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Urban Planning

# CITIZEN MAPPING AS A CITY-MAKING PRACTICE

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**ABSTRACT:** This paper hypothesises that gaps in knowledge and understanding of our urban spatial processes have been facilitated by a stark emphasis on measurable and simulated data, as well as by the absence of non-measurable subjective experiences in contemporary data collection methods. Therefore, the paper discusses an inclusive way of contributing to city-making in which citizens create as well as add value to, and extract value through their collective efforts.

The research aims to deepen engagement between citizens and urban design by discussing an app-based participatory tool through which citizens can identify, record and reflect upon different space-making parameters in their immediate surroundings. This tool provides a novel vocabulary to challenge the exclusionary practices of contemporary data collection, and brings out the strengths of citizen participation within urban design.

**KEY WORDS:** Citizen mapping; augmented space; open data; participation

## Introduction

The interdependencies between city planning and the data processes utilised to do so, have become a mutually informing enmeshment that is continually expanding. Hence, one of the most urgent tasks for research in urban studies, geography and citizen science is to address the shortfalls and inconsistencies of the collected data in

depicting the spatial unfolding of different processes in contemporary cities.

In order to identify and capture all the material and immaterial layers our cities consist of, this paper proposes a new multifaceted approach using an innovative tool/app combined with citizen engagement. We unconsciously recognise and classify places according to their underlying parameters, which can range from broader phenomena such as aesthetics and accessibility, to specific phenomena such as green spaces and amenities. The research aims to reveal these unconscious processes and transform them into conscious procedures, elevating individual observations of our cities in order to reorganise them into collective knowledge. This citizen-centred approach would open up collected data to both citizens and city-planners as a form of commons for active use, and is therefore presented as a radically democratic and urgent approach for identifying the essential components which constitute a city.

## 1. Inconsistencies of contemporary data collection from urban space

Increasing entanglements of data, digital platforms, and city planning are significantly impacting all aspects of urban life (Mörtenböck & Mooshammer, 2021). Collecting and processing of an enormous amount of data occurs simultaneously in the physical and the digital realm and represents one of the fundamental features of digital platforms (Končar-Gamulin, 2021). While data aggregated by platform companies is continually and widely the driving force of urban change on a macro scale, this aggregation often fails to capture the plethora of layers and micro-processes which form the fabric of urban life. This failure has a detrimental impact on our understanding of urban space and orients the future of spatial interventions away from the needs and desire of citizens.

Furthermore, the research hypothesises that gaps in knowledge and understanding of our urban spatial processes have been facilitated by a stark emphasis on measurable and simulated data, as well as by the absence of non-measurable subjective experiences in contemporary data collection methods. Sensors measure environmental data and urban phenomena such as air quality, noise levels, movement and diverse climate indicators, while simulations reproduce or predict events based on this data using pattern recognition, machine learning and artificial intelligence. These recordings and reproductions of different urban and ecological phenomena do not suffice in extracting truly heterogeneous data from our spaces by themselves (Hollis, 2021). Therefore, the research postulates that the non-measurable subjective experiences which have been largely excluded from city mapping represent not only the missing link in learning about our environment, but also the crucial terrain for negotiating future urban interventions in sync with citizens' needs.

## 2. Hybridising urban data collection methods

The widespread use of smart devices has made it easier to incorporate citizen engagement in different procedures, yet their participation is often tied to and organised via digital platforms. Though these platforms operate on the global scale, urban spaces in which they interfere are extremely context-dependant. Therefore, the inevitable side-effect of data-driven urbanisation is the disconnection between the digital and the physical aspects of urban space. For this reason, this paper suggests a shift from a networked and platformed way of organisation to a site-specific form of data collection from citizens. In other words, citizen mapping in this sense can be defined as a practice of city-making that shifts critical focus from the global, platformed operations, to a site-specific plethora of nodes (sites), each operating according to its own set of principles.

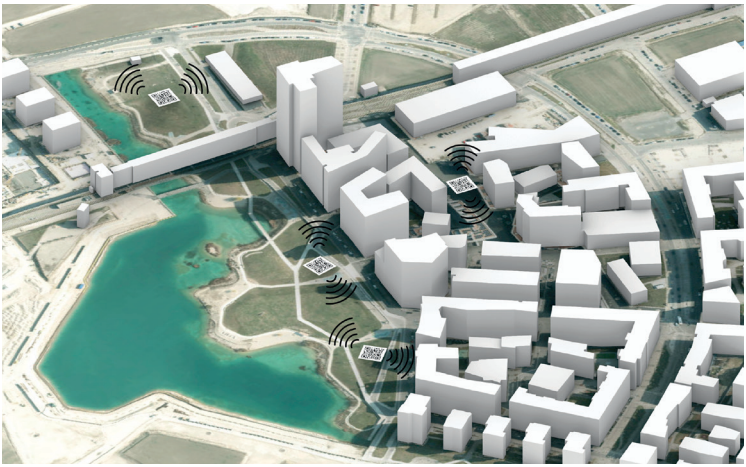

Figure 1. The innovative framework for city-mapping manifests as a spatial survey and allows citizens to simultaneously learn about their environment and contribute to improving it by mapping different parameters in their surroundings

