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Smellmap: Amsterdam – Olfactory Art & Smell Visualisation

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Abstract

Creating a smellmap of a city is a subjective, collaborative exercise. During a series of smellwalks local participants foreground their sense of smell and name perceived aromas emanating from the urban smellscape. Data and conversations arising from the walks are 'analysed' and a representative smellscape of the city is visualised as a map. Scents; the nasal stimuli and a catalyst for discussion accompany the map. As a map of what we don't know, indications of geo-located smell possibilities and ephemeral scents combine visualisation with the olfactory to place the emphasis on human interaction with sensory data to create meaning and an understanding of place. Keywords: visualisation, olfactory, smellscape, smell, map

Smellmap: Amsterdam is an artwork that explores individual and shared interpretation of place. Inspired by *toposmia* "which describes the spatial location of odours and their relation to particular notions of place." [1] the artwork aims to refocus sensory perception of a city by temporarily foregrounding the olfactory over the visual through a combination of visualisation and scents. In the Western ocularcentric world a focus on everyday smells can be both refreshing and revelatory, resulting in new knowledge of self and our individual relationships with the city. Smellmapping as research and experiential art practice explores this relationship and encourages a general public audience to do the same through active participation with the exhibited artwork.

Smellmap: Amsterdam is a multi-sensory and participatory experience including printed visuals, 11 individual scents and sticky notes onto which the audience inscribe their own smell associations with the urban smells on "display," leaving a trace of a personal olfactory journey.

As our senses work hard to make themselves invisible, so contemporary art, philosophy and everyday life enable us to use our senses to "rediscover the world in which we live, yet which we are prone to forget." [2] Using design to present urban smellscapes is a relatively new discipline; my approach takes a phenomenological perspective of re-exploring through an alternate sensory modality.

Fig. 1. Smellmap: Amsterdam colour-coded legend and smell symbols/visualisation. (© 2014 Kate McLean.)

Theory

A common preconception is that the city of Amsterdam, Netherlands will smell primarily of cannabis. According to the participants in my study, cannabis has a strong smell, equal in perceived intensity to asparagus, cleaning products, bacon and a dentist's surgery, but it only featured in a couple of neighbourhoods and was not included in the resulting smellmap.

Instead, Spring 2013 in Amsterdam revealed an abundance of the warm, sugary, powdery sweetness of waffles. Oriental spices emanated from Asian and Surinamese restaurants and supermarkets, pickled herring from the herring stands and markets – a link to one of the city's key historical industries. Old books were detected in basement doorways and laundry aromas drifted up into the streets from Amsterdam's many house-hotels. The smell of sun, flowers and new leaves indicated the welcome arrival of a late spring as a light chocolate powder drifted across the city in small smell clouds. The smells are listed in a conventional colour-coded map legend (Fig. 1) as an access point to the graphic symbols used to represent smell instances.

The number of perceptible odours in the urban "smellscape" [3] is vast; recent research suggests that humans have the capacity to detect up to 1 trillion smells [4], but to date there are limited maps of this potentially vast and largely subjective dataset. Using humans as sensors is a method that aggregates personal insight leading to interpretation of place thereby making the map itself affective; "…it is about the acceptance of subjective as worthy and useful data. Considering both place and people is necessary for a full depiction of affective cartography" [5]. User-generated subjective urban olfactory information is subsequently transformed into a smellscape experience through the design of visuals, the design of smells, and combining these elements in an exhibition space.

Olfactory art practice in Smellmap: Amsterdam interprets the urban smellscape with 11 individual city smells created synthetically by a specialist fragrance company International Flavors & Fragrances (IFF). An IFF perfumer designed one combination fragrance for Amsterdam in 2013 using only the original identified 11 scents. Visualisation of the olfactory phenomena attributes a symbology to the original invisible dataset and manipulates the symbols, as if moved by the wind across the map, to propose potential smell combinations; this results in a visual interpretation of how smells may drift and mingle across the city.

Smellmap experiences aim to convey an altered sensory perspective for the audience, not as replica smellscapes, but instead to develop a call to action to physically re-experience the city in an altered manner, reorienting the senses so that temporarily the olfactory becomes active and visualisation takes a secondary role. By deliberately altering the weighting on the active modality of input variables used for "sensing and perceiving" [6], my intent is to alter the resulting processing (conceptualization and symbolisation), and to challenge preconceptions and our individual understanding of place.

Through olfaction a number of authors [4], [7], [8], [9] suggest we can gain new knowledge about human interaction with the environment, understand and mediate space and territory, and interpret what it means to us on an individual level. "Smellmapping can be used in conjunction with smellwalking as an effective means of investigating human perception of smells in an environment, both recording and communicating the smells that can be detected in an area, and in accessing the meaning that people attach to these." [10]

Smellmap: Amsterdam is a public art project that advocates for urban smellscape communication at a time when olfactory technologies, masking and advertising threaten to alter the smellscape and influence our behaviour without the general public having a vocabulary and critical voice to negotiate or affect its change.

Methodology

During a series of smellwalks, local participants identify distinct aromas emanating from the city environment. These are hand-recorded using smellnotes in a printed table (Fig. 2) under the headings of Smell (locate on map) – the map is on the reverse side of the paper, Description, Odour intensity (0 – 6) – Odour intensity scale/descriptors are specified in a separate table at the top of the page, Expected smell? Y/N, personal memories or associations and hedonic scale. I analyse this subjective data and, along with relevant fragments of conversations that arise during the walks, and select a set of smells to convey the distinctive smellscape of the city at that moment in time. I generate symbols for the smells, which are then manipulated by hand, interpreting the impact of the wind on the trajectory and displacement of the smells. Map marginal notes are added to narrate the city's smelly stories including non-visualised smell data.

