

# THE CITY OF CARE THROUGH WALKABILITY AND PROXIMITY. Researching on and with generation alpha on urban walkability assessment

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## Abstract

The concept of the 15-minute city is a promising model to transform modern cities towards sustainability and resilience. However, the possibilities and accessibility to walking in the urban neighborhood depend on various factors. The average citizen could not be considered a reference to planning and making our cities. If cities are for all, different perspectives and opinions should be included, especially those who are less capable or have limited access to them. One of the under-considered groups for city-making is the children.

This paper presents a pilot research project that aims to engage children in urban exploration to assess the level of walkability to identify opportunities for developing more inclusive urban scenarios and environments. Based on the literature review on proximity and walkability and the relation between children and city-making, a class of 21 students (11 y.o.) has been involved to observe and assess the neighborhood's walkability and imagine a preferred one collectively. From the research results, discussions and reflections emerged. Children have their ways of interpreting the different walkability assessment factors, which might be highly linked among them. The research results bring discussions and reflections on emphasizing human perspective and perception of the city's walkability assessment criteria. Besides, the engagement approach and tools for urban observation and investigation are tested as an effective way to activate relationship building among stakeholders, who could collaborate better to care for the city where citizens, especially the children, live in.

## Author keywords

Walkability; Proximity; Children and City; Stakeholder Engagement; Strategic Design Research.

## Introduction

Urban proximity has been considered a desirable characteristic of future cities (Banister, 2011; Boyko & Cooper, 2011; OECD, 2012) for a long time. In presenting the concept of a 15-minute city, Moreno et al. (2021) state that residents will enjoy a higher quality of urban life where they can effectively fulfill six essential urban social functions in proximity urban contexts: living, working, commerce, healthcare, education, and enter-

tainment (Moreno et al., 2021). Applying this model requires a careful consideration of the hybrid usage of the spaces to provide the necessary functions and services for the residents and citizens. Moreover, the neighborhood should allow residents to move effectively – on foot or by bicycle – from place to place without problems and difficulties. The relationship between urban form and mobility has been mainly analyzed through three factors: environmental issues, the social significance of walkability, and the use of time in moving and traveling (Marquet & Miralles-Guasch, 2015). Rodrigue et al. (2006) have stated that one of the difficulties in analyzing proximity from the mobility point of view lies in the lack of a linear relationship between space and travel time due to the different speeds of each type of transport. This means that the different ways to study proximity vary according to how people move or travel from one place to another. Since the promotion and application of the concept of proximity have highlighted the importance of moving by foot, the relationship between the urban spaces and the time to travel could be linked and somehow defined by the walking activity. A "walkability" perspective on understanding proximity refers to the physical distance and space in the urban environment as well as the built environment, urban and public facilities, and the presence of necessary services (Blečić et al., 2016); more importantly, the capacity of people to reach a certain place (effort and access), the motivation and objectives, the sentiment and feeling, as well as the "invisible" social and cultural significance (Ewing & Handy, 2009).

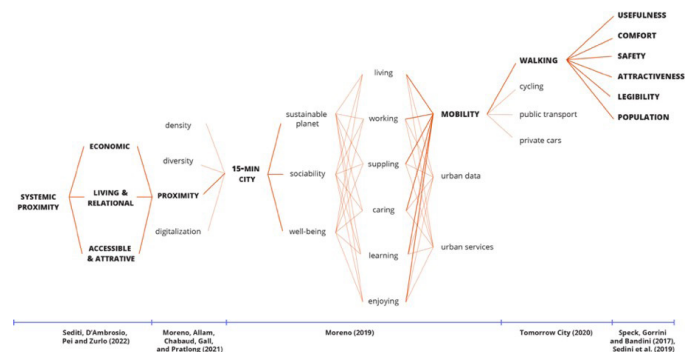


Figure 1. Visualisation of the connections of the factors related to the concepts of proximity and walkability.



