



People and parking requirements: Residential attitudes and day-to-day consequences of a land use policy shift towards sustainable mobility



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ABSTRACT

A land use policy shift is taking place in a growing number of cities regarding parking, whereby a conventional supply management approach is being replaced with a parking management approach. As part of this policy shift, many cities are lowering their parking requirements. This study analysed changes in car use, car ownership, spatial parking patterns and the consequences for the everyday life of residents in a housing area with a relatively restrictive parking requirement in Gothenburg, the second largest city in Sweden. The housing area, a concrete example of how lowering parking requirements can be used to achieve targets on reduced car use and sustainable urban development, is used to discuss how parking policy should be applied to achieve the desired effect. The results show that the consequences of the restrictive requirement was paradoxically small in the study area. In practice, the requirement did not result in a decrease in the number of parking spaces, because e.g. of access to parking in neighbouring residential areas. This shows how important it is to adopt a holistic approach in parking policy, by e.g. introducing more restrictive parking requirements in parallel with other measures, such as raising parking charges and decreasing the number of public parking spaces. It also shows that planning of parking must be coordinated with other urban planning functions. Otherwise, the actual contribution of a shift in parking policy to the development of a more environmentally friendly transport system and city risks being small, despite lower parking requirements.

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1. Introduction

Parking is a critical land use issue (Ison and Mulley, 2014) and because it is very land-intensive, it prevents alternative land uses (Marsden, 2014). Consequently, there is an ongoing policy shift whereby many European cities are reducing the parking allocation in residential areas by lowering the parking requirement, i.e. the compulsory number of parking spaces per unit provided in residential developments, in order to influence the levels of vehicle ownership and car use (Foletta and Field, 2011; Kodransky and Hermann, 2011; Usterud Hanssen et al., 2014). This shift has occurred in a context of changing planning practices driven by new planning challenges such as climate change and managing a transition towards sustainable mobility (Banister, 2008).

In this paper we analyse two interlinked problem areas in parking policy and planning that require in-depth scrutiny. The first area, which represents the main focus of the study, concerns the consequences of lowering the parking requirement for residents. Despite calls to reduce the number of parking spaces, there is little knowledge about the effects of the measures suggested by research and already implemented in urban planning. According to Marsden (2006:256), we do not know: “[...] nearly enough about how individuals respond to parking policy interventions or how these responses interact with local circumstances, the availability of alternative transport modes or alternative destinations”.

In the past decade, research has clarified some aspects of how people are affected by changes in parking requirements (Weinberg, 2012; Guo, 2013a, 2013b). Research on parking effects has studied the number of car journeys, the length of car journeys and how car and public transport use is correlated with the parking supply (see Guo (2013a) for a review). This research has mainly focused on parking at the end of a journey, e.g. in out-of-town commercial retail areas or in city centres (Weinberg, 2012; Guo,

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2013a). Other studies have analysed how the parking requirement (together with other factors) affects the modal choice at home. Furthermore, research has concluded that residents own more cars, make more car trips and drive longer distances if there are many parking spaces along their street at home (Guo, 2013a, 2013c). However, in a study in central and outer London, Liebling (2014) showed that a reduced number of residential parking spaces did not limit growth in car ownership in the outer rim (10 km outwards) due to lack of an orbital rail/underground and bus services to provide the access required by modern life, such as shopping, social activities, taking children to school and so on. Accordingly, residents tend to drive to destinations that are relatively well provided with public transport if their parking requirement is generous (Weinberg, 2012), which thus risks out-ranking public transport. Nevertheless, parking in general and residential parking in particular is an under-researched area (Weinberg, 2012; Guo, 2013a; Guo, 2013b). Moreover, even the ‘high’ parking requirements of the past have not been well studied in cities. In particular, there is a lack of research about the views of individuals affected by changes in parking requirements (Nederveen et al., 1999; Guo and McDonnell, 2013), despite the fact that the parking supply may have a greater impact on residents’ car ownership and car use than income and demographic factors (Guo, 2013b). According to research on transit-oriented development (TOD), access to parking is more significant for the proportion of journeys made by public transport than proximity to a railway station (Chatman, 2013).

