

Self-organisation for the sentient city

Virginia Dignum

In our modern society, more and more data is becoming available through technological advances like sensor technology, social media and smartphones. As information needs arise, new transient organizations should be formed across existing organisations with the goal of answering the respective information needs. This requires that participating actors (sensors, people, or autonomous agents) coordinate their actions and cooperate towards the goal. At the same time, participants belong to existing organisations, have their own requirements and goals, and are bound by specific (institutional) constraints. In this talk, I will discuss modelling techniques for describing such transient organizations, together with techniques for creating them on-the-fly. The main challenge is to determine the rules and structure of the new organization while acknowledging and complying to the norms and expectations of the existing organisations to whom participants belong.

Anton Eliens

Based on a recently given course serious gaming at VU/UvA, we will explore the potential (societal) impact of serious games. The course included project utopia, which required students to reflect on norms and values, and how serious games could help to achieve such ideals. In addition, a game design workshop was held to address the problem of civic order(s), with a focus on littering & loitering, using gamification to cope with these issues. With examples, and insights from research in digital ground(s) and critical play, we will look at how serious games may be regarded as another form of social technology, and how action(s) in (virtual) game space may affect (real) behavior, ethic(s), moral(s), and (perhaps most importantly) induce creative play!

Why space matters for collaborative innovation and knowledge creation

Thomas Fundneider & Markus F. Peschl

As opposed to managing or controlling innovation processes, this talk proposes the notion of enabling as a more suitable approach to innovation: innovation cannot be considered a mechanistic process; rather, it can only be supported by enabling processes facilitating the creation of new knowledge. As a consequence, the concept of Enabling Spaces is introduced. It

is a space that is designed in such a way that it enables and facilitates processes of collaborative knowledge creation and innovation. The concept of enabling is the main design principle that underpins Enabling Spaces.

In that context a rather broad notion of space is applied: It goes far beyond architectural/physical space by integrating social, cognitive, emotional, organizational, and epistemological dimensions in an interdisciplinary manner. Both the theoretical background (e.g., extended cognition, innovation theory, epistemological issues, etc.) and the methodological approach and design process will be presented. Furthermore, I will discuss several cases for Enabling Spaces in various fields of innovation and knowledge creation (e.g., university, bank, a creative settlement)

Keywords: cognition, collaboration, design, Enabling Space, extended cognition, innovation, knowledge creation, space.

The largest Knowledge-base ever created: Linked Open Data & The Semantic Web, an introduction from 30.000ft

Frank van Harmelen

With over 25 billion(!) formalised statements dealing with topics as far apart as popular music, scientific literature, medical information, and facts from geography, art, architecture, history, politics, etc, etc, the Semantic Web (currently known as "Linked Open Data") is by far the largest collection of machine-accessible formal knowledge that has ever existed.

I'll describe the design principles and the current status of this rapidly growing distributed knowledge-base, before asking the question if this knowledge-based can be exploited for fostering creativity in the virtual, online world.

Social Media and Virtual Spaces

Bernardo A. Huberman

The massive amounts of data that social media generates has facilitated the study of online human behavior on a scale unimaginable a few years ago. Social media not only facilitates interactions among people separated by large distances but also creates virtual communities that share some similarities with those built around real spaces. But there are also strong

differences between the way people interact in virtual and real spaces, differences which are just starting to be teased out.

I will describe two types of results that illustrate the similarities and differences of social interactions when taking place in virtual versus real spaces. The first looks at the predictability of interactions among people while the second follows the spread of information within groups of people.

Unwinding spatial and transpatial social networks

Vassilis Kostakos

This talk will provide an overview of our work on capturing social networks both in real life and online, which we term as spatial and transpatial networks respectively. This talk will provide an overview of a number of projects that captured social network using proximity technologies like WiFi and Bluetooth, but also using online tools such as Facebook and Twitter. We draw on our experience to identify similarities and differences between these in terms of structure and diffusion. We also outline how social network affect our online sharing behavior, and conclude by providing a future outlook for the potential applications enabled by city-scale sensing of social networks and mobility.

