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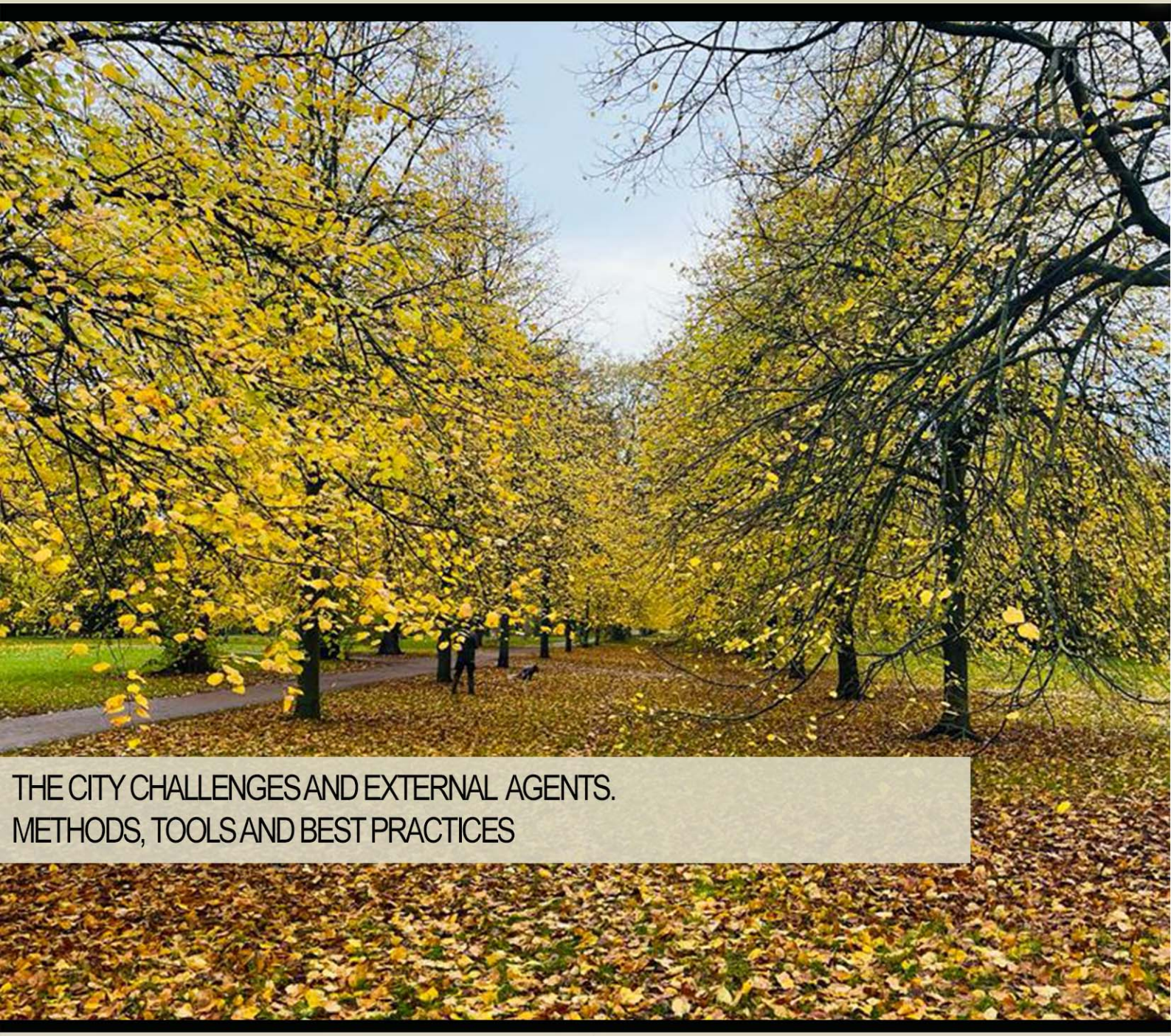

THE CITY CHALLENGES AND EXTERNAL AGENTS. METHODS, TOOLS AND BEST PRACTICES

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Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"
Piazzale Tecchio, 80
80125 Naples
web: www.serena.unina.it/index.php/tema
e-mail: redazione.tema@unina.it

The cover image shows a view of Hyde Park in London (United Kingdom) during the autumn season.
The photo was taken by Enrica Papa in November 2023.

