

# CITTÀ POST-PANDEMIA: NUOVI SOGGETTI, GESTIONE, OPPORTUNITÀ, FUTURI DEGLI SPAZI CONTEMPORANEI

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*La pandemia da Covid-19 ha avviato una profonda riflessione sul futuro delle città e dei territori, a partire dagli elementi di criticità emersi durante le alterne fasi di lockdown. Una riflessione che ha reso esplicita la crisi dei modelli spaziali e funzionali esistenti, mettendo profondamente in discussione gli stessi fondamenti epistemologici della disciplina e disvelando, d'altra parte, nuove opportunità per un suo complessivo e profondo ripensamento. La questione investe tanto il piano speculativo della riformulazione dei modelli teorici di riferimento, quanto quello pratico della ri-organizzazione funzionale dei modi dell'abitare e della gestione degli spazi, primi fra tutti, quelli pubblici. A partire da tali considerazioni, la sessione si interroga sulla domanda di cambiamento che investe la disciplina urbanistica, accogliendo riflessioni teoriche e contributi riconducibili all'esperienza pratica sul futuro della città post-pandemica. Attenzione particolare verrà posta sulla natura inedita di nuovi spazi e di nuovi attori, così come sulla dimensione etica e sulle emergenti forme di disuguaglianza generate da tali mutamenti, i cui esiti rivelano talvolta natura incerta e selettiva, considerando la molteplice (e confusa) sovrapposizione di procedure e strumenti di pianificazione spaziale.*

## The question of proximity. Demographic ageing places the 15-minute-city theory under stress

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### Abstract

*Some of the major future challenges regarding urban planning are related to population ageing. Although improvement of longevity can be certainly regarded as a human development success, many issues emerge in parallel including social, economic, and spatial aspects. The Covid-19 pandemic experience and the social distancing measures implemented have highlighted the need for compact communities and neighborhoods and in this context, urban theories promoting locality and accessibility gained significant momentum. This paper focuses especially on the 15-minute city concept and sets its core element -an isochrone of 15 minutes of walking- under scrutiny, to highlight how ageing places urban planning practices and conventions under stress. Thus, it aims to contribute to the discussion regarding proximity and the walkable city, whether that refers to a 5-, 10-, 15- or 20-minute model.*

### Post-pandemic city: new subjects, management, opportunities, futures of contemporary spaces

*Demographic Ageing, the question of proximity and the concept of the 15-minute City*

Ageing refers to a major shift in demographic cohorts that reflects an increased life expectancy combined with lower fertility rates, leading to a higher proportion of elderly within societies (1). Although longevity can be definitely considered human development success, ageing is also linked with many challenges that emerge in parallel. These include economic issues such as pension costs, reduced labor supply, increased need for medical care, and many more. From a spatial and urban planning perspective, issues involve putting forward agendas that promote active ageing. Active ageing means helping people stay in charge of their own lives for as long as possible, something that equals independent mobility and equity of access to services and amenities. In other words, ageing is strongly linked to accessibility issues.

The question of access – where, when and by whom – is one of the most classic issues for the spatial and functional organization of cities and is topologically linked to geographical distance. Planning models that promote proximity aim at an urban form that ensures equity of access to functions and land uses by all, something that implies high densities and mixed land uses as well. This is generally opposed to models promoting distinct and differentiated zones that heavily depend on trans-local connectivity and especially cars, to connect areas for daily commuting (2).

During the Covid-19 pandemic, the lockdowns, and the unfolding of mobility restrictions throughout Europe, the question of accessibility came to the forefront of academic and political discussions. That became most evident for population groups that came to be known as “high risk”, meaning mostly the elderly and people with specific medical conditions. At a societal level and mainly due to ageing, a significant proportion of European populations fell automatically within this

category and in that sense, cities were “high-risk”, too. At an individual level and scale, varying levels of accessibility have determined the quality of life for most of the urban populations, and more so for those belonging to the high-risk groups, for almost two years. Overall, the social distancing measures highlighted the need for cohesive and compact communities and neighborhoods and in this context, concepts promoting locality and proximity like the 15-minute city (15MC), gained significant momentum (3).

In brief, the basic idea of the 15MC states that cities should be designed – or redesigned – so that residents of all ages and social backgrounds have access to their everyday needs (housing, work, food, health, education, culture, and recreation) within an easily reachable distance set to 15 minutes. To accomplish that goal, the theory advocates a shift from private vehicles to active mobility (mainly, walking and cycling), amid high residential densities and through the mass adoption of digital technologies such as remote work or shared travel, that reduce unnecessary mobility and waste of time, in general (C40 Cities; Allam et al., 2021; Moreno, 2022).

