

Categorising car parking spaces and policies

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Car parking policy is a crucial instrument in managing car use. Yet nowhere does there seem to be a taxonomic framework of the full range of car parking space 'types' that exist, nor of the available options to policy makers. Accordingly, this short 'think piece' proposes a taxonomy of car parking spaces based on level of demand, location type, ownership, motivations, users, potential user

restrictions, and type of technology. It then categorises supply and demand side car parking policies by type of instrument used and means of (stakeholder) delivery. Next it points out that in many areas there is an oversupply of parking; that privately-owned spaces have been particularly ignored by researchers, practitioners and policy makers; and that monitoring and control activities

are complex to undertake. Finally, it recommends that the parking sector adopt be more holistic when considering parking; collect more detailed information on car parking supply, utilisation patterns and impacts; and seek to better understand how car parking provision and policies integrate into the wider transport system and society generally.

INTRODUCTION

The crucial role of car parking policies in managing car use has long been recognised (Baker and Funaro, 1958; Ministry of Transport, 1963; and more recently Marsden, 2006). Yet despite this, nowhere in the extant literature does there seem to be any sort of taxonomic framework that firstly categorises the full range of car parking space 'types' that exist, nor secondly then goes on to present the available options to policy makers in a clear and usable categorisation framework.

Accordingly, this 'think piece' draws on the experience of the author, firstly to propose a taxonomical framework of car parking spaces; and secondly to establish a spectrum of available policy options.

CATEGORISING CAR PARKING SPACES

A car parking space (lot) can be defined as being a defined area that is set aside for storing a vehicle – in this case a car (automobile). From this, there are a number of characterisation criteria that emerge. These are:

Location type – the primary dividing line here refers to whether a space is on street or off street.

Ownership – Car parking spaces are either owned/controlled by the public sector (typically local authorities), or else by the private sector (i.e. parking providers, organisations, or residents).

Motivations – Primary motivations for owners to provide parking relate to the level of demand, and the role of the owners and the envisaged users. They typically focus on enabling access to a neighbourhood, on generating a profit (or at least a revenue stream), or on a combination of the two.

Users – users of car parking can be grouped into specific categories, e.g. mobility impaired, members of the general public, so-called private-non-residential (PNR), or residents.

Potential User Restrictions – this category provides a link direct between the user and ownership categories and the available policy options in that each measure is imposed on the user at the discretion of the body that owns/controls the car parking space. In practice, the measures range from no restrictions being in place to

payments or permits being required from the user.

This framework can be considered as illustrated in Figure 1.

INSERT FIGURE 1

FIGURE 1: Car Parking Space Taxonomy

From this, it can be seen that the dominant area of interest from both the policy and research perspective has been on publicly controlled car parking spaces, and on-street spaces in particular. By contrast, private spaces have been relatively ignored.

Meanwhile in looking in more detail at classifying spaces, it can be useful to consider a number of other 'cross cutting' characteristics. These are:

'Technology' – this refers to whether a space is a surface space, or whether it is part of a purpose-built parking structure. Such 'parking garages' can be multi-storey, and/or (partly/wholly) underground, and/or mechanised.

FIGURE 1: Car Parking Space Taxonomy

Location Type	Ownership/Control		Operator	Motivations	Users	User Restrictions	Technology	
On Street	Public (Local Authority)		Local Authority/ Commercial Parking Operator	Access	Specific Groups	Permission or Payment Required at Discretion of the Owner	Surface (temporary or permanent)	Parking Garage - possibly multi-storey and/or partially/wholly underground and/or mechanised
Off Street				Profit	General Public			
	Private	Organisation	Commercial Parking Provider	Access	Private Non Residential			
		Residents	Commercial Parking Provider		Residents			

Level of formality – how ‘defined’ is the parking area, in both physical and legal terms?

Degree of permanence – clearly many car parking spaces are purpose built (see above) and are therefore likely to remain in place for many years, but others are rather more temporary, perhaps the extreme case being where a space may only be available for a single afternoon.

