The Role of Parking in Future Cities: Symposium and Workshop

Nicola Spurling, Lancaster University. Supported by The Greater Cambridge Partnership, The Commission on Travel Demand and The Institute for Social Futures

Introduction

The Event was organised by Nicola Spurling, Institute for Social Futures, Lancaster University, in partnership with The Greater Cambridge Partnership (Hilary Holden, Livia Oldland) and The Commission on Travel Demand (Greg Marsden). With increasing competition between uses for urban space, the management of parking in the city remains a controversial challenge. Changing trends in car use and emerging technologies, such as Electric vehicles, Uber and Automated Vehicles, raise questions about the design, location and amount of city space allocated to parked cars, and how futures should be prepared for. The interdisciplinary, cross-sector symposium and workshop focussed on parking space as a key component of the challenges that cities face as they strive to be more liveable and sustainable. A symposium of short talks on parking space research and practice was followed by a workshop which explored near and long term futures of parking in relation to three travel demand scenarios.

The Introduction highlighted the connections of the Event to the work of the Commission on Travel Demand, specifically in how the topic of parking space was being approached, summarised in the following points: space to store vehicles when they not in use is a necessary aspect of any transport system; the amount, location and form of parking for private car is increasingly problematic; parking provision is shaped by and responds to travel demand; parking has an active role in perpetuating and further embedding the private car into society, into our cities and into everyday life; and, understanding travel demand, how it is changing and how it might change in the future is very relevant to discussions of parking.

When thinking about future changes in travel demand, one of the first things to spring to mind are new technologies and services, such as Electric and Automated vehicles, and Uber. There is no doubt that such innovations have vital roles to play within future travel – and they featured strongly in the symposium discussions. However, the Workshop brought some additional emergent trends to the table, which the Commission has been finding - unexpected changes in demand (in terms of current transport modelling methods). Firstly, there have been recent reductions in car based travel for 18-30 year olds, only around half of which is explained by changing economic circumstances. Evidence suggests that this might be translating into less car based travel across a lifetime (and not only 'car later'). Secondly, a focus on individuals and households in transport surveys is missing key growth areas, especially the rapid increase in online shopping (for food and non-food items), increased same day delivery and repeat deliveries (when people are not in). Finally, a lack of attention has been given to the end-use activities from which travel demand is derived – this would include changes in shopping, and also in working and healthcare too. In addition to these technological and social changes, we mustn't forget increased walking, bike which accompany the densification of cities.

In terms of parking - with all these changes afoot - instead of simply talking about parking, an expanded vocabulary is needed – waiting, charging, stopping, interchanging, warehousing, storing, and several of the talks at the Event addressed these aspects. Finally, as we step into these futures of changed travel, a question arises as to what will happen to the structures and spaces of cities and neighbourhoods which, until now, have been used for the car. Here we might find inspiration in past futures – for example how horse and carriage was planned for in Victorian London, or from studying what happened to the garaging of cars, and how garages themselves are now used.

These are just some of the topics which make parking such an exciting and current topic, and which were discussed at the Event. The range of sectors, disciplines and countries represented resulted in an inspiring and thought-provoking day.

Abstracts and Speakers

Do changes in workplace car parking provision lead to changes in commuting patterns?
Jenna Panter, University of Cambridge

A shift from using cars to walking and cycling could help to manage congestion, improve air quality and road safety, and provide an important opportunity for physical activity. Workplace facilities such as the availability of car parking are known to influence travel patterns, but little is known about the impact of changes in car parking availability. We examined whether changes in workplace car parking availability were associated with changes in commuting patterns using detailed data collected between 2009 and 2012 from the Commuting and Health in Cambridge study (n=1142 participants). At baseline, we found that those who reported there was free car parking at work were less likely to travel by public transport, bike or on foot. Those who had to pay for car parking at work were 26 times more likely to integrate some walking and cycling into their car commutes (OR: 26.0, 95% CI: 11.8 to 57.2). After one year, we found that those reported they had no parking at work or had to pay for it were more likely to take up walking (OR: 2.04, 95% 1.12, 3.71). Those who reported a change to less restrictive workplace parking (i.e. from no parking to any parking or from paid parking to free parking) were more likely to increase the proportion of car-only trips to work (OR: 2.18, 95% CI: 1.04 to 4.54). These findings together suggest that changes in workplace car parking policies may help to shift travel patterns away from car use and towards walking and cycling.