Building upon the hypotheses outlined above, this paper introduces an innovative framework for city-mapping (fig. 1) which centres on citizen experience of urban space. This citizen-centred approach encourages opening collected data to both citizens and city-planners as a form of commons for active use (Sadowski, 2020). This approach will materialise as an innovative mapping tool that will be developed during the research in the form of a data-collecting app/game and deployed in urban space. Augmenting specific urban spaces with this tool intends to establish a medium be-

tween citizens and urban spaces with the purpose of creating a new type of data that is collectively generated, managed and cared for (Mörtenböck and Mooshammer, 2021). In order to expand the potential uses that might accompany these new types of data collected, the research draws on the concept of "just good enough data" developed by Helen Pritchard and Jennifer Gabrys (2020) with the aim of countering the reliance on high accuracy as the only criterion that data is evaluated upon.

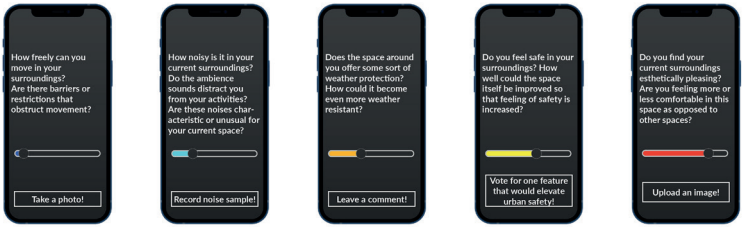


Figure 2. The interface of the app/game that will be used to guide citizens through evaluating their surroundings by providing a number of qualitative methods to capture the relevant parameters that constitute our urban spaces

## 3. Blending measurable data and subjective experiences into comprehensive maps

The space-embedded nature of phenomena we can identify and extract from our environment in the form of data encourages a spatially specific approach to the discussed app's functionality. Through the app, citizens are expected to identify, record and reflect upon different parameters in their immediate surroundings (fig. 2). This input would contribute to a collective network of data generated from a range of mapped components, followed by generating maps of particular phenomena, for instance: weather resistance, accessibility, urban safety, aesthetics and others (fig. 3). This affirmation of citizens' non-measurable subjective experiences as the crucial terrain for negotiating future urban interventions draws on Jennifer Gabrys' notion of urban sustainability as achieved through citizens becoming "sensing nodes" or citizen-sensors within the smart city imaginary (2014).

These maps can also be supplemented with measurable data collected via sensors through different accessible Application Programming Interfaces (API) in order to generate a holistic reading of both the measurable and non-measurable aspects of space:

- For instance, data on urban noise levels could be complemented by citizen expe-

riences of phonaesthetics (pleasantness of sounds) to create comprehensive noise maps.

- Likewise, real-time air quality and climate data could be paired with subjective representations of urban recreational spots or routes, to promote or discourage activities in specific areas at particular times.
- However, data on some individual experiences such as aesthetics, or lack of amenities could independently focus critical attention on urban spaces that require more care and thorough rethinking.

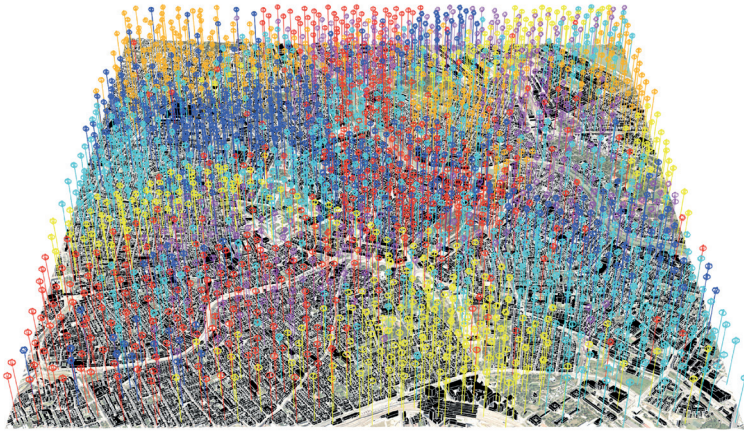

Figure 3. Maps of gathered non-measurable subjective experiences allow us to distinguish sustainable and favourable urban spaces and processes from others reported as inadequate and problematic, and to make future interventions better, more timely, and in sync with citizens' needs

## Conclusion

This paper discusses the inconclusiveness of measurable and simulated data that is being collected from urban space in identifying and capturing complex urban processes. In order to fill the gaps in knowledge and understanding of our urban spaces and processes, this paper discusses techniques to elevate individual observations of our cities and transform them into collective knowledge.

These techniques would facilitate the distinguishing between pleasant, sustainable and favourable spaces, from others reported as inadequate and problematic. This would thus provide city planners with accurate data on both objective and subjective representations of urban space. Chosen places of interest would thus become inform-

ative and participative sensing spaces where a virtual open referendum would occur.

## Literature

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