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REVIEW NOTES – Urban planning literature review

Urban spaces and pedestrian mobility: the role of urban design for enhancing walkability

Annunziata D'Amico

Department of Civil, Architectural and Environmental Engineering
University of Naples Federico II, Naples, Italy
e-mail: annunziata.damico@unina.it
ORCID: https://orcid.org/0009-0005-5481-8064

Abstract

Starting from the relationship between urban planning and mobility management, TeMA has gradually expanded the view of the covered topics, always remaining in the groove of rigorous scientific in-depth analysis. This section of the Journal, Review Notes, is the expression of continuously updating emerging topics concerning relationships between urban planning, mobility and environment, through a collection of short scientific papers written by young researchers. The Review Notes are made of four parts. Each section examines a specific aspect of the broader information storage within the main interests of TeMA Journal. In particular, the Urban planning literature review section presents recent books and journals on selected topics and issues within the global scientific panorama.

The contribution discusses, with interesting scientific works, the importance of urban design for enhancing walkability in urban spaces. Pedestrian mobility can guide the transition to a more sustainable, safe and inclusive urban mobility future. The third contribution of the Review Notes for TeMA vo. 16 presents three significant scientific books and journal that propose actions and strategies to create urban spaces and networks that promote active mobility, improve the safety, health and quality of urban environments increasingly threatened by unsustainable mobility choices.

Keywords

Walkability; Walkable place; pedestrian mobility.

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1. Introduction

In recent decades, the occurrence of extremely variable and changing events in the urban fabric have led to conditions in which it has become difficult to live and move comfortably and sustainably (Gargiulo & Papa, 2021). In this context, the walkability debate is taking on an important role for researchers and practitioners engaged in thinking about and designing the cities of the future. Creating walkable environments and improving the walkability of urban areas are cross-cutting goals that span multiple disciplinary fields including urban design and planning, public health and climate change issues.

For existing mobility needs and new emerging challenges, urban planning seeks innovative solutions, including through the use of Information and Communication Technologies (Masoumi, 2023). The concept of sustainable mobility encourages a transition to more sustainable transportation options, especially by promoting the use of active modes such as bicycling and walking (Fonseca et al., 2020).

While there is a great deal of current research on walkability, the concept of walkability itself remains elusive and difficult to define. According to the Oxford English Dictionary, walkability is not a word, but from 1736 onward the adjective walkable is in use to denote "Of terrain, a road, path, environment, etc.: that is suitable, fit, or safe for walkers" (Forsyth, 2015). Hutabarat Lo (2009) affirms that "only in the post-modernist planning era has walkability been identified as an important component of efficient, accessible, equitable, sustainable, and liveable communities". The first concept of walkability identified in a scientific paper date back to the early 1990s and was introduced by urban designers and spatial planners (Southworth & Owens, 1993) in examining the elements of the built environment and the factors that contribute to the walkability problem (Rafiemanzelat, 2017).

Promoting urban walkability, which can also be achieved through the expansion of bicycle and pedestrian paths, contributes not only to reducing vehicular traffic and air pollution levels, but also to addressing the need for healthier lifestyles. In addition, the recent pandemic has highlighted the importance of walking as the main means of transportation. In fact, during pandemic isolation, slow individual modes of transportation (walking and cycling) have proven consistent with the need for social distancing and, more generally, the need to improve people's health and well-being (Fasolino et al., 2020).

"A city living on total automotive dependence becomes dysfunctional, inefficient and inconvenient for life. The goal of the transport system is to move people, not vehicles" (UNECE, 2020). It is necessary to convert the unchallenged preference for individual car use in order to achieve more efficient and sustainable mobility (Cecchini, 2023). That is also why walking is considered an environmentally friendly transport mode and a viable alternative mode of transport for short urban trips (Fonseca et al., 2020). Currently there is a lot of talk about "regenerating existing spaces" for mobility, achieved mainly by enhancing the use of sustainable means, upgrading or creating pedestrian and bicycle routes within the urban context (Pellicelli et al., 2022).

Walking produces direct benefits for pedestrians as it can improve their health, their social life and save time and costs from individual motorized transportation. For example, Middleton (2021) focused on the everyday experiences of the urban walker, noting that notions of 'walkability' and 'walkable cities' need to take greater account of how urban walking is imagined, planned for, and experienced.