Although the 15MC may be initially viewed as a rebranded proposition towards proximity, locality, mixed uses, and compact neighborhood design (4), it is often considered more literally as a planning practice or spatial analysis tool (5). 15MC refers then to an isochrone that expresses a radius defining an area considered to be local. Isochrones are not new and have long been used in transport planning, though they have gained wider attention in recent years, mainly due to the use of digital GPS tracking applications that enable near real-time data flows and estimations both for users and researchers, or the planning community. Isochrones, are mainly constructed with two variables: time and speed. Average speed conventions regarding walking (or cycling or driving) are used to determine the radius that defines “nearby” and as so, a question emerges, as to what extent such conventions concern most of the people within a city, and most specifically the older ones, as will be further discussed in this paper.

### *Hypothesis*

To highlight how ageing places urban planning practices and conventions under stress – let alone when those are taken as normative guides – a simple hypothesis is examined, which states that ageing corresponds to a physically limited active

mobility capacity for older people. If true, temporal-referenced guidelines such as the 15MC are expected to overestimate the ability of older people to cover equal distances in comparison to younger adults within a given timeframe. Moreover, as the urban population keeps ageing, the same fallacy can lead to ever-shrinking accessible areas and (possibly) age discrimination. To test the assumption, the focus lies specifically on the radius implied by the 15min city theory through walking, which is by far the most common form of an active and no-car-dependent mean of daily mobility.

### *Methods and Analysis*

To explore how the 15MC walking isochrone corresponds to two age groups, defined here as “adults” and “older adults”, an online database search has been conducted using Google Scholar in research published in English (in early 2022), extending from 1995 to 2020 and concerning reports of objective measured walking speeds per age group and especially for older people (usually defined as over 60 or 65 years old). It is well established that free-living walking speeds fluctuate with terrain features, natural conditions such as temperature, visual stimuli, socioeconomic status, culture, or movement purposes (Levine et al., 1984; Finnis et al., 2008; Fitzpatrick, 2006). To identify less subjective measures that better represent the human body’s physiological limitations and to exclude as many environmental factors as possible, the online search narrowed to studies measuring pedestrians’ speed while crossing crosswalks. The assumption here is that moving on a crosswalk is done at normal to vigorous speed, without distractions, as quick as possible, but not fast enough to become too inconvenient.

A significant number of papers have been retrieved, from which five studies were selected on the base that they provided not only average values but also estimations in the 15th percentile. The 85th and 15th percentiles of a normal distribution are two parameters that are commonly used in traffic safety, as the 15th percentile speed represents a threshold that can be exceeded by at least 85% (significant majority) of the population involved, to be used in recommendations.

To test the hypothesis, two new average speeds were calculated, one referring to average speeds measured and one referring to 15th percentile estimations. Accordingly, the distance covered in 15 minutes was recalculated for each age group, as well as the time

needed to cover 1000meters (1km) which is another well-known walking-distance convention to define a neighborhood. Finally, in order to visualize the differences between groups in spatial terms, a network analysis was conducted using QGIS in the city center of Athens (municipality of Athens) and service areas were analyzed around Athens-Metro stations, as an example.

### *Results*

Based on the values presented in Figure 1, the reported walking speed for younger adults was found to be significantly (21%) faster than for the older ones in average measures terms, and (32%) in the 15th percentile. The difference between average measures and 15th percentile estimations was significant, pointing out that using mean values overestimates speed conventions more so for the elderly than the younger adults. Reverting the speed-time-distance calculations for the 15th percentile estimations, the equal 15-minute walking distance ranged from 805meters for the elderly to 1060meters for younger adults. By taking as a reference the 1000meters (1km) convention, the travel time was close to 15 minutes for the younger adults and 20 minutes for the elderly.

### *Discussion: Ageing Cities, shrinking places, and the re-emerging question of proximity*

Due to demographic ageing, planning for all age groups has often been discussed in the past decades with an emphasis on social cohesion, community development, urban health, and the adaption of planning practices to new mobility needs and trends. As societies age, physically intensive mobility capacity shrinks in terms of endurance and speed, and city areas and land uses become less reachable in that sense. Demographic data of today and future projections, especially regarding Europe, both point that equity of access through active mobility, is to become more challenging in the future. This observation in the era of fast inter-continental transport and the vast adoption of digital tools that eliminate physical proximity for many economic activities and material flows almost represents an irony.