The development of a more walkable urban environment is aligned with the notion of proximity. Jane Jacobs (1961) was one of the first urban planners who emphasized the importance of neighborhood proximity and the activism it can generate. She considered cities as dynamic and complex ecosystems, observing them in their infrastructural details and paying attention to sidewalks, parks, urban furniture, etc., as opposed to car-centered design. A first attempt on constructing this intersection between proximity and walkability was made in a paper presented at the RSD2022 conference, where a new concept of Systemic Proximity was introduced not only from the functional and spatial perspectives, but also the relational one, systematizing its domains with Quintuple Helix spheres (Sedini et al., 2022). Speck (2013) has presented the importance of developing the city for pedestrians and walking activity, which requires infrastructure development, network connectivity, a high land-use mix, vitality, and distinction of urban character. He identified four main walkability assessment criteria: *usefulness*, *comfort*, *safety*, and *attractiveness* (Speck, 2013). Safety is the key barrier to walking activities that includes issues like crime and traffic (Forsyth, 2015), which is defined not only by the infrastructure and built environment but also by the perceptions of safety. Besides functional factors, Van Cauwenberg et al. (2018) observed a positive association between walkability and aesthetically pleasing scenery with leisure time walking, emphasizing the necessity of considering "attractiveness". The analysis and assessment elements and methods of walkability and proximity have mainly focused on measuring through the use of assessment tools such as GIS analysis, space syntax, observations, sensors, and digital apps (Aerts, 2018, Blečić et al., 2015, Gorrini and Bandini, 2018, & Peyton, 2019) to evaluate the so-called location-based data, mainly related to infrastructural characteristics. While guides and in-depth studies addressing proximity and walkability from the people's (human) perspective (Marquet & Miralles-Guasch, 2015), individual-based data, are still lacking.

### Children and walkability

A loud recall for humanity and a higher quality of life for all has been reawakened in every city worldwide (Sedini et al., 2022). Lefebvre (1968) defines the concept of 'the right to the city' as the phenomena that entail the social relations, functions, services, practicability of the urban public space, and its mission to fulfill the instances of all city users (Annunziata & Garau, 2018). It is extensively established that walkability contributes to the physical and mental health (Rundle et al., 2016; Todd et al., 2016; Zuniga-Teran et al., 2016) of people, regardless of age group; it also contributes to the quality of life and social inclusion of citizens that can develop a sense of belonging and ownership (Gorrini, 2021; Speck, 2013). Children's walkability is still not widely explored and consolidated because of their great complexity (as a group) and diversity of needs, especially given the limited available data (Gorrini, 2021).

The ability to walk freely and safely significantly benefits children's healthy and conscious growth as it involves experiences and practices that foster independence and autonomy (Shaw et al., 2015). Play is a fundamental activity of exploration and learning for children, deeply affected by the relationships between young citizens and urban areas (Annunziata & Garau, 2018). Furthermore, children's enjoyment of urban spaces allows them to observe and practice adult behavioral patterns, thus experiencing social constructions and developing inter-

personal skills while gradually and individually defining their personas by contributing to society as future adult citizens (Unicef Innocenti Research Centre, 2004). This is where the many strategies and tools for assessing walkability come into play, tending to focus on the spatial dimension (Annunziata & Garau, 1980) and universal design indicators (Steinfeld, 2011). Instead, the perceived level of walkability is greatly influenced by the characteristics of individual walkers (Gorrini, 2021).

The children's engagement in city-making discourses is often guided by organizing co-design and co-creation laboratories within urban regeneration programs. These workshops witness the realization of a child's project, vision, or desire using recycled materials, prototyping, or a two/three-dimensional physical artefact (Pierandrei & Marengoni, 2017). As shown in various national and international projects and initiatives, such as *Walking the city at 95cm high* (2018), *Designing Streets for Kids* (2020), *UrbEX* (2022), a moment of exploration and investigation at the start of the workshop can be conducted, asking and instructing kids to take photographs, sketch, and take notes on what they see, like or dislike, all of which is then used to assist them in creating a concept for the identified purposes.

### Research methodology

The main research question we have tried to answer is how young children perceive the concept of walkability in urban contexts. How could the experience of their active participation in the walkability assessment provide potential indications and guides to city development towards proximity?

The pilot experience presented in this paper was conducted during the Sustainability Development Festival 2022. The proposed initiative involved the Alpha generation (born after 2012) - a class of students from the secondary school of the Istituto Comprensivo Giusti d'Assisi. The research was led by a research group of the department of design of Politecnico di Milano in collaboration with the Junior design lab of PACO Design and ADI Design Museum. The team of facilitators and moderators was composed of design researchers and educators. The chosen neighborhood was in the "Sarpi" area, located in Municipality 8 of Milano (Italy). The activity lasted about 4 hours, from the beginning of the school day until lunchtime. It was developed in three macro steps, with three different and specific objectives and locations:

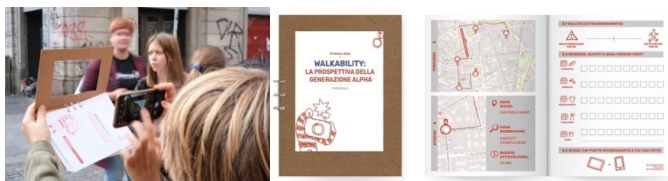
1. At **school**: researchers shared with the class (21 students) the agenda and the key concepts of walkability and proximity. After the first moment of knowledge sharing, awareness raising and ice-breaking, each student was given a booklet, a pen, and a badge. The first task of the booklet was individual and aimed at collecting the personal data about their knowledge on the neighborhood and their mobility habits.
2. In the **neighborhood**: the class left the school and started exploring, observing, and collecting data in the neighborhood and assessing proximity through the walkability factors. The walk was organized along two paths (A and B). Students were divided into two macro groups and then micro-groups of three members to collect data, which explored 6 pitstops distributed along the two routes (starting from the school and ending at the ADI Design Museum).
3. In the **museum**: once at the ADI Design Museum, the class was hosted in the Junior Lab spaces, managed

and curated by PACO Collaborative. This activity was about creating a story using a specific template that allowed the micro-groups to present what they had learned. The story was developed in both text and a collage, using three photos of the various pitstops explored by the micro-groups. The images used for the collage are prepared by researchers to support the creation of the collage. This activity aimed to reflect on what had been explored and share an initial evaluation of the neighborhood's walkability. Finally, a short collective plenary presentation by each group took place.

At the end of the activity, students left with a questionnaire to answer anonymously, which was then collected by the educators and were returned to the research team after a week.

### Research tool design and data collection

In addition to presenting six tasks (one for each pitstop to journey A or B), a paper booklet with a special cardboard cover was designed to involve students playing an active and leading role in the research and observation activities (Sander & Sappers, 2008). Each page in the booklet provides specific tasks to guide students' observation activities. Besides, the cover is designed as a frame that works as a photographic frame, which could be used by the students to individually choose what to photograph with the help of the researchers and facilitators (Fig. 2). The frame enables students to show their own points of view and decide what they want to take and collect.



**Figure 2.** Some photos showing the booklet used by students: the cover (left) and examples of specific guides and tasks that students need to carry out (right).

Moreover, the tasks were quantitative and qualitative questions, specially alternated and based on proximity through the walkability factors. The questions, always placed on the right-hand page, were accompanied by a display of the overall map, pitstop reference point, and the walkability factors related to it (Fig. 2). The template used for the stories, on the other hand, was structured to provide space for text and space for collages (Fig. 3). There were to be three collages, using as a background, a realistic photograph of three of the six pitstops explored during the second macro phase of the pilot. The story was to be about a peer's walkability experience and was realized through a co-creation session by each micro group at the ADI Design Museum.

The research team collected all artifacts used and produced by the students for analysis purposes. These artifacts are both analog and digital. The analog data include those from the questionnaires (pre and post-experiment ones), the contents of the observation and evaluation carried out by the students, and the stories at both textual and figurative levels (the collages) in the last phase (Fig. 3). The digital data mainly includes the photos and videos taken to represent the students' points of view. The analog one was then transferred digitally by scanning and using a form to structure a helpful worksheet to triangulate the data analysis and insights that emerged.



**Figure 3.** Template(left) used for the creation of the neighborhood story in the last phase and an example of the filled tool with photos and stories (right)

### Data analysis

The data analysis has been conducted by integrating digital and analog data triangulation. In this paper, we present the first results of data analysis; the authors mainly explored and generated answers to the research questions regarding walkability and civic engagement methodologies. For further investigation, the stories and collages will be analyzed by involving external psychology, education, and GIS experts. Therefore, to answer the research questions stated above, the analysis results thus were clustered into two main categories, the first one deal with the thematic content/topic of the research, children's perception and perspectives on the neighborhood's walkability and proximity, and the second one exam the research methodology itself.