Workplace Parking Levy - the Future
Sue Flack, Campaign for Better Transport

The talk will cover: 1. Summary of Nottingham's successful implementation of Workplace Parking Levy including interim evaluation results, lessons learnt and success criteria recommended. I was responsible for developing the WPL at Nottingham and more recently, as Director of Planning and Transport, for evaluating its implementation. 2. Insights from specialist consultancy work on WPL since I left Nottingham City Council in June 2016, including new ideas and ways of improving WPL. 3. Insights from the WPL interest group of cities and local authorities convened by Campaign for Better Transport

The future of urban mobility: Uber and implications for parking
Neil McGonigle, Uber

This talk will set out Uber's vision of how ride-sharing services deployed alongside mass transit solutions can together encourage a behaviour shift away from car ownership and help tackle some of the key issues our cities face in terms of congestion, air quality and car parking provision. It will also touch on some of the innovative partnerships that have been forged between Uber and developers to reflect the changing needs and expectations of urban residents

Parking reimagined through infrastructure
Richard Morton, Lancaster University

Traditional parking models have served to generate profit for private companies and councils via paid parking spaces located in desirable destinations within the city. Many automotive and technology companies are producing future transport concepts which are both electric and autonomous, ranging from shared vehicles to drones. These future concepts often fail to consider the impact of these technologies on the city and how parking will be transformed. This paper argues that parking infrastructure should be reimagined in the city to provide support infrastructure required for an autonomous future. There is a need to question where and how we want these infrastructures and new business models to exist. Drawing on real datasets and speculative design methods, this paper presents a series of design provocations to question how parking might be reimagined in a future of autonomous vehicles. These provocations focus on two key areas. Firstly, the charging requirements of electric vehicles, which currently coincide with the peak demands already placed on the grid and while charging is quick it is not instant. Charging needs to be

considered as part of our lives. New policy to put charging in petrol stations fail to address this. Secondly, the potential demand for new forms of parking, based around transition between types of vehicle. For the last century, cities have been dictated by vehicle manufacturers, yet vehicles evolve quickly and cities do not. It is time for cities to dictate to manufacturers the type of vehicles which are deployed and how we transit between them.

The past futures of urban mobility and parking in nineteenth-century London
Carlos Lopez-Galviz, Lancaster University, UK
London was the world's largest metropolis for most of the nineteenth century, its population reaching over 6,4m in 1900. This posed a number of challenges to infrastructure and governance, not least the provision of transport, which in the case of horse-drawn vehicles included facilities such as stables, carriages and inns, each involving the labour of an array of keepers, street sweepers, horse-feed traders, and others. The ratio of cab owners to people in the 1830s in London was 1 cab for every 1,000 people, increasing by nearly a threefold with 1 cab to 350 people in the late 1890s. Hunting became a pastime for a larger group of society and not just the gentry (Thompson 1970, 14-15), which had consequences on the costs (operational, spatial and other costs related to infrastructure); the regulation of services of operating companies, for example, for the delivery of goods in certain areas at specific times of the day and night; and consequences for what we might call emissions, notably horse droppings which created an extensive network of labour, consisting largely of teenage boys, combining the practical needs of keeping the streets clean and the moral prerogatives of social reformers. By looking at the facilities, the labour and the emissions related to horse-drawn transport in the 1850s and 1860s in London, this paper will ask whether our understanding of urban change in the past provides any insights for our anticipation of which directions change might take in future cities. Central to this are questions around sustainable urban mobility, human and non-human behaviour, and innovation concerning technology, governance, and social institutions. The paper will conclude with a reflection on the different sources and methods that allow us to investigate the extent to which the future was a concern for transport providers, users, regulators, and reformers.