In light of the Covid-19 pandemic and the lockdowns experience, the surging return of interest to the local unit as the core of multiple and overlapping human activities was a notable and welcomed outcome of this turbulent period. Proximity theories, whether they refer to a 5-,10-, or 15-minute model or a 500m or 1000m distance buffer, can

Walking Speeds m/s				
Source	Adults	Older People	(Faster)	Notes
Knoblauch et al. (1996)				
Average	1.51	1.25	21%	Un-signalized midblock crosswalk
15th Percentile	1.25	0.97	29%	
Gates et al. (2006)				
Average	1.41	1.16	22%	Pedestrian traffic signals crossing
15th Percentile	1.15	0.92	25%	
Montufar et al. (2007)				
Average	1.61	1.36	18%	Un-signalized midblock crosswalk
15th Percentile	1.34	1.01	33%	
Fitzpatrick et al. (2006)				
Average	1.45	1.30	12%	Intervals for traffic signals Under/Over 60 years
15th Percentile	1.15	0.90	28%	
Guerrier and Jolibois 1998				
Average	1.35	0.97	39%	Urban Intersections
15th Percentile	1	0.67	49%	
<b>Average Speeds</b>	<b>1.47</b>	<b>1.21</b>	<b>21%</b>	
<b>Average 15th Percentile speeds</b>	<b>1.18</b>	<b>0.89</b>	<b>32%</b>	
<b>1000m Covered in 15 minutes (15th percentile average speed)</b>	<b>1060</b>	<b>805</b>		
	<b>15.56</b>	<b>20.51</b>		

Fig. 1. Retrieved reported values and 15th percentile estimations from the five studies.

to the availability of free time and the voluntary trade of effort and speed for endurance and socializing, thus causing even further confusion (Buehler et al, 2011; Sugiyama et al, 2019). Finally, main assumptions as the digitization of most everyday-life activities should be treated with healthy skepticism, especially for those that are less capable of rapidly adapting to new and tech-savvy lifestyles. In conclusion, to answer the question of “how far is too far” – that can be of course rephrased as “how long is too long” –, a better and more detailed approach is suggested when putting into practice what appears to be, or can be holistic suggestions.

*Suggested Future Steps: Cities and changing human bodies*

At least from a Eurocentric point of view, most of the planning and anthropometric standards and conventions regarding pedestrian walking in literature, trace their roots to



Fig. 2. 15m-walking Service Areas around metro stations in Athens Municipality for the two age groups. Distances were set to 805m (grey color-older people) and 1060m (red color-Younger Adults) and results were visualized in two scales. Street network data was retrieved from OSM (OpenStreetMap) and the urban fabric background from Urban Atlas LCLU 2018- dataset. Network analysis was conducted using QGIS software.

as such be regarded as justified models for walkable and neighborhood-oriented cities. Regarding the 15MC, the theory indeed bears some new and interesting concepts such as the embracement of high densities linked to the massive adoption of digital technologies. Yet, focusing more on time values (or “chrono-urbanism”) also involves significant limitations, especially when the theory is taken as a literal goal or spatial analysis method. In that case, if the core element of the theory (15-minute distance) is stressed with challenging issues such as demographic ageing, the limitations of such conventions

become more evident and need to be better adjusted. Even though simply adjusting timeframes for the elderly (e.g., by 30% as argued in this research) could be a “quick fix”, it should be mentioned that walking capacity should not be confused with the ability, the will, the reason, or the motivation to walk at a first place, pointing to a multifactorial relationship that can be overlooked by quantitative and normative methods. For example, regional research findings have pointed out that many older people tend to walk significantly long distances daily, but just for a few years after retirement age and probably due

the post-war reconstruction aligned to the last major phase of expanding urbanization related to population growth. Accordingly, European Cities’ urban forms today have mainly been structured around the concept of the nuclear family and work-home daily commuting, emphasizing functionality and purposely directing resources and planning agendas toward that double goal. Yet, as demographics change, the nature and organization of work change, and finally human bodies change, these conventions need to be revisited and revised to better align with up-to-date data and future projections. ■

## FootNote

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1 While population ageing is a global phenomenon the European Union provides one of the most distinctive examples. Ageing is more evident in the periphery of the EU geographic core, specially the Southern and Eastern parts and similarly differences are also observed within cities and neighborhoods.

2 Like for example the Post-War CIAM agendas, or the US suburbia

3 Although Paris adoption of the goal gained significant attention, the agenda is put forward by large number of cities around the world, for example those belonging to the C40 network: <https://www.c40.org/cities/>

4 The concept is described by Moreno (2021) as "chrono-urbanism", meaning time-based and oriented urbanism

5 For example: Abdelfattah et al., 2022; Caselli et al., 2022; Ferrer-Ortiz et al., 2022; Di Marino et al., 2022; Graells-Garrido et al., 2021, Gaglione et al., 2021.

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