



Digital Performative Mapping: For Society, Research, and Education

Research Through Design Case Study

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Abstract

Being a two-dimensional representation, a map is by default an abstract model of space. Decisions that concern the translation of space and its social phenomena into two-dimensions have a direct impact ‘on the ground’, while decisions regarding scale, legend, and frame determine what reality is portrayed, with which other realities are inevitably obscured. Cartography is thus an inherently political project (Crampton, 2004) and decisions that are embedded in this project are, by default, made by cartographers (or their commissioners).



Image courtesy workshop participant

Through the digitisation of maps, a shift in cartographic practice has been initiated that challenges cartographers’ role (or exclusive power) in how maps come into being. With the public appropriation of digital tools and digital mapping technologies, not only formally trained cartographers, but also citizens actively participate in the practice of mapping. This shift towards

mass availability, networked connectivity, and interactivity has led to a rise in the number of people who participate in mapping, consequently multiplying the number of maps that are now being contested. This cartographic turn —conceptualised in this



dissertation as the performative turn in cartography— has created an opportunity to engage people in public (space) issues in novel ways, leading to potentially more inclusive decision-making processes. Consequently, mapping technologies are increasingly being adopted as a means to seek public participation within urban planning or as a means to empower citizens in public (space) issues in other domains.

This PhD presents and examines the implications that digital mapping interfaces have conceptualising public space and the public domain as a physical-virtual hybrid. For example, the implications that a dependency on navigational systems have on our ability to experience where we are, and the degree to which we experience chance encounters raises questions about when and how the public domain comes into being, whose activities are included or excluded, and who is enabled to have a say in it.

The PhD is situated at the crossing of critical cartography and design research. While the mobile and performative turn in cartography has been presented extensively in literature on critical cartography, no accounts were found of the map app as digital spatial medium to re-examine spatial theories through embodied interaction. The mobility paradigm in digital map use and the continuous altering between the physical and the virtual that map apps afford —being ‘here’ and ‘there’ at the same time— has led to the following main research questions: In what ways can Digital Performative Mapping afford participation in public (space) issues and what kind of knowledge does embodied interaction with the map produce? Through presenting eight case studies and using a Research through Design approach, this bigger question is examined in three subordinate research questions:

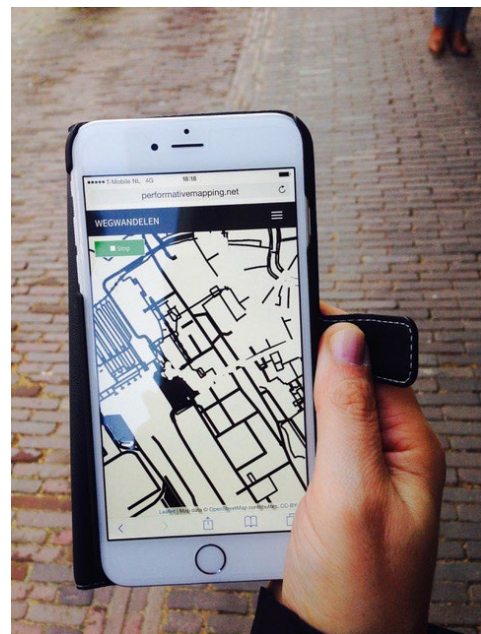


Image courtesy Naomi Bueno de Mesquita

RQ1) Which characteristics of map apps have the potential to engage citizens in public (space) issues?

RQ2) Which potentials and/or uses of map apps can be applied as design driven ethnographic research?

RQ3) What kind of learning experiences does Digital Performative Mapping generate?

Each case study includes one or more self-designed map app(s) and seeks to make a contribution to one of the following fields/domains: society (RQ1), research



(RQ2), education (RQ3). In serving society, the PhD positions Digital Performative Mapping as formative for participation in public (space) issues. In serving research, the PhD makes a methodological contribution —the examination of the affordances of map apps as a means to participatory ethnographic design research. In serving education, the PhD examines the potentials of map apps as a form of collective learning through embodied interaction with the map and with others via the map.

