

Keynote talk: The rhythmicity of everyday life in cities: implications for energy consumption

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Over the last four decades a small but varied literature about the rhythms of social practices, societies and spaces has come into existence. Particularly influential within this literature have been insights from chrono-biology and the work of Marxist theorist Henri Lefebvre, which both in different ways bring out how rhythms link together time, space and energy. In this presentation I will critically examine these bodies of work by drawing out key concepts and ideas and by exploring strengths and weaknesses. Particular attention will be directed towards the processes by which rhythms emerge and influence each other (known as 'entrainment'), as well as their coordination and governance. Issues of representation and measurement, including peaks/troughs and repetition/difference, will also be addressed. Throughout the presentation I will use examples from my past research on the practices of everyday mobility by parents with young children and on the night-time economy in regenerated city-centres. From these examples it will become clear that interactions among rhythms are a source of continual contestation and struggle, but can also create a sense of place and experiences of convenience or enjoyment. Implications for energy consumption in mobility and other practices in cities will be discussed, with specific attention for how rhythms change over the course of the diurnal cycle.

Investigating transport and energy in time: challenges for quantitative research

Giulio Mattioli, Institute for Transport Studies, University of Leeds

The presentation focuses on the methodological challenges involved in investigating the frequency and sequencing of travel based on large quantitative datasets. It briefly introduces two strands of work conducted as part of DEMAND Theme 1 (Trends and patterns in energy demand). In the first, notions of *sequencing* and innovative pattern-mining software were employed to investigate the car- and carbon-intensity of everyday activities with time use data. This approach brings to light relationships of dependence between practices, e.g. between carrying bulky items and car driving, cycling and showering, etc. In the second, unique seven-day travel diary data available for the UK have been used to investigate the *frequency* of food shopping travel. The results challenge the predominant focus of transport research on travelled distances, showing how patterns of frequent shopping are responsible for large amounts of carbon emissions. Overall, the presentation illustrates the challenges, but also the interest of investigating transport and energy with event-based data. Asking meaningful research questions about energy-consuming practices often leads to touch the limits of existing large datasets in terms of available information, level of detail, time period covered and sample size.

ICTs and daily rhythms: how mothers in Taiwan manage their time

Sumei Wang, National Chengchi University, Taiwan

Feeling pressed for time is common. Many have attributed this phenomenon to the widespread popularity of information communication technologies (ICTs) in everyday life. However, is time pressure purely caused by the development of technologies? Previous research has shown some doubts about the presumed relationship between ICTs and time pressure. My work focuses on daily rhythms of mothers with young children in Taipei. Through in-depth interviews with 20 mothers, I queried their everyday use of ICTs, with a special interest in mobile phones and the Internet, and investigated their strategies of time management involving ICTs.

Infrastructural layering: Mobility, digital connectivity, and energy demand

Alan Wiig, Temple University, Philadelphia

The use of smartphones to access the Internet while on the move is a common aspect of everyday, personal mobility in the twenty-first century. Transit, weather, and social media applications (apps) engage individuals' attention during commutes, but the energy demands needed to power computing devices leads many users to employ creative, informal actions around charging batteries. This presentation articulates a conceptualization of energy demand through the layering of infrastructures that provide mobility and digital connectivity: cellular telecommunication systems are often built on top or alongside existing transport corridors. Even as social practices change, the underlying geography adapts without significant transformation, signifying the need to investigate the immaterial and tangible dimensions of digital change through their infrastructures. Using fieldwork in England and the Northeast United States prompts the following line of inquiry: What is the role of electrical energy and batteries in enabling mobile communication while in motion? How are the social practices around constant, wireless connectivity shaping the experience of transportation? And finally, what are the larger implications of battery charging and general electricity use for patterns of local, regional, and global mobility? The utility of visual methods for charting infrastructural layering as well as the social practices of mobility and digital connectivity will be discussed. Maintaining an 'always-on' digital connection necessitates energy across multiple dimensions; highlighting the energy of digital systems offers a means of theorizing the infrastructural geographies underlying energy demand.

