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REMEMBRANCE ARCHIVES

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Abstract

The article proposes a reflection on the design role and a speculative project about the topic of temporality in the digital city. The notion of socio-technical system (Whitworth 2009) is used to show how in a society characterized by high technological density the city model could approach the one of a factory (Armando & Durbiano 2019). In a socio-technical system the capillarity of the interactions between men and machines is central in beating the rhythm of the subjects' behaviors acting its space. Furthermore in the contemporary landscape the analytics systems producing predictions introduce an additional temporal layer (Hansen 2015) used as a filter to read and design these behaviors (Pentland 2019) and the city planning. Artificial intelligences, synthesizing the data harvested, produce precognition simulating behaviors in the digital in order to anticipate them in the analogical. It is claimed that within these temporal loops only an incremental optimization is possible and that to design exclusively through this filter could cause a folding of time that would lead the city to live in a temporal bubble, whereas the city lives on many different temporal lines contributing to the imagination and to the collective memory (Gregotti 1966). Therefore design has to address this challenge bringing the question of the memory at the project's center (Zannoni 2018). A speculative project called Remembrance Archives is proposed. Remembrance Archives aims to hack the temporal bubble by the injection of data drawn from the past of the city history that will alter the regular output of the artificial intelligences predictive models in unexpected ways, practicing an actual work of remembrance through which people will interact with the city memories as a source of new meanings and imaginary.

Keywords

Artificial Intelligence, Speculative Design, Memory

«Look carefully nonetheless, as this might appear at first glance like a destructive critique of technology in the city. It is not. Technology is culture; it is not something separate; it is no longer "I.T."; we cannot choose to have it or not. It just is, like air... So the goal is entirely constructive, and to shift the debate in a more meaningful direction, oriented towards the raison d'etre of our cities: citizens, and the way that they can create urban culture with technology» (Hill 2013)

1. Introduction

The paper suggests a reflection about design in relation to the introduction of digital technologies on the urban scale through a counter-representation of urbanization process as is ideologized (Wachsmuth 2014) in the smart city model. The counter-representation will exaggerate intentionally the relationship between the temporality seen through this model and the behaviors of people who cross the city space.

According to Rob Kitchin (2014), in the smart city model the I.T. infrastructure is the main managing tool of a city where a technocratic vision is promoted: any aspect is measurable and any issue, even social complexity, can be solved by computation. Therefore, it's proposed the analogy between the smart city and a factory made of technology and social features, that is a socio-technical system. Then is formulated a hypothesis linked to a risk scenario[1]: that planning the urban space, exclusively relying on the smart city model, can lead the city and its inhabitants to live in a time bubble, the result of which would be to deplete the resources available for innovative design. It will then be claimed, proposing a speculative project, that design has to care about memory as a way to allow a richer interchange between the city and possible behaviors[2] within its environment.

[1] See also the project Standard-Deviation (http://standard-deviation.eu/#home)

[2] The textual apparatus is presented with a graphic proposal inspired by the optical poems of Man Ray and the artistic language of the "cancellation" of Emilio Isgrò, which illustrates the meaning of what is written. If the automated process of information synthesis acts as a filter, the risk is that projects will be generated based mainly on the optimization of a partial selection of what it is. We would thus be allowed to access only certain portions of geography of meanings already predisposed