To enable a relevant comparison between the cases, the PhD makes use of an analytical framework. The framework consists of the map attributes ‘frame’, ‘legend’, ‘time’, and ‘navigation’ (that are used as analytical lenses), and the affordances ‘co-creating’, ‘inter-facing’, ‘playing’, and ‘performing’ (that are used as a reflection on the effects and affects that the different map apps produce). Depending on the area that a case study serves, the affordances will be different. Co-creating is presented as a practice of participatory sense-making (serving society), collective ethnography (serving research), and situated learning (serving education). Inter-facing is presented as a practice of aligning (serving society), juxtaposing (serving research), and de-familiarising (serving education). Playing is presented as a practice of critical thinking (serving education). Lastly, performing is presented as a practice of making public (serving society), enacting (serving research), and embodied learning (serving education).

Through exploring and defining the affordances of Digital Performative Mapping, the PhD proposes uses for map apps as a novel method of knowledge acquisition and knowledge transfer, with which both the analytical framework and the interpretive reflection on the case studies form part of the research methodology.

Summary of research through design activity

In the doctoral dissertation, eight case studies are presented to examine the affordances of Digital Performative Mapping for three domains: society, research, and education. Each case study involves a self-designed map app as research method. The apps are all designed for specific situations and participatory events. For example, for an exhibition in Amsterdam, the app Walk Away is designed with which people can erase the map of their city along their walking trajectories. The evolving map — projected in real time at the exhibition space for the duration of three months— points to the participatory quality of performative cartography emphasizing how in particular digital mapping in real-time can be used as a tool that enables collective co-authorship on spaces, agency and appropriation.

Within each app, the map attributes and affordances are examined for the way in which knowledge is acquired and transferred. The choice of set of attributes and



affordances to work with is dependent on the research question and the context of each case study. The aim of the map app is to enable to perform participatory research and to (better) examine the research questions.

In order to compare and reflect on the different case studies, a visual synthesis is presented throughout the dissertation. This synthesis demarcates the relation between the cases by using a cartographic logic where overlaps and juxtapositions between the case studies are shown. Each map attribute (the analytical lens), affordance (that what is brought about by the attribute), and field/purpose that the research serves, has its own graphic representation with which each case is materialised through an associative map. All of this is made legible by incorporating a bookmark that contains a legend.

The artistic output of the PhD lies both in the cases that are carried out with the apps, as well as in the way the results are presented in the book. The creation of the visual synthesis was furthermore a process that has continuously aided the reflection and the writing, with which also in the writing of the dissertation a Research through Design approach was applied.

Underpinning research, context and summary of methodology

Design research is performed while using a pre-theoretical framework. A distinction is made between:

- 1- Theories and methods to set up cases and learn from those cases to answer the research questions.
- 2- Theoretical debates in which some critical points are made to reinforce the main argument.

In order to examine the research questions, map apps are designed that are used with participants in workshop sessions with which a case-study methodology is applied. The artistic output of the PhD lies both in the cases that are carried out with the self-designed map apps, as well as in the way the results are presented in a book.

There are different features in the design of the book with which a reference is made to the classic ANWB road book. The heavy ANWB book contains detailed road maps of the Netherlands and Europe that every person in the Netherlands used to carry in his/her car. Its size is adapted to fit in the compartment in front of the passenger's side. With the digitisation of maps and the use of mobile devices, this book has become obsolete. By choosing the same size and using similar references in the design, a tribute is paid to the old craft of map-making while presenting the



opportunities that digital mapping has presented. Similar to the road book, in the book design of the dissertation, actions have to be performed by the reader to access specific layers of information, such as extending parts of the book, folding out pages, overlaying an item over another item, etc. Similar to the map apps, the activation of the reader/user is a prerequisite to engage with knowledge embedded in the map, a logic that is extended to the design of the book.