Regarding the former, information extracted from questionnaires and booklets that present the children's perspectives has shown some differences from the literature and practices related to urban planning and regeneration. The walkability factors have often been seen as well-defined, clearly categorized, and distinct from one to another. However, the young children who participated in this pilot showed that the walkability factors (such as usefulness, comfort, safety, attractiveness, legibility, and population) could be correlated and overlapped above all. In other words, the students considered the factors together and not individually, creating relationships and even correlations by citing actions and actors. For example, following this reasoning, it is helpful to quote one of the many answers in response to the question "what is the most important walkability factor for you?" which is "the most important factor of walkability, in my opinion, is usefulness - utility for the simple reason of usefulness = convenience = safety". Another peculiarity that emerged concerning the factors of walkability is the correlation and thus the order or rather the systemization of the six different factors. Here we quote another answer to the same question mentioned above: "because attractiveness makes the population build the need for safety, comfort and work hence usefulness". It is worth noting how much the humanistic aspect of these responses related to the walkability assessment factors is present. And all these bottom-up perspectives and humanistic interpretations have been discussed very little in planning and building urban environments. Finally, another element that emerged is the importance of the sensoriality of urban spaces. The 15-minute city is based on the principle of chrono-urbanism, which sees the quality of life based on short and easy spatial-temporal accessibility. From the explorative experience, an emotional and relational dimension to the place could be observed by integrating data collected from the questionnaire and relevant questions in the booklet. This result indicates the potential studies on including a human perspective in the definition of walkability parameters and the assessment factors, and the role citizens could play in proposing different approaches to evaluate walkability.

Regarding the second cluster of results, the one concerning methodology, what emerged, in particular, is the great potential for capacity building and awareness raising that this type of activity can enable and empower. Indeed, answers to the question *"Did you enjoy today's activity? Why?"* such as *"I never notice the important things, so it helps me a lot"*, *"I had much fun [...] I noticed things I would never have seen"* and yet *"because it teaches me useful things in everyday life, and it is also very fun and interesting"*. Civic engagement linked to walkability experiences that consider participants as co-researchers trigger virtuous circles of capacity building and awareness raising that thus contribute to healthy growth as (future) adult citizens. It is, therefore, a question of empowerment, not by chance that it has been verified how answers questionnaire at the beginning of the experience, *"I know the neighborhood"*, at the end of the experience *"it was useful for me to notice things"*. The results of this pilot experience also reveal this kind of citizen engagement actions could set up strategies to articulate the needs of "overlooked" vulnerable targets, who may have diverse preferences and needs regarding amenity accessibility (La Rosa et al., 2018 in Weng et al., 2019).

## Discussion

The analysis of research results brings further reflections and indications on how our cities could provide more care:

Firstly, including citizens' perspectives in city-making is more than involving them in co-research, co-creation, and co-design workshops. Participatory design is an effective way to embrace the users' perspectives in the solution-making process, especially for challenges and problems that are complex, ill-defined, and contextualized. However, not everyone has the capacity and knowledge to be able to actively provide their contributions. People have the right to user participation in design only if effective policies make people truly capable of design (Dong, 2008). Especially when facing vulnerable targets, who might have fewer possibilities to participate. From this research activity, we understood that the first phase of warm-up, the presentation on the concept of walkability and proximity, and the guided observation in the neighborhood had played a crucial role in making participants fully prepared for the last co-creation activity. Designers and design researchers should not only work on proving the accesses and occasions

to engage participants in the conversations and design actions, but they should not ignore the necessity to equip the citizens with sufficient background knowledge and easy-to-act methods and tools, as well as concrete and unique personal experiences in which they feel comfortable and confident to make their suggestions and proposals. Therefore, we emphasize the co-research activity as important as the co-design/co-creation in the civic citizen engagement area.

Secondly, design and research interventions could activate new ways to collaborate and interact among stakeholders in the urban territory. The proximity concept promotes the mix-use and multi-functionality in the city, which will eventually facilitate new relationships, connections, and interactions that didn't exist before. However, this objective is difficult to reach without the participation and engagement of citizens and residents, who physically move in the neighborhood among different places and locations. For instance, the middle school and ADI design museum are physically quite close to each other; however, before participating in the research project, they have never had the chance to know each other, not even mention to collaborate. Both during and after this research project, we have seen and heard about the interest from both sides to continue the possibilities to collaborate on relevant activities and events. Moreover, middle school students have expressed great interest in coming back to learn better about the design museum and explore interesting events to participate in. The feedback and results demonstrate that the Quintuple Helix (eco)system of relationship (Carayannis & Campbell, 2010) could be activated and initiated by citizens' engagement in city-making and city-researching, at the same time, these actions foster the implementation of 15-minute city concept, which will eventually provide more effective care to citizens and residents.

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