Degree of functional exclusivity – i.e. whether a parking space is used exclusively for storing vehicles or whether it is shared with other functions such as hosting markets, or sporting activities.

Finally, one car parking space characteristic that is especially important in policy terms, is whether the space is currently existing or is proposed/planned for the future.

In pulling these supply side factors together, it is clear that the first three of these are closely related. Thus, the more technologically developed the spaces built, the more likely they are to be permanent and functionally exclusive. Here, it can be observed that a significant proportion of car parking supply is actually extremely dynamic and spatially variable– and therefore difficult to monitor and/or control.

At this point, cross cutting classifications on the demand side need to be mentioned just before the transition to developing the policy taxonomy. Simply, these can be categorised as being trip, location or user related. Trip factors relate to ‘type of parking destination/activity’, and its close relation ‘trip purpose’, both of which heavily influence the level of parking demand, as do location factors such as whether a site is located in a city centre, a suburb or out of town, and on how urbanised the general area is (metropolitan, urban, rural). User factors meanwhile can include income, gender, age, family structure, and socio-economic group. Ultimately, such factors combine to determine the likelihood that particular users will respond to different policy interventions, which is clearly of vital importance when considering which policy option(s) to take.

CATEGORISING CAR PARKING POLICIES

In taking the next step of categorising car parking policies, it is helpful to think in the following terms:

First, when considering parking spaces from a public policy perspective, the key dimension is the Balance of Supply and Demand. This is because insufficient capacity for the level of demand leads first to traffic congestion, and then to increased unpredictability in journey times, noise, emissions, energy use and stress; whilst over sup-

ply implies wasted financial, land and energy resources (see Enoch, 2012). That said, this ‘trigger’ for action is rather more sensitive to overly high levels of demand than of supply, and so areas where there is a perceived shortage of car parking (such as in urban areas and in other ‘hot spots’) tend to see the supply being controlled in some way, whilst in areas where the number of parking spaces outweighs the demand for them spaces are generally effectively ignored.

Second, is the measure ‘supply side’ or ‘demand side’ – i.e. is the supply being manipulated to meet the expected demand, or is the level of demand instead managed to match the available supply?

Third, is the type of instrument adopted – i.e. physical, regulatory, fiscal or informational. On the supply side, physical measures mean constructing or removing car parking garages, regulatory measures mean ‘squeezing more or requiring less spaces from the available supply’; and fiscal and informational measures seek to influence the utilisation/efficiency of the existing spaces from an operational standpoint. Meanwhile on the demand side, the information and fiscal measures look to manage the usage/utilisation of the spaces through ‘signals’ to influence car parking behaviour; demand side regulations limit access to specific groups and or/specific times, whilst physical controls refer to increasing or reducing the number of drivers accessing a particular activity. In other words, the spectrum ranges from fairly radical, large scale measures at each extreme, to almost gentle micro managing techniques in the centre.

Fourth, related to the type of instrument is the performance of the measures in terms of their being implemented and operated against effectiveness, financial cost, political cost, time, and simplicity criteria.

Fifth, there is a dimension around the status of the space, in terms of whether the measure applies to currently existing spaces or to proposed/planned developments.

Finally are the stakeholders involved in delivering action by which the measures are applied to the car parking users by policy makers. In essence, this can be done either directly from Government to the user (e.g. through on street parking charges, or requirements to have access to a residential parking space before being allowed to own a car for example), or far less directly (e.g. through VAT on parking charges on commercial parking operators, or through a workplace parking levy on businesses) – Figure 2 illustrates these routes.

