The Sensorial Map of the City

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ABSTRACT

Our daily urban experiences are the product of our perceptions and senses, yet the complete sensorial range is strikingly absent from urban studies. Sight has been historically privileged over the other senses and urban studies. However, smell and sound have also a huge influence over how we perceive places, they impact our behavior, attitudes and health. Yet, city planning is concerned only with a few bad smells and with limiting noise levels. We propose a new way of capturing nuanced sensorial perceptions of cities from data implicitly generated by social media users and of producing detailed sensorial maps of our cities.

Keywords

Urban informatics; smell; sound

A positive perspective on smell and sound

Previous work in urban planning has mainly focused on the negative side of urban smells and sounds, aiming at reducing the incidence of diseases and illnesses they cause in the population. Pleasant smells and sounds have been left out from the urban planning literature, yet they have been shown to positively impact city dwellers' health. Also, both positive and negative sensorial perceptions contribute to the city's identity as they provide insights into the social life of cities. Not knowing which of smells and sounds exist in cities may result in partial views of the collective image of our urban areas, favoring the proliferation of clone towns and reinforcing socio-economic boundaries.

Capturing perceptions from social media

The idea is to draw sensorial maps of the city by searching for smell and sound-related words on geo-referenced social media content. To this end, we first build two dictionaries of smell and sound-related words. To do that we ventured out in the urban world and conducted sensory walks, where participants were exposed to a range of different smells and sounds and asked to record their experiences. We also collected sets of smell and sound-related words available from previous studies [6, 2], thus creating the first dictionaries for urban smell [5] and sound [1].

Findings and future directions

We validate our approach by verifying that specific smell categories (e.g., industry, traffic emissions, cleaning) strongly correlate with governmental air quality indicators. Similarly, specific sound categories (e.g., transport) correlate with noise levels measured by city councils. By analyzing the distribution of smells and sounds in space and time, we can pinpoint the best locations and times to perceive them. In particular we find that cities have a distinctive smell footprint that is layered on a scale of smell "notes", ranging from the most pervasive and persistent to the most ephemeral. We also study the relationship of sound/smellscapes with emotions and human perceptions: we are able to map which areas are happy, unhappy, chaotic, monotonous, calm, and exciting. Those insights inform the creation of restorative experiences in our increasingly urbanized world and serve as a basis for next generation mapping and routing services [4, 3]. We hope to contribute to the growing body of literature on how people sensually experience the city and to re-think the role of senses in our urban environments. More information at www.goodcitylife.org.

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