The second area examined in the present study concerns parking policy and planning. Previous parking research calls for a more strategic and evidence-based approach in cities (e.g. Mingardo et al., 2015). Such a strategic approach requires the full integration of parking policy and planning within general urban and transport policy and planning, according to Mingardo et al. (2015). A truly strategic parking policy and planning approach would also require parking requirements to be tailored to local conditions, such as housing density, public transport provision etc., in a well-balanced way. To the best of our knowledge, no previous study has analysed how the consequences for residents interact with decisions in parking planning where the requirements are tailored to local conditions.

The aim of this study was thus to analyse the consequences of a land use policy shift involving lower parking requirements for new residential areas. The analysis focused in particular on changes in car use and car ownership, but questions relating to how the residents themselves perceive the consequences for their daily life were also analysed. Analytically, this study resonates with research advocating a change in parking policy and attempts to understand the potential consequences of a shift in parking policy practice. Empirically, using in-depth interviews and questionnaires, the study examined how residents living in a fairly new residential area with a relatively restrictive parking requirement in Gothenburg, Sweden’s second largest city, changed their car use, car ownership, spatial parking patterns and daily life in response to this low parking requirement. This allowed the current state of changes in parking policy and planning to be examined by exploring its consequences in a tangible case. It also contributed to the current understanding of practical application and design of parking management approaches in general and of transition towards sustainable mobility in particular.

This paper is structured as follows: Following this introduction, recent changes in parking policy and planning are discussed in Section 2 and conceptualised by classifying them within a conventional parking supply management approach and a parking management approach. Section 3 describes the methodology used, while the empirical case is introduced in Section 4. Section 5 presents the

results, which are discussed in Section 6 and used to draw conclusions in Section 7.

2. Conceptualisation of changes in parking theory, policy and practice

Parking policy can be seen “as a means to accommodate current and future desired vehicles in a residential environment” or “as a tool to influence levels of vehicle ownership” (Marsden, 2014:15). The conventional and most common way of applying parking requirements to meet the demand for parking, i.e. to satisfy the need for parking and offer free parking, has been criticised as being inefficient, resulting in increased car dependency, oversupply of parking, sparsely populated, unattractive urban and residential areas and destroyed street life (Manville and Shoup, 2005). According to Mulley and Ison (2014:411), “cars spend the majority of their time parked at home and so this makes residential on-street parking an issue, particularly as this space is rarely paid for, or paid for at a rate that affects behaviour”. Critics also argue that the use of so-called minimum requirements increases housing prices because developers include the cost of parking in the price of the houses they build. Furthermore, the requirements are criticised for being unjust, because the costs of parking are moved from car drivers to homeowners, who do not necessarily own or use a car (Shoup, 1999; Barter, 2011).

These potential problems with the conventional parking planning approach have prompted some researchers to propose that minimum requirements should be eliminated or converted into maximum requirements (Manville and Shoup, 2005). The maximum requirement is an upper limit for the number of parking spaces that may be built in a housing area, and the supply of parking in an area is thus limited via the developer. The most extreme variant of maximum requirements is car-free residential areas. Problems identified in such areas are spillover problems due to residents parking on streets in neighbouring residential areas, while positive effects are more cycling and walking (Melia, 2014). Other suggestions are decoupling the cost of parking from house prices (Litman, 2011), i.e. the parking spaces must bear their own costs and not be subsidised by other activities, and introduction of more flexible, more accurate and locally adapted parking requirements (Cuddy, 2007) that are tailored to local conditions, such as housing density and public transport provision (Hanouchi and Nuworsoo, 2010).

Some of the proposals for a new parking policy described above can be classified within a demand management approach, in contrast to the conventional so-called supply management approach. A number of differences between the supply management and demand management approaches have been identified by Barter (2009) and are summarised in Table 1. The demand management approach uses parking as a tool to achieve many objectives, and not just to meet the demand for parking spaces. It advocates flexible and lower parking requirements, improved efficiency in the use of parking and measures affecting the demand for parking. Thus, in a fully implemented demand management approach, parking is dealt with as an integral part of land use planning with clear links to transport strategy and long-term urban development policy. Compared with the conventional supply management approach, in a demand management system it is claimed that parking becomes part of a whole set of measures that create greener cities with good conditions for walking, cycling and public transport (Litman, 2013), goals illustrated by terms such as TOD or *new urbanism* (Chatman, 2013). The underlying assumption is that a residential area with fewer cars has better urban qualities and is more desirable for residents because of more green spaces, less cars near homes, better

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