Fig. 1

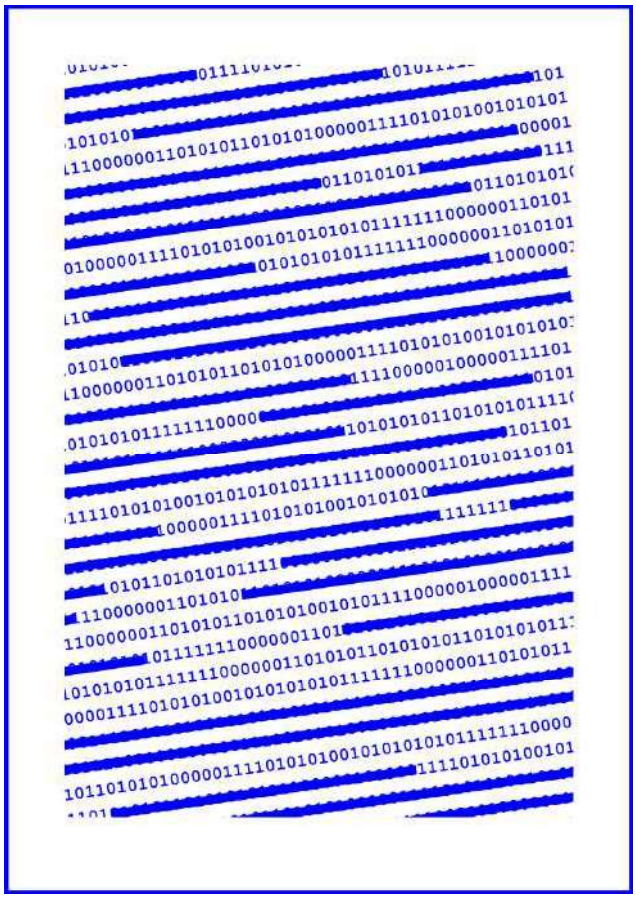

Fig. 2

2. City and socio-technical system

The term socio-technical system was proposed in a research carried out by the Tavistock Institute in the 1950s (Whitworth 2009) to designate those organizations and systems of production, in that case a coal mine, where the close interconnection between social and technical aspects, both material and administrative, turns out to be the key factor to set the performance of the overall system[3]. This meaning, here charged with a negative connotation[4], serves the purpose to emphasize that those social systems where IT components are spread and omnipresent are optimized by these same components that allow the fragmentation and automation of functional and social dynamics. With the current technology growth, both in terms of quantity - sensors and smartphones are everywhere - and quality - nowadays software mediates and performs cognitive processes as well mechanical ones – it is possible to suggest looking at the urban environment like a socio-technical system.

A socio-technical system - as is meant here - presents two relevant aspects: the first is that it can be considered as a closed environment, isolated from the external events, like the one of a factory[5], even though more complex. The second is that the rhythm

to accept only a specific and predetermined number of behaviors. We pass from cancellation of the textual apparatus (Fig. 1) to a data one (Fig. 2) to that of the urban topography (Fig. 3).

[3] This definition has evolved in the so-called Science and Technology Studies (STS) (Callon 1987) where it indicates how society and technology adapt to and change each other.

[4] Negativity serves the purpose of this article. It is not claimed that the study and the project on the socio-technical system has not great importance. Instead, we claim that its effectiveness and its positive connotation are linked to a specifical context.

[5] In the article wrote by Kitchin (2014) are included two definitions of smart city: one is given herein; the other one refers to a development model based on knowledge economy, creativity and innovation. We could assume that the attempt to optimize these factors in a system of production leads to a factory city seen as a factory of creativity.

of events taking place inside it, including the behavior of people crossing its space, is largely

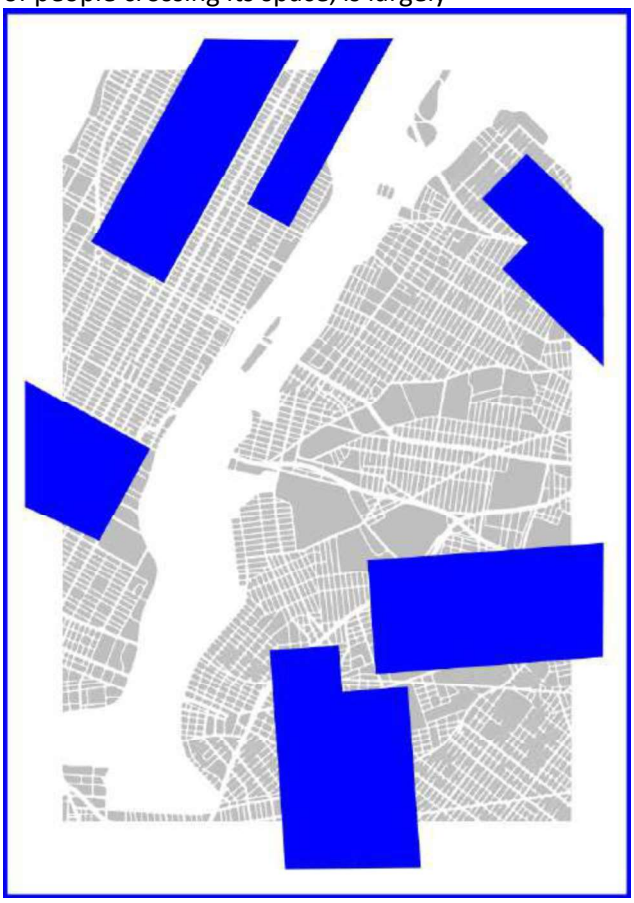

Fig. 3

marked by man-technology interaction. As Ulrich Krohs points out «the structure of society will be influenced by the design of the machines used by its members and by the design of the socio-technical systems that are embedded in it». (2008, pag. 235)