Smellwalking with 44 local residents over 4 days in April 2013 resulted in the collection of 650 smell perceptions from which 11 urban smells were selected to represent Amsterdam; 1 distinctive background smell, 7 episodic [3] occurrences and 3 unexpected curiosities.

Colour was individually ascribed to each of the smells. Inspired by the city's visual landscape, recalled through photographs of the city's infrastructure, architectural detailing, flora and skies. Cool, pale blue for 'Canal' (background); beige-pink for 'Waffles in the market' (episodic); rich yellow for Warm, spicy (episodic); tulip-red for Flower explosion (episodic); warm brown for 'Woody, sweet, dry, paint, resinous' (episodic); lime green for 'Leafy fresh rain' (episodic); deep green-turquoise for Herring carts & wet fish (episodic); dark purple-brown for 'Coffee with friends' (episodic); pale beige for 'Chocolate powder (curiosity); orange for 'Laundry' (curiosity), sage green for 'Old books, attics, smokey, damp (curiosity). The smell descriptors used in the legend are taken verbatim from the smell walkers' original hand-written notes as a means to link the map back to the original sensor/perceivers.

To help identify the city and orient the viewer of the map I selected the canal structure as a familiar planimetric representation of Amsterdam. Depicted as a low value, low-key background, it acts as a locative base for the smell data on the map, however the map is not intended as a navigational aid.

Smells emanate from sources; their origins were indicatively plotted on the map, since urban smell sources are often transient. Concentric circles indicate the smell range based on a combination of perceived smell intensity and the physical size of the smell source. Smell ranges drift in the wind forming distorted contours. Movement is based on the prevailing north- and south-westerly winds encountered during the 4 days of the smellwalks.

Fabrication of the scents required a shared vocabulary and understanding of the specified smells. I described the scents as the perfumers at IFF assessed and either selected or generated synthetic fragrances from their vast databank of smell molecules. Occasionally the perfumers also used Headspace (aroma profiling technology) to identify specific components. A constant exchange of perceptions, meetings, smell samples and testing over a six-month period ensured matching of fragrance to smell concept. Additionally a perfumer worked independently to create a blended fragrance of the city using only the components of the 11 identified smells that he then named 'AmScentdam'.

Conclusions

This paper proposes a methodology for the research and design of how urban smellscapes may be recorded, represented and visualised for potential application by urban designers, architects, archaeologists, placemakers and arts events organisers. The resulting database of smells and visual/olfactory manifestation also acts as a form of sensory heritage, providing an experience of a city from the lived-in perspective in which the human relationship with environment is temporarily shifted from ocularcentric to olfactocentric. Smellmap: Amsterdam exhibition opened at Mediamatic in Amsterdam in April 2014 and is currently on private display at IFF Headquarters and also operates as a travelling exhibit.

As a lived-in experience, a constantly shifting set of odours translates into an experience of infinite possibility, a virtual dérive of a city through its smells. The final work, by its notable absences, poses the question as to whether a smellscape can ever be fully known, and simultaneously challenges the ontological security of the map. The suggested and propositional aspects of the map are intended to evoke a personal response to place. Smellmapping as an art form may both simplify and reveal complexity by using one modality in a traditional cartographic sense; attracting the audience through visualisation before generating complexity through the introduction of smells themselves as a secondary modality. This work is limited in its scope and, in its present form, is intended as a provocation and call to action for additional research into the potential for scent and visual stimuli in creative mapping practices as a tool for generating individual and shared interpretation of the urban smellscape.

References and Notes

1. J. Drobnick, "Toposmia: Art, Scent, and Interrogations of Spatiality," *Angelaki* **7** (2002) pp.31–47.

2. M. Merleau-Ponty, *The world of perception* (London, U.K.: Routledge, 2008)

3. J. D. Porteous, "Smellscape," *Progress in Physical Geography* 9 (1985) pp. 356–378.

4. C. Bushdid, M.O. Magnasco, L. B. Vosshall and A Keller, "Humans Can Discriminate More than 1 Trillion Olfactory Stimuli," *Science* **343** (March 2014) pp.1370–1372.

5. T. Itturioz & M. Wachowicz "An Artistic Perspective for Affective Cartography" in K. Kriz, W. Cartwright and L. Hurni (eds.). *Mapping Different Geographies, Lecture Notes in Geoinformation and Cartography* (Berlin, Germany: Springer, 2010).

6. Y-F Tuan, *Space and Place: the perspective of experience* (Minneapolis, U.S.A.: University of Minnesota Press, 1977.

7. Constance Classen, David Howes and Anthony Synnott. *Aroma: the cultural history of smell* (London, U.K.: Routledge, 1994).

8. Constance Classen, *Worlds of Sense: Exploring the Senses in History and Across Cultures* (London, U.K.: Routledge, 1993)

9. T.P. Lauriault and G. Lindgaard, "Scented Cybercartography: Exploring Possibilities", *Cartographica: The International Journal for Geographic Information and Geovisualization*, **41** (2006) pp. 73–92.

10. Victoria Henshaw, *Urban Smellscapes: Understanding and Designing City Smell Environments* (New York, USA: Routledge, 2013).

11. Previously published. K. McLean (Nov 2104), <http://visap.uic.edu/2014/program.html#papers>