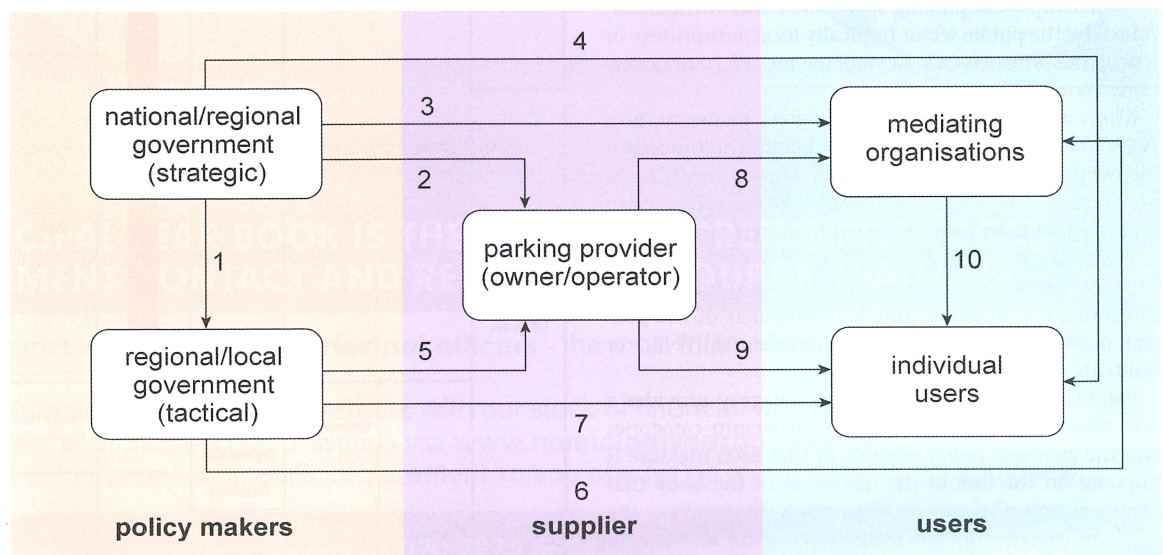


FIGURE 2: Car Parking Stakeholder Policy Influences

Meanwhile Figure 3 illustrates the car parking policy categorisation framework, which includes a few example policy instruments within it.

In reviewing these characteristics, it could be argued that the majority of effort vis a vis balancing supply and demand is focused on increasing supply to meet demand whilst generally ignoring situations where the opposite is the case – potentially having the effect of inducing additional car trips in those areas. Next, in the parking sector much of the emphasis has been on a supply side ‘predict and provide’ approach over a demand side one, with the one (albeit significant) exception being in the use of parking charges to maximise profit and/or access to a facility.

Regarding instrument types, parking is one area where a full range of options has been applied, though generally on a highly localised and ad hoc basis, generally driven by financial and sometimes political imperatives. Interestingly these observations tend to apply not only to existing parking spaces but proposed spaces too, with one exception. So, whilst measures applied to existing spaces have traditionally focused on Government or parking providers directly influencing car park users (with one or two exceptions), for proposed spaces Government efforts (in the UK at least) have also extensively used regulations to influence developer decisions on parking provision, thereby only indirectly influencing the user.

IMPLICATIONS FOR POLICY AND PRACTICE

Several observations emerge from this think piece that bear further comment.

First, is the lack of attention paid to privately owned spaces by researchers, practitioners and policy makers. Whilst it is in some ways sensible to focus first on publicly controlled spaces – not least because the effectiveness of measures can be significantly ‘diluted’ by following indirect routes of implementation – this is potentially problematic in that a significant proportion of spaces are privately owned which reduces the impact of any parking policy strategy. Interestingly, some authorities have looked at ways of addressing this issue (see Enoch and Ison, 2006), but so far these remain the exception rather than the rule.

Second, is the sometimes highly dynamic and spatially variable nature of car parking supply. In many ways, this may be a positive thing but from a policy and planning perspective this is an issue that potentially renders monitoring and control activities less effective than they otherwise might be.

Third, is the fact that significant areas of car parking exists that is seldom used, largely because traditionally policy makers have focused on ensuring that there is sufficient parking supply for expected demand while areas with too much parking have tended to be left alone. Although perhaps politically expedient, this is not necessarily optimal from a transport or wider societal perspective, in part because there is ignorance of how much resource is involved in providing car parking.