"Our cars haven't been in the garage for years – it's being used as storage": The conversion of car parking into housing space
Elizabeth Taylor, Royal Melbourne Institute of Technology, Australia
Throughout the 20th century rapid increases in car ownership, combined with minimum parking policies, saw parking become an integral part of Australian housing. Parking is physically and legally bundled with the housing stock: from the enclosed double garages of detached suburban housing, to the multi-level parking structures of apartment towers. In Melbourne, only the Central Business District (CBD) is without minimum parking policies and has some unbundling of housing and parking markets. Housing and parking spaces are closely tied, yet the boundaries between the two are sometimes blurred. Using Census, property sales, and travel survey data this paper estimates the extent of residential parking of different types in Melbourne. It then considers evidence of both informal and formal conversions of parking into housing. As Frank Lloyd Wright's Usonian house anticipated, home garages invite objects: the drift of household consumption into garages includes junk; garden tools; fridges; boats; gyms; workshops; and laundries. Some garages are completely converted to living spaces, or driveways repurposed as gardens. By contrast, parking in Australian apartment buildings is closely controlled by planning and other legal restrictions, and often goes unused. These spaces have limited potential to for informal re-use. There are however several examples of formal, developer-led conversions of multi-story parking spaces into apartments in the Melbourne CBD. The paper considers what these different types of conversions say about the varying physical and legal barriers between parking and housing space, and the potential future role of residential parking spaces should housing and mobility patterns shift.

People parking bays

Brenda Puech, Independent Transport Activist

I've been campaigning for years for a parklet programme in London, where residents and businesses can apply for a parking permit to put items in a parking bay for communal use. Hackney Council have installed three lovely but expensive parklets along shopping streets, but this is not financially sustainable. Recently I installed a 'people parking bay' outside my own home. This consisted of a two-person bench with a table, two Plantlocks with colourful flowers, a big red umbrella over the table, all on a bed of artificial grass. I put up a sign saying why I was doing this. The response to the bay has been astounding. People stop in their tracks as they walk or cycle past and many sit down, even for a few minutes. Over one weekend, hundreds of people have engaged with it. People smile and laugh and talk to each other on the street around it. The overwhelming response is that they love it - both the idea and the implementation. It is very simple, cheap and cheerful, just the sort of thing anyone could do. I would like to talk about: my documentation of the response to the bay from the community, (my neighbours and people passing by), and what the implications are for a 'parklet' programme; the possibility of a bottom-up 'parklet' programme in inner London that will not lose parking revenue and will harness people's creativity and willingness to invest in their public realm.

From multi-storey car parks into multifunctional vertical green parks

Ferdinand Ludwig, Technical University of Munich The contradiction between todays need for parking space and the awareness that changes in society and mobility culture will make present car parks – at least partly - obsolete, leads to the question on how to design multi storey car parks anticipating these changes. At Technical University of Munich we faced that question with a specific Design Studio on this topic. Designing provides the big chance to search for truly new innovative approaches and to draft future visions. In these studies three-dimensional structures that combine car storage with space for people, animals and plants from the very beginning on were designed. With the change in mobility culture and car use these facilities open up future potentials for a wide range of uses. We ought to read these as big spatial potentials to face challenges like climate change, increasing population numbers and growing cities leading to urban density. The results are hybrid landscape-buildings, which reflect technological, ecological, social changes and are transformative and multi-codeable spaces. They illustrate how a change in care use can increase the quality of life and thus actively contribute to a change in mobility culture. The proposals incorporate time as a factor in their design by thinking in different stages, using new plant techniques that immanently are in process and provide future adapted outdoor space on various scale levels.

Workshop Activity

Delegates worked in groups of 5-6. Each group was given one of three scenarios (see below).

Task: Read through your group's scenario and the questions. In groups decide which scale to work at i) a street, ii) a neighbourhood, iii) a whole city. Staying focussed at this scale, consider the following questions in relation to your scenario. Record the discussion on flipchart paper (with words and/or images).

What types of parking, charging, waiting, ranking, interchanging would be part of this future?; for what types of vehicle?; what rhythms of parking might this scenario produce (e.g. time of day, week, seasons and year)?; where might parking be needed?; what current parking structure/infrastructure might become redundant or reused?; what implications would the new parking infrastructure have on the experience of space, place and non-place within the street/neighbourhood/city?

Three Scenarios of Future Travel Demand

1.Generational change (groups 1 and 2)

The decline in driver license uptake amongst 18-30 year olds proves to be a lasting trend, with the uptake of driving licenses later in life being the new 'normal' across generations. Mobility as a service has become central to the travel habits of the urban young. There is a tendency to move from urban centres to suburbs around age 30, which correlates with the main age of driving license uptake. Private car ownership remains the dominant model for the 30-60 year old age group and electric vehicles (with a high degree of automation) are wide-spread. City centre workplaces, core working hours and face-to-face meetings continue to be important aspects of working life.