At the same time, walking produces indirect benefits to society, such as reducing harmful emissions and noise. Clean mobility and soft mobility, combined with increased accessibility and the advent of new technologies, can reduce environmental and social costs (D'Amico, 2023; Pellicelli et al., 2022; Niglio & Comitale, 2015). A walkable city also promotes the balanced development of urban areas and services, providing people with better spaces and places in which to live.

In recent years there has been a growing interest in building walkable cities and communities, which has led to the production of much academic research focused on this topic. These researches indicate that to assess how "walkable" a place is, it may not be sufficient to look the distribution and distances to services, but it would be appropriate to better and more analytically understand other factors such as the quality of the built

environment, the ease of crossing urban spaces and the ability to attract and encourage pedestrian mobility in daily life (Blečić et al., 2020).

Walkability studies can be divided into two main groups: (i) studies focused on the quality and characteristics of the walking conditions; and (ii) studies focused on analysing pedestrian's behaviours and preferences (Fonseca et al., 2020). The first group includes all those studies that provide important insights into the specific characteristics of the built environment related to walking. Many of these group of studies show that through land use and urban design, it is possible to greatly improve pedestrian movement conditions, by creating an accessible, comfortable, safe and attractive environment (Tira et al., 2020). The second line of research explores the importance of pedestrians' subjective values, preferences and perceptions (see e.i., Mehta, 2008; Cantillo et al., 2015).

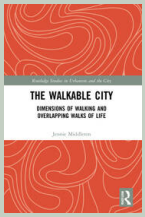
Since the seminal study of Cervero & Kockelman (1997), who proposed the so called "3Ds layout" (Density, Diversity and Design), the list of environmental features, which play a major role as factors in the evaluation of urban walkability, has gradually expanded to include many other important factors related to the urban form and functioning, as well as behavioural characteristics of pedestrians (Blečić et al., 2020). Subsequently, Ewing et al. (2013) proposed a 5-dimension layout, adding to Density, Diversity and Design (Cervero & Kockelman, 1997) the categories of distance to transit and destination accessibility. Gardner et al. (1996) seeks to systematize the desirable attributes of a walking environment into five qualities known as the "5Cs" (connected, convenient, comfortable, convivial and conspicuous), including early interest in individual perceptions. A subsequent layout is proposed by Moura et al. (2017), who added the further dimensions of commitment and coexistence. This 7C's layout is then adapted by Garau et al. (2019a; 2019b), to structure a methodological framework for the analysis of built-environment factors conducive to children's independent outdoor activities (Annunziata & Garau, 2020).

Different walkability metrics have been put forth within the context of discourse on traffic engineering, transportation planning, urban design, public health and sociology (Hutabarat Lo, 2009). The different studies have described walkability in various ways, through different variables and measures (Carra et al., 2022). For example, in the sustainability literature, urban form is quantified by employing standardized measurement tools such as LEED-ND, many of which could be used to assess walkable neighborhoods. Another method that is being increasingly adopted in the analysis of walkability uses the Walk Score index, a patented system to offer a range of walkability, planning, health, transport, and real estate data, combining 3 main elements: the shortest distance to a group of preselected destinations (such as commerce/services, e.g. public transport, restaurants, shopping, parks/green spaces, and schools), the block length, and the intersection density around the origin (Hall & Ram, 2018). Other authors identify certain elements of a road network as indicators of walkability such as the number of accessible paths, the intersection density, the density of dead ends, pedestrian catchment areas (PCAs), and impedance pedestrian catchment areas (IPCAs). The PCA is described as the ratio between a network-defined pedestrian service area (determined by considering the distance pedestrians are willing to travel from a given point, such as from a station), and the theoretical pedestrian service area, which can be mapped as a circular area with a radius equal to the Euclidean distance from that point. The IPCA is a recalculated PCA, with the elimination of high-speed and high-volume roads, which are a real barrier to pedestrians (D'Orso & Migliore, 2020).

One relevant difference among walkability studies resides in how data are collected, mainly through methods such as surveys, questionnaires, interviews, or tools such as Global Positioning System (GPS) or geographic information systems (GIS) (Wang & Yang, 2019). Maghelal & Capp (2011) developed a comprehensive list of built-environment variables related to walking and classified them based on the method of measurement as objective (GIS or Audit), subjective (survey), and distinctive (observation); for example, "intersection" or "land-use" are considered objective variables because they can be quantified using a standard method of measurement that can be replicated in other studies.