Information, data, knowledge and the city

Juval Portugali

In the Oxford English Dictionary the noun Information is defined as “ facts provided or learned about something or someone”. This definition corresponds to our intuitive understanding and usage of information as meaningful data, that is to say, knowledge. And yet, information theory as defined by Shannon refers to information with meaning exorcise; its universal applicability rests on the proof that information can be applied irrespective of meaning. The “semantic aspects of communication”, writes Shannon (1948, 1), “are irrelevant ...”. The latter property of Shannonian information has led to attempts to develop notions of semantic information, that is, information with meaning – one such attempt was made by Haken (1988/2000) in his Information and Self-Organization. Approaching the issue from the perspective of synergetics (Haken’s theory of complex self-organizing systems) he defined semantic information as ‘a message that carries meaning in the sense that it causes a specific effect on a receiver modeled as a dynamical system that has a number of attractor states.’ Haken and Portugali (2003) have studied the cognitive dimensions of Shannon and semantic information in the context of cities showing, first, that different urban elements convey different quantities of Shannonian information. Second, that while Shannonian information is applicable to closed

systems, semantic information is a property of open and thus complex systems. Third, that Shannonian and semantic information are interrelated. In this talk I'll further explore the connections between Shannonian and semantic information by studying their relations to data and knowledge.

Architectural Space as a Network – Physical and Virtual Communities

Kerstin Sailer

This talk explores the role of architectural space as a network that structures patterns of co-presence of occupants. It is suggested that one outcome of the configuration of space (in buildings or cities) is to structure a field of potential co-presence between people – a 'virtual community' - which gives rise to real encounter networks as people move through and inhabit it. Through the structure of physical space and the associated field of potential co-presence social groupings are either conserved, or new groupings are generated. Examples are given to illustrate this.

It is furthermore suggested that society coheres by means of both spatial and transpatial solidarities, which means individuals will participate in multiple distinct networks at the same time. Spatial networks are generated through face-to-face encounter in architectural space, and are dependent on spatial relational structures, while transpatial ties result from shared values, ethos and identities.

As technologies become more and more ubiquitous, they increasingly structure people's patterns of interaction and seemingly move them away from physical space and into a new realm of online communities. This raises the question of whether physical space still plays the role it used to play and how we can conceptualise multiple overlapping network affiliations in both physical and virtual spaces. Therefore the affordances of technology in offering means of communication and encounter across time and space are discussed and put into perspective of the real life face-to-face networks of people realised in physical space.

Innovation and Creativity: Inertia & routines, booby traps & boomerangs

Frido Smulders

The CitySDK project

Job Spierings and Tom Demeyer

The project Smart CitySDK aims to define services that can help open up data in the fields of Participation, Mobility and Tourism in various cities in Europe. Within this project, Waag Society is responsible for the domain Mobility.

In this talk, we will discuss how Waag Society aims to tackle in CitySDK the mismatch between the many European mobility datasets on the one hand and the app development community on the other. We will show some mockups of the pilot mobility app which we are developing. A pilot study will be conducted in Amsterdam. Then, the applicability of the services will be tested in Helsinki, Manchester, Barcelona, Rome, Istanbul and Lamia.

Additional information on the project can be found here:

<http://www.citysdk.eu>

<http://www.citysdk.eu/mobility/>

<http://waag.org/en/project/smart-citysdk>

New ways of learning for learning the new

Sibrenne Wagenaar

Are you already learning the new? I truly believe it is crucial for organisations to keep up to date and up to speed with the flow of new ideas and resources that are constantly being created around us. And this requires new ways of learning. Social media might be helpful, but even more important is the way we use those ideas and information we come across. How do you aggregate, remix, repurpose and feed forward? I would like to share my thoughts on this with you, and look at the way we can facilitate this learning the new, in the online as well as in the physical space.