implemented by the public authorities in different regions around the world. I am going to discuss the case of Medellín, where the crime rate has dropped significantly since the implementation of a series of social integration policies in which transport engineering has played a key role.

3. THE IMPACT OF METROCABLE IN THE REDUCTION OF CRIME

3.1 Metrocable and "social urbanism"
In 2001 the municipal elections held in Medellín were won by Luis Pérez Gutiérrez, the only mayoral candidate who was committed to the Metrocable project. This project, which was put forward by the public company Metro de Medellín, involved the installation of an aerial cable system connecting the isolated and marginalised neighbourhoods with the rest of the city (Leibler and Brand, 2012).

The Metrocable was included in the 2001-2003 Medellín Development Plan entitled Competitive Medellin (Alcaldía de Medellín, 2001), and its objective was to "fight uncompromisingly against crime, poverty, unemployment and the shortage of public space". This objective was consistent with the chaotic situation of the city at that time that had been scarred by the most violent period of drug-related conflict (1984-1993) (Polit, 2013). In fact, in 1991, Medellín was the most violent city in the world, with a homicide rate of 381 per 100,000 population. The neighbourhoods that were inaccessible from the city centre were controlled by organised crime and many young people were drawn into drug dealing and assassinations as a way of escaping from poverty. After the death of Pablo Escobar in 1993 and the dismantling of the Medellín Cartel, there was a reduction in the violence, but crime rates remained very high. In 2002, the homicide rate in Medellín was 185 per 100,000 population (Merchán and Arcos, 2011), well above the average for South America, which was 26 homicides per 100,000 population that year (Salama, 2008).

The first Metrocable line (K) was constructed in the northeast area of the city, connecting *Metro* Line A with neighbourhoods 1 (Popular) and 2 (Santa Cruz). Both neighbourhoods have a difficult, steeply sloping terrain that prevents the construction of railway lines, which gives good reason for the installation of an aerial cable-car system to enable access to these areas (Leibler and Brand, 2012). Metrocable started operation in 2004 and four years later the second line (J) was added, which crosses neighbourhoods 7 (Robledo) and 13 (San Javier), in the western central area. In addition Line L, the only one designed for tourist transport, was opened in 2010 (Empresa de Transporte Masivo del Valle de Aburrá Limitada, 2011). There are currently two other cable lines under construction, H and M, which will cover the eastern central zone (ACI, 2014).

Prior to the Metrocable project, the settlements on the hillsides of the city were severely impoverished and abandoned. The State had effectively lost territorial control over the areas to criminal groups in gang war over the illegal drugs trade who obtained money by extortion from businesses in the area. Both public and private investment in these neighbourhoods was progressively phased out as insecurity increased. Public funding and economic activity were concentrated in the socially peaceful and orderly areas of the city. As a result, the unemployment rates in neighbourhoods 1 and 2 at that time were three times higher than the city average (Leibler and Brand, 2012). During the 1980s and 1990s, in an attempt to regain control of the territory, the State implemented repressive policies that only served to rekindle the violence and conflict (Benavides, 2015).

Within this context, the 2001-2003 Development Plan marked a turning point for Medellín. It implemented an urban regeneration model of socially responsible investments in infrastructure, known as *social urbanism*, which, through the Integral Urban Projects, sought to repay the city's historical debt with the most impoverished sectors on the periphery (Dávila, 2009; Dávila and Daste, 2013). Metrocable has been central to this social integration strategy, since, firstly, it gives the population who live in the outlying areas convenient access to the city centre, thereby also increasing their employment opportunities, and, secondly, it facilitates the involvement of public institutions in these areas. Thus, over the last decade the neighbourhoods affected by Metrocable have benefitted from a significant increase in public funding for the provision and improvement of infrastructure and public services, such as libraries, schools, parks, bank branches, etc. All this is the result of the implementation of municipal policies based on the principle of spatial justice, i.e. the reduction of the inequalities between different parts of the same region (Leibler and Brand, 2012). To give an example, in 2014 the unemployment rates in neighbourhoods 1 and 2 (11.48% and 11.19%, respectively) were only three percentage points above the average for the city (8.8%) (Departamento Administrativo de Planeación, 2015).

The successful formula of Metrocable has been exported to other Latin American regions, such as La Paz (Bolivia), Sao Paulo (Brazil), Caracas (Venezuela) and Quito (Ecuador), where it is expected that the aerial cable cars will also contribute to social development (Chamarro, 2015).

3.2 Reduction in crime in the neighbourhoods affected by Metrocable

Social integration policies carried out by successive municipal governments in Medellín since the introduction of Metrocable have had a positive impact in the area of crime. This is demonstrated in a study carried out by researchers at the University of Columbia (US), published in the prestigious *American Journal of Epidemiology*. The article, entitled *Reducing Violence by Transforming Neighborhoods: A Natural Experiment in Medellín, Colombia* (Cerdá et al, 2012), compares the decline in violence between 2003 and 2008 in neighbourhoods 1 and 2 ("intervention neighbourhoods") compared with other

neighbourhoods in the city with similar characteristics but not affected by the Metrocable ("control neighbourhoods"). The result of the study showed that the drop in homicides over this period was 66% times higher in intervention neighbourhoods than in control neighbourhoods. The reduction in violence is attributed in the article to the improvement of public spaces and the creation of new institutions such as local committees. The involvement of the Medellín administration in the improvement of neighbourhoods 1 and 2 gave local residents a sense of belonging to the city and trust in the authorities that led to a greater willingness to cooperate with the justice system and to accept police intervention in those cases in which the social harmony was threatened.

Borraez (2015) provides some significant statistics: in neighbourhoods 1 and 2 where there is a Metrocable station (Andalucía, Popular and Santo Domingo), the average homicide rate was reduced by 88% in 2004-2008 compared with the figures for 1999-2003. In contrast, in other neighbourhoods not affected by the Metrocable, the reduction in the homicide rate was, in some cases, less than 20% (Belén and Castilla) or it even increased (Robledo and Manrique).

However, Line J of Metrocable does not appear to have achieved as positive an impact as Line K. During the period 2012-2014, 15% of all violent deaths in Medellín took place in neighbourhoods 7 and 13, well above the 4% of neighbourhoods 1 and 2. There is a similar pattern for property offences. Robledo was involved in 9% of thefts, while Popular and Santa Cruz were involved in 1% each (Medellín Cómo Vamos, 2015). This difference is explained, perhaps, by the fact that the municipal policies most committed to social urbanism were developed while the mayor Sergio Fajardo was in office (2004-2007), when J line of the Metrocable had not yet been built (Echeverri and Orsini, 2011).

4. CONCLUSION
The case of Medellín is an example of how it is possible to fight crime through mechanisms other than the application of criminal law. Given the failure of the repressive policies applied in Colombia during the 1980s and early 1990s and the questionable effectiveness of the peace processes which took place in the years that followed (Benavides, 2015), the social urbanism projects developed in Medellín in relation to Metrocable have proved effective as a crime-prevention tool.

Metrocable has been key to the social integration of the population in deprived neighbourhoods who were cut off from the city centre. It has supported the creation of a climate of peaceful co-existence in which there has been a significant decline in crime rates. However, as noted throughout this study, Metrocable is not, on its own, enough to combat crime, but must be accompanied by a complete package of measures to promote urban development and social integration.

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