Recent research show relevant efforts to combine the spatial and functional attributes of the built environment with walkability, using qualitative and quantitative techniques and methods, with the dual aim of seeking to understand the processes underlying mobility choices and, at the same time, to provide decision-support tools for actors involved in implementing urban planning and design strategies.

The walkable city: Dimensions of walking and overlapping walks of life



Authors/Editors: Jennie Middleton
Publisher: Taylor & Francis
Publication year: 2021
ISBN code: 9781032055367

"The walkable city: Dimensions of walking and overlapping walks of life" explores everyday walking in contemporary urban life. It brings together important theoretical and empirical insights to understand how the 'walkability' of urban spaces can be imagined, planned for, and experienced.
Measuring levels of walking in relation to infrastructure characteristics and perceived qualities of different spaces dominate many discussions concerned with walkability and the promotion of urban walking across policy and practice. Quantifying and measuring walkable urban neighbourhoods were at the heart of the New Urbanist planning movement that emerged in North America in the 1980s as an antidote to automobile dominated, residential suburban sprawl.
Drawing on fieldwork in the UK and international secondary sources, the book examines how walking is socially and materially co-produced, focusing on pedestrian practices, infrastructures, and the social nature of walking.
The book considers transport planning and policy promoting pedestrian movement, pedestrian infrastructures, the politics of walking, and social interactions of urban pedestrians. Chapters in the book offer vital analyses of how different but overlapping dimensions of walking and their relationship with urban space are often overlooked, and the importance of centring the lived experiences of walking in understandings of pedestrian practices. This book is a possible resource for students and scholars of urban studies, human geography, sociology, and public health.

Pedestrians, Urban Spaces and Health: Proceedings of the XXIV International Conference on Living and Walking in Cities (LWC, September 12-13, 2019, Brescia, Italy)

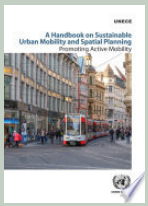
Editor: Maurizio Tira, Michèle Pezzagno, Anna Richiedei
Publisher: CRC Press
Pubblication year: 2020
ISBN code: 9780367687571

"Pedestrians, Urban spaces and Health" contains the papers presented at the XXIV International Conference "Living and Walking in Cities" (Brescia, Italy, 12-13 September 2019).
The main goal of the Living and Walking in City Conferences is improving urban quality while promoting safer mobility, especially for the most vulnerable road users, and this aligns with the United Nations Sustainable Development Goals (SDGS).
Mobility management and road safety can play a significant role in improving city management and the urban landscape. For this reason, this topic is relevant for urban planners, not just transport and traffic engineers.
The contributions discuss town planning issues, look at best practices and research findings across the broad spectrum of urban and transport planning, with particular attention to the safety of pedestrians in the city. Today, citizens advocate greater environmental sustainability, better services and the improvement of urban quality by promoting safer mobility and health.
The main topics of the book are:

- walking experiences;
- urban spaces and redevelopment;
- healthy cities (as urban resilience and for weakest users).

The book is a powerful plea for a multi-disciplinary and comprehensive approach to urban mobility and planning, and it is of interest to academics, consultants and practitioners interested in these areas.

A Handbook on Sustainable Urban Mobility and Spatial Planning: Promoting Active Mobility



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Publisher: United Nations
Publication year: 2020
ISBN code: 978-92-1-004859-0

"A Handbook on Sustainable Urban Mobility and Spatial Planning" has been designed to assist member European States in integrating transport, health, quality of life and environmental objectives into urban and spatial planning policies.
It provides many references to case studies, good practices and examples from cities across the Euro-Asian region (and beyond) covering a wide array of thematic areas, including: the future of sustainable urban mobility; spatial planning in function of sustainable urban mobility and accessibility; public transport planning as a cornerstone of sustainable urban mobility; active mobility and how it promotes health and the environment; the potential of Intelligent Transport Systems in an urban context. Chapter 4 of the publication is focused on "Promoting active mobility for healthier urban life" in which it emerges that Active Mobility serves as the interface between transport and health policy, as both sectors have an impact on peoples travel behaviour and contribute to healthier and more social urban environment.
The publication puts forward a methodology for sustainable urban transport planning and introduces a concise set of key messages and recommendations.

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Author's profile

Annunziata D'Amico

She is an engineer, Ph.D. student in Civil Systems Engineering at Department of Civil, Architectural and Environmental Engineering of University of Naples Federico II. Currently, her Ph.D. research concerns the topic of urban mobility.