Planning, Priorities and Practices: Making space for allotments and car parking in Stevenage

Nicola Spurling, DEMAND Centre, Lancaster University

How do practices demand space? And how do planners understand and prioritise the distribution of space for different practices? This presentation explores these questions via an analysis of the history of allotments and garages in Stevenage New Town. When the initial plans for Stevenage were drawn up in 1949 the Ministry of Agriculture and Fisheries had an 'Allotment Advisory Committee' and there were high minimum standards for the provision of allotments. Throughout the 1950s-1970s, allotments were redeveloped as parking spaces and garages that could be hired by residents from the local authority. Residents parked on the road, and as homes became privately owned, people re-allocated garden space as driveways. The spatial demands of practice have how changed again, with large numbers of garages standing empty or being hired specifically for domestic storage, and waiting lists for allotments on the increase. Tracing these spatial histories of practice highlights some of the ways in which practices demand space, through specialisation and storage of materials, and enables an analysis of processes of change and obduracy – in the built environment and in practices – that occur at the intersection of planning and demand.

Electric Rhythms: the Beat of the City

Gordon Walker, DEMAND Centre, Lancaster University

'Everywhere there is interaction between a place, a time, and an expenditure of energy, there is rhythm' (Lefebvre 2004). Having wired its way into the heart of the city, electricity supplies and demands its beat. Its beat. Urban life hums, crackles, pings, gleams and zooms with electrical consumption; rhythms of doing, being, performing and practising synchronising in almighty conflagrations and diminishings of demand. In step, out of step, with nature, against nature, the

spatiotemporal traces of urban lives are immersed in the curves of supplydemand, the carbon content of its electrons, the machinations of market pricing, the fortelling turning on and off of spinning things, the threat of the dark. The stage is set. A newly charged temporal politics sparks into life, calling forth smartness, flexibility, security, accumulation. Made and emergent, stable and unstable, electric rhythms are where the place-time-energy of the urban everyday and the imagined urban future pulse together.

How Infrastructures and Consumers Interact: Insights from the interface

Catherine Grandclement & Magali Pierre, EDF R&D, Paris & Elizabeth Shove, DEMAND Centre, Lancaster University

Despite the fact that the world of the consumer (and of appliances) and the world of engineers/utilities (and of infrastructures) are constituted as separate fields of activity, conceptualised, organised and 'governed' along really very different lines, infrastructures and systems of provision are closely tied to patterns of consumption and demand. Not surprisingly, the points at which these systems, infrastructures on one hand, appliances, on the other hand, come together are fraught with tension. In this paper we explore the infrastructure-consumer interface and the social-material-political configuration of a selection of such junctions. As this exercise shows, material interfaces whether between electric vehicles and the grid, or between meters, display devices and other appliances link, and in a sense also separate, institutional and economic domains, markets, philosophies and systems of provision. In showing how these connections are negotiated and how roles and responsibility are defined and allocated between the consumer, the market and the public interest, we show that arrangements at the interface are contingent and that present solutions 'black box' and provisionally stabilise what are at heart essentially contested relations. Whatever form they take, these technological and institutional responses embody and reproduce a form of energy politics.

Movement of Goods: Meeting the retail peaks – or not?

Tony Whiteing, Institute for Transport Studies, University of Leeds

Much is known and written about peaks in passenger movements and in car travel, but we know far less about peaks in freight movement and how to manage them. This is increasingly obvious – just look at the headlines about late deliveries of goods bought on the internet on 'Black Friday', or late arrivals of flowers ordered for delivery on Mothers' Day. Demand for goods movement and demand for personal movement are subject to very different paradigms at present. For personal movement, there seems to be increasing acceptance that peak demands, if left unmanaged, have unwanted consequences. So stakeholders tend to agree that we must agree on strategies to spread the peak. Freight demand, especially in the high profile area of consumer goods, is highly marketing-led. Marketing departments compete head-on in an environment where sales volumes and market shares are all-important. The online shopping sector is still growing fast and business models are still evolving. Orders are taken and promises are made, but no-one seems to check whether the logistics providers can meet the resulting peak demands. But maybe this is starting to change – promotion of 'click and collect' rather than home delivery may be an acknowledgement that deliveries need more careful control. This presentation will explore how these emerging issues are likely to evolve.