The thesis outline and levels of reflection that are introduced in the book form part of the research methodology. The book comprises three levels of reflection (each level containing a different page-width). The first level is descriptive; here the context is described under which each case study was performed. The second level is analytical. Here an analytical framework is used supported by four key attributes of map-making - frame, legend, time, and navigation- that are used as analytical lenses. These lenses structure the reflection on the cases. Additionally, four affordances of digital mapping are presented, being; Inter-facing, playing, co-creating, and performing. In the third level of reflection, the findings are interpreted in light of the three main research questions that are linked to the domains society, research, and education. The cases are furthermore compared to one another through designing a visual synthesis. In this synthesis a cartographic logic is applied where overlaps and juxtapositions between the cases are shown for their contribution to knowledge acquisition and knowledge transfer.

References produced by researcher from/during doctoral research

Scientific Journal

Bueno de Mesquita, N., Cila, N., Groen, M., & Meys, W. (2018). Socio-technical Systems for Citizen Empowerment: How to Mediate Between Different Expectations and Levels of Participation in the Design of Civic Apps. *International Journal of Electronic Governance*, 10(2), 172-195. <https://doi.org/10.1504/IJEG.2018.093835>

Book

Hamers, D. Bueno de Mesquita, N. Vaneycken, A., & Schoffelen, J. (Eds.). (2017). *Trading Places: Practices of Public Participation in Art and Design Research*. Barcelona, Spain: dpr-Barcelona

Book Chapters

Golchehr, S. & Bueno de Mesquita, N. (2018). Data-driven Design for Civic Participation. In O. Devisch, L. Huybrechts & R. De Ridder (Eds.), *Participatory Design Theory* (pp. 56-70). Oxon: Routledge.



Bueno de Mesquita, N. (2017). Performative Mapping as a Case of Inter-facing Between Citizens and Undocumented Migrants. In D. Hamers, N. Bueno de Mesquita, A. Vaneycken, & J. Schoffelen (Eds.), *Trading Places: Practices of Public Participation in Art and Design Research* (pp. 45-57). Barcelona, Spain: dpr-Barcelona.

Conference Paper

Bueno de Mesquita, N. & Hamers, D. (2019, March). Mapping Invisibility, 3rd Biennial Research Through Design Conference, 423-437. <https://doi.org/10.6084/m9.figshare.4747015.v1>

Exhibitions

Bueno de Mesquita, N. (2020, October 4 - November 29) Walk Away [Map App and Map Presentation] Mind Your Step, Zone2Source, Amsterdam, The Netherlands. <https://zone2source.net/nl/mind-your-step/> and <http://performativemapping.com/walk-away-in-exhibition-mind-your-step/>

Mind Your Step was a group exhibition about the art of walking. For the exhibition, Walk Away was exhibited for the duration of two months at gallery Zone2Source in Amstelpark in Amsterdam. The exhibition was supported by Gemeente Amsterdam, Prins Bernard Cultuurfonds, Mondriaanfonds, AFK and Stroom. Walk Away was published in various Dutch newspapers, amongst others: <https://www.parool.nl/amsterdam/met-je-telefoon-nieuwe-wegen-in-de-stad-ontdekken~bc468f2f/>

Alice Smits (curator Zone2Source) and I were furthermore invited to the Nieuw Amsterdam program to briefly talk about Mind Your Step and the Walk Away project. Our interview can be watched on the Pakhuis de Zwijger website: <https://dezwijger.nl/programma/nieuw-amsterdam-3>

Bueno de Mesquita, N. & Merx, S. (2015, June 24). Between Realities: Collective Mapping of Public Space [Map Presentation]. Prague Quadrennial of Performance Design and Space, Clam-Gallas Palace, Prague, Czech Republic.

Bueno de Mesquita, N. (2015, January 23). Mapping Invisibility [Map Presentation]. State of Shelter: Can Creativity Help Refugees? Frascati theatre Amsterdam, The Netherlands. <https://www.whatdesigncando.com/stories/state-shelter-can-creativity-help-refugees/>



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