In today's cities, our everyday lives are increasingly shaped by digital media technologies. The Mobile City is a research group that investigates this new urban condition and its implications for urban design.

How to design better cities with urban interventions and computer code?

Written by **Martijn de Waal**.

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Last thursday I attended the first edition of the **Cognitive Cities** Salon in Amsterdam. Here are some notes on two of the lectures. What I found interesting was that both were addressing urban design not as primarily an aesthetic discipline but as a social and cultural one. Caro van Dijk discussed the design of urban and virtual objects around which urban publics can form and thus bring about an urban public sphere. Edwin Gardner looked at the use of computer algorithms to make urban design more adaptive to the needs of citizens.

Making public space with urban objects

Caro van Dijk is one of the co-organizers (together with **Archis** and **Vurb**) of an **upcoming workshop** on the internet of things and architecture. She introduced the design-approach that they would like to use as a point of departure for the workshop (presumably to take place during **picnic 2011**, here in Amsterdam in september.

This approach is based upon **Yiri Engestroms** notion that:

> people don't just connect to each other,
>
> they connect through a shared object

Whereas Engestroms is concerned with the role of social objects that can be shared through social networks, Van Dijk looked back into the history of architecture and found inspiration in Aldo van Eyck's playgrounds. After the second world war this Dutch Archtiect designed **more than 700 playgrounds** for the city of Amsterdam which transformed numerous open and often derelict city spaces. These playground consisted of bare, geometrcial shapes functioning as sandpits and climbing frames.

Martijn de Waal (1972) is a writer, researcher and strategist, working in the field of digital media and (urban) culture. He has worked with and for various clients and organizations such as The Netherlands Architecture Institute, Open Society Foundation, The Architectural League of New York, Lift@Home, Kitchen Budapest, The Mondriaan Foundation and Dutch Public Broadcasting. He is part of the **New Media, Public Sphere and Urban Culture** research group at the Faculty of Philosophy at the University of Groningen, and connected to the department of mediastudies at the University of Amsterdam. In 2009 he was a visiting scholar at MIT's **Center for Future Civic Media**.
http://www.martijndewaal.nl

These interventions did two important things, Van Dijk Explained. First, because of the use-value of those objects for kids, they turned underused spaces into public spaces, where people started to hang-out, take notice of each other, interact, meet up. In other words: these objects brought about an urban public sphere. Perhaps as important is that they were able to do this because of the bare structure of these objects. The use of these objects wasn't prescripted, but afforded an open sense of play. Kids could use their own imagination and use the tools as props in their own stories or events. (A similar **claim for the design of open ended play** was made earlier that evening by Kars Alfrink of **Hubbub**, see also **here**)

Van Dijk compared this approach with **Primal Source**, a project by **Usman Haque**, that was carried out at the Glow-festival in Santa Monica in 2008. This installation consisted out of colorful projections on a waterscreen. The shapes, colors, rhythms and intenstiy of these pojections were determined by software analyses of the reactions of the public picked up by 8 microphones. This provoked the audience to start singing, yelling, and clapping, sometimes individually, sometimes in concert. Thus, a public that shared a communal experience emerged out of the collective, interactive use of the art-installation.

Primal Source (video documentation) from **haque d+r** on **Vimeo**.

Can we now make use of new media technologies to design urban interventions that do something similar? That work as virtual/physical/hybrid objects around which (temporarily) urban publics can form, thus calling an urban public sphere into being? That is indeed an interesting starting point for a workshop.

The Algorithmic City – a techno-utopian scenario

A second presentation that I wanted to highlight here was held by **Edwin Gardner** who presented his ongoing research work on the algorithmic city.

Gardner asks the question what happens to urban planning when we add algorithms to the urban planning process? How can we use algorithms to make planning and urban design a more generative, adaptive process, that works in the interest of citizens rather than that of project developers or investors?

So far algorhithms have shown up in 'parametric design' where all kinds of parameters can be tweeked that the computer will then turn into a design for a building or even a complete city. Gardner is not so much interested in this approach. The problem is that there is no relation between the paramaters, the shapes generated and the society that is going to make use of these shapes. Social or ecnomic data are hardly used as parameters and the result is 'a fetishism of easthetics', at best beautiful to look at, but completely meaningless.

Gardner instead takes inspiration from **Christophers Alexander**'s **A Pattern Lanugage**, a book that was based upon:

> … the idea that people should design for themselves their own houses, streets and communities. This idea… comes simply from the observation that most of the wonderful places of the world were not made by architects but by the people"

A Pattern Language therefor gave an overview of various planning 'problems' and provided patterns that could be used as a solution, it was a catalogue of planning tools, that could be used to structure the city. These patterns or design-objects could be used to draw-up a city,

the indiviudal elements combined into a 'language'. Later, Alexander **would say** the pattern language had three essential features:

> First, it has a moral component. Second, it has the aim of creating coherence, morphological coherence in the things which are made with it. And third, it is generative: it allows people to create coherence, morally sound objects, and encourages and enables this process because of its emphasis on the coherence of the created whole.

Although A pattern language was first aimed at both architects as well as ordinary people who wanted to prove upon their enviromnent, in the 1990s Alexander turned to computer scientists. Could they design software algorithms that would help generate cities based on patterns that were livable and adjusted to a human scale?

Gardner picks up this question and looks at three levels in which algorithms could play a role:

1. Building Code
Building codes (code as in law) can be understood as the program that currently generates the city. Its restrictions and prescriptions determine the parameters that planners and architects must design within. Now, Gardner asks: what if we turn building code as in law into a building code as in computer software: 'How can we turn building code around from a bureaucratic obstacle, to an open standards object-oriented programing platform with an ecosystem of API's and apps empowering civlilans and city authorities, both amateurs and professionals?' Can we use models of the city such that are currently used in BIM-software as living models, in which all sorts of sensor-assembled data about the city is constantly fed back into the model, and that can be used to develop the city further?

2. Algorithmic Masterplanning
Building upon that, can such a system be used to plan a city more organically? Now master-planning is mostly a 'shock-and-awe'-discipline, especially in countries like China where complete cities are drawn from scratch. But what if we can make use of a living city model that anyone could add upon, that would enable incremental urban growth initiated by smaller parties?

3. Algorithmic zoning
Can we design systems that can temporarily adjust the use of existing urban spaces to human needs, rather than to the logic of investors? For instance, could we think of an algorithm that detects long-term vacancy of office buildings and comes up with alternative uses?

I found all three provocative ideas to think about, even though, as Gardner himself admitted in the subtitle of his talk, they are still very much techno-utopian.

At the same time, a presentation of **James Burke** showed that such a future might be not that far off. He is currently working on an app that would make use of social networking to address the problem of empty office space and the resuse of such urban places. Can a system be designed that allows citizens to temporarily make use of such places? The discussion learned that perhaps the sofware code is the easiest part of this problem (bringing people, ideas and empty spaces together). The harder part will be dealing with legal codes such as contractual regulations, and zoning uses that are related to tax-regimes that may prevent owners from participating in such a system.

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