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The power of perceptions: Exploring the role of urban design in cycling behaviours and healthy ageing

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Abstract

Good urban design has the power to aid in the provision of inclusive journey environments, yet traditionally neglects the perspective of the cyclist. This paper starts from the premise that more can be done to understand and articulate cyclists' experiences and perceptions of the urban environment in which they cycle, as part of a closer linking of urban design qualities with transport planning and infrastructure interventions. This approach is particularly applicable in relation to older cyclists, a group whose needs are often poorly understood and for whom perceptions can significantly influence mobile behaviours. Currently, knowledge regarding the relationship between the built environment and physical activity, including cycling, in older adults is limited. As European countries face up to the challenges associated with ageing populations, some metropolitan regions, such as Munich, Germany, are making inroads into widening cycling's appeal across generations through a combination of urban design, policy and infrastructure initiatives. The paper provides a systematic understanding of the urban design qualities and built environment features that affect cycling participation and have the potential to contribute towards healthy ageing. Urban design features such as legibility, aesthetics, scale and open space have been shown to influence and affect other mobile behaviours (e.g. walking), but their role as a mediator in cycle behaviour remains under-explored. Many of these design 'qualities' are related to individual perceptions; capturing these can help build a picture of quality in the built environment that includes an individual's relationship with their local neighbourhood and its influences on their mobility choices. Issues of accessibility, facilities, and safety in cycling remain crucial, and, when allied to these design 'qualities', provides a more rounded reflection of everyday journeys and trips taken or desired. The paper sets out the role that urban design might play in mediating these critical mobility issues, and in particular, in better understanding the 'quality of the journey'. It concludes by highlighting the need for designers, policy makers, planners and academics to consider the role that design can play in encouraging cycle participation, especially as part of a healthy ageing agenda.

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Keywords: Urban design; built environment; cycling; ageing

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1. Urban Design and Cycling

Urban design research and practice has historically displayed a tendency to focus on human scale (a notion that has traditionally been defined through pedestrian movement and characteristics), with the goal of creating and encouraging vibrant public spaces and places. Research attempting to better understand or articulate cyclists' experiences of these places is however sorely lacking (Forsyth et al., 2009). This despite recognition that high quality urban design has the power to aid in the provision of more pleasant and inclusive journey environments (Azmin-Fouladi et al., 2007). In this paper we argue that more can, and should, be done to incorporate a 'cycle scale' - an awareness of, and sensitivity towards, the diverse needs of the bicycle and its user - into urban design discussions. This reimagines 'human scale' as something altogether more inclusive and interactive, accurately describing cities in which cycling culture is engrained, such as Copenhagen or Amsterdam, or in which cycling is providing a significant modal share of trips taken. Developing more tangible links between urban design, understood both as a professional practice and a series of core principles related to understanding the physical environment and place (see Table 1), with those aspects of the built environment such as street infrastructure that have tended to remain the domain of transport engineers and planners, is one way to do this (Boarnet and Crane, 2001). What limited research that has been conducted has centred on issues of user safety, cycling facilities (including lanes and parking), or creating comfortable spaces in which to encourage recreational cycling (Forsyth and Krizek, 2011). This paper contends that there is potential to extend this research into the arena of more qualitative or subjective aspects of urban design, such as individual-level perceptions of quality, legibility and enjoyment.

Table 1. Selected examples of good design principles (Adapted from CABE, 2003)

Principle of Design	Definition
Character	A place with its own identity and characteristics that make it distinctive and reflective of its local inhabitants
Continuity and Enclosure	A place where public and private spaces are clearly distinguished.
Quality of Public Realm	A place with attractive and well used outdoor areas designed with people in mind.
Ease of Movement	A place that is easy to get though and move within.
Legibility	A place that is easy to navigate through, with landmarks and clear intuitive pathways
Adaptability	A Place that can accommodate change over time, create continuity with the past and respond to new social, market, or environmental demands.
Diversity	A place with variety of choice in activities, shops, and services. Choices in employment and housing and a range of income earners.

In recent decades, a more sophisticated awareness of diverse human behaviours has helped influenced the design and planning of the built environment (Handy et al, 2002). Today, urban design criteria and principles are typically based upon an (albeit partial and potentially exclusionary, (Imrie, 2001) understanding of the 'human-scale'. This has seen designers, for example, focusing on pedestrian movement and flow, in part to counter a historical tendency to privilege automobile traffic (Rowley, 1994). While recently published design guidance for cities such as New York (NYC, 2010) suggest cycling is now being seriously considered as part of integrated urban transport networks, the use of the bicycle as an alternative not only to walking, but also motorised transport, has not yet permeated urban design thinking to any significant level (Forsyth and Krizek, 2011).

We argue that as long as our environments remain solely geared towards vehicular usage and pedestrian flow, cycling can be classified as the 'forgotten middle'. More optimistically, we see an opportunity to begin the process of rearticulating places from a cyclists' perspective, with the aim of improving the quality of both real and potential journeys. Jane Jacobs challenged urban professionals and researchers to look closely at our cities, and to "also listen, linger, and think about what you see" (Gehl and Svarre, 2013, p4). In many cities across the world the modal share of cycle journeys is increasing, the reasons for this must be both recognized and further understood. Yet of equal importance is acknowledging the absence of cycling in many major metropolitan regions, an issue that arguably