A current trend is for the over 60s to move out of their large suburban homes and back to the urban core in later life, rescinding their private cars, and reviving/developing the travel practices of their earlier days within the new contexts of mobility as a service that have now emerged.

2. Flexible work & portfolio careers (groups 3 and 4)

Multiple employer 'portfolio' career structures have become commonplace, combined with greater 'third-place' working (such as coffee shops) facilitated by wifi coverage. This 'work at home' or 'work in third-place' model is overlaid with the need to periodically work in cities far from home, creating patterns in which people select to stay away from home for several days, resulting in weekly, rather than daily commutes. These trends combine with intensified office utilisation, reduced workplace parking provision and other policies that explicitly counteract people working five days a week in one place.

Shortage of fuel and failure to deliver a decarbonised electricity supply has led to a major reduction in car use in urban areas and a large increase in walking and cycling, including electric bike. This has been accompanied by a shift to mobility services, in particular platforms/infrastructures developed by consortia of local authorities and the private sector which provide integrated multi-modal transportation within and beyond the city.

3. Online shopping (groups 5 and 6)

Shopping has shifted online such that it is the primary method of purchase (of all kinds) for 70% of the population. This has resulted in increased deliveries to homes, workplaces and delivery points/lockers in city centres. There are up to 5 deliveries per week for those engaged in this form of shopping. Next-day delivery has become the industry standard, and multiple purchases (of non-food items) are often made, with those items not wanted being returned. As such the increase in light goods vehicle traffic has continued, but this is now overlaid by multiple new car-based delivery services (e.g. developed by uber), and an increased proportion of last mile bicycle delivery couriers who use new forms of cargo and electric bike. Accompanying these shifts in shopping patterns, the decline in driver licence uptake amongst 18-30 year olds has continued, and the reduced cargo function of the car has led to average car size decreasing and families finding alternatives form of travel for the school run and workplace commutes. Such trips are no longer combined with shopping trips to out-of-town supermarkets, which are now a thing of the past.

Key Discussion Themes

Those who attended the day appreciated the range of speakers and participants, and the variety of positions which were represented. Also, the dedication of a whole day to the neglected topic of parking was praised. Topics for further research and debate included the need to understand what parking revenue funds within local councils, and thus the implications of reducing parking (often this revenue funds new sustainable transport infrastructure). Issues of governance – there are no metropolitan parking strategies, so interventions are always localised – this has implications for the extent to which they can intervene in car dependence. The potential of studying an example such as Transport for London – who's parking does operate at the metropolitan level – to understand

whether and how this has worked. The need to focus on 'the life we want to live', how we want cities to be rather than fixing problems. An approach of vision and validate, rather than predict and provide. An interest in the talks on reuse (of redundant parking structures, of home garages), and of designing parking structures that can eventually adapt to alternative uses. The International perspectives which provided examples of initiatives and policy interventions already being used in practice that might be deemed 'impossible' or 'foolhardy' in other contexts and settings. The interventions that are possible in current policy contexts – brought to life by the talk from an activist who has experimented with a parklet outside her home – in the process learning about the complex parking policies of her local council.

List of speakers and delegates and their affiliations

First Name	Surname	Affiliation
Anthony	Bancroft-Hall	Cambridgeshire County Council
Tom	Cohen	University College London
martin	De heaver	Kings College London
Sue	Flack	Campaign for Better Transport
Sarah	French	Cambridge City Council
Sonia	Hansen	Cambridgeshire County Council
Yue	Huang	Liverpool John Moores University
Jo	Abbottt	RAC Foundation
Carlos	Lopez-Galviz	Institute for Social Futures, Lancaster University
Ferdinand	Ludwig	Technical University of Munich
Neil	McGonigle	Uber
Mark	Moran	Parking Review & TransportXtra
Richard	Morton	LICA, Lancaster University
Jenna	Panter	University of Cambridge
Harry	Potter	Parking Perspectives Ltd.
Pete	Price	Greater Cambridge Partnership
Brenda	Puech	Independent, activist
Jake	Smith	Cambridge City Council
Guy	Spence	Fairer Parking Scheme
Nicola	Spurling	Institute for Social Futures, Lancaster University
Lauren	Stabler	Global Sustainability Institute
Elizabeth	Taylor	Royal Melbourne Institute of Technology
Kalle	Toiskallio	Enterlot Oy & President of the Finnish Transport Planning Society
Ivo	Wengraf	RAC Foundation