Fourth, there is scope for demand side car parking solutions being further considered, rather than the supply side alternative always being the default, once again perhaps due to poor information about the real cost of parking.

Fifth, is that car parking policy is not considered holistically, but rather is applied on a highly localised and ad hoc basis, meaning that the contribution of car parking

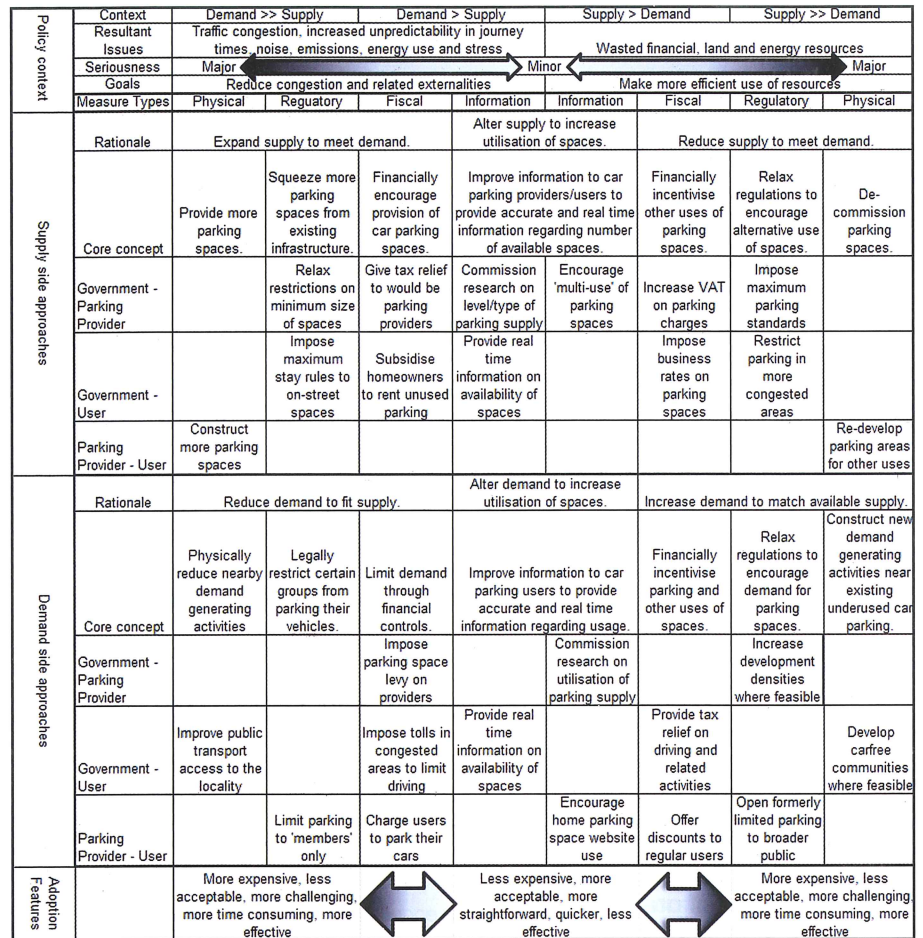


FIGURE 3: Car Parking Policy Taxonomy

measures to public policy objectives across an area and/or over a period of time is often less than it could be.

Sixth, is that the above issues are all exacerbated by ignorance of how much car parking there is, where it is, of what type, and at different times of day – in other words there is relatively little data available about car parking supply (particularly privately owned), even in ‘progressive’ cities.

Overall, in light of the above points, one suspects that many policy decisions in the car parking sector currently are distinctly sub-optimal in one or more respects. Accordingly, it is recommended that the parking sector:

- Adopt a more holistic and comprehensive view than previously of car parking spaces and car parking policy;
- Develop and implement a data collection framework to determine detailed information on car parking supply, utilisation patterns and impacts;
- Better understand how car parking provision and policies integrate into the wider transport system and society generally.

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