3. The consequences of the city as a socio-technical system

The result of the first aspect, that is, being a closed and strictly constrained space, is that in this kind of city time goes by in an unchanging environment: according to Armando and Durbiano (2019), this feature is at the heart of a planning which, in order to solve the matter of adaptation to the same environment, aims to the optimization of the existing and not to any potential change. In the case of a city this environment must then be artificially preserved unchanged, since the city is affected by contingency and transformations through the passage of time (Cornoldi 2005).

To understand the outcome of the second aspect, that is, how the interaction between man and technology sets the rhythm and behavior of people, it is needed to introduce the IT infrastructure at the heart of the smart city, that is data collection and analysis systems. Here, different kinds of sensors and other data collectors such as smartphones, become a measuring tool to control and learn about urban space, for example, «location-aware sensors in urban transportation networks are generating a wide variety of data which has spatio-temporal network semantics. Examples include temporally detailed roadmaps, GPS tracks, traffic signal timings, and vehicle measurements» (Venkata & Shashi 2017, p.127), which are then used to plan the urban space.

4. Artificial Intelligence and temporality

Artificial intelligence, as a tool of automated analysis and synthesis of the data collected from the sensors described above, is the key factor of temporality: its main feature is to make predictions to plan decisions and lead to behavioral choices likely to be the most suitable for specific goals (Pentland 2019). Therefore, in some way, it aims at manipulating time for planning purposes. Artificial intelligence learning technologies are based on the possibility for the machine to be able to identify patterns within data sets. This ability is used as a prediction tool; this means that when the machine identifies some pattern between data, it is then able to predict the chance that certain events will occur under the same conditions – that is patterns - they had already occurred in the past (Mackenzie 2015). One of these learning models, widely used for example by the recommendation systems for browsing in the web is that of *filtering* (SongJie 2010): starting from the profile of a user and analyzing a number of indicators such as his choices, location and preferences, it will direct the user to a new web content, which other users with a similar profile have already enjoyed. Filtering is, therefore, a prediction system - it is likely that this user will find this content interesting – able to lead to some behaviors and influence farther choices. The recommendations proposed, however, will inevitably converge towards a closed set of contents: after having ordered some architecture books on Amazon we will begin to see among the recommended books only other architecture texts and so on. In this way, the filtering operates a selection that is at the same time a block

to novel contents and serendipitous discovery, to the exposure to opinions different from one's own and therefore to the dialectical possibility of any transformation.

5. A behavioral geography

Now let's imagine this same mechanism on an urban scale. To do this it is directly reported what Foursquare, one of the most active companies in the field of location-based data, says about itself and its objectives. The following extracts have been taken from an article published on the Medium.com portal on March 1st, 2017 by Steven Rosenbaltt (https://medium.com/foursquare-direct/unlocking-the-power-of-place-for-marketers-and-developers-introducing-pilgrim-sdk-by-foursquare-ee879c502088) to promote a new feature for sharing with third-party companies the data collected by the proprietary technology of Foursquare – Pilgrim - which turns the smartphone where the Foursquare application is installed into location-based tools. «Pilgrim recognizes when a person has stepped into a pizza joint, so Foursquare City Guide can send a tip about the best pie to order — before they've even picked up a menu». It is recognizable here the reference to the power of the application to influence and manipulate time, it is clearly stated that they will know when and before: «Foursquare also uses this technology to understand societal shifts and trends on an anonymized and aggregate level. We know when Americans start craving Filipino food and how store closures impact Americans' shopping habits» and that it will act at the right time «…so that brands and marketers will be armed with the ability to send messages to their users at the right time and right place… This all improves the customer journey, too, as consumers continue to expect smarter and more relevant brand experiences, always». It is also worth reading the way these companies ask their potential customers to imagine the scenario of the city in the near future, basically something that can be broken down into commodifiable segments of space and time: «Imagine these scenarios: a traveler walks out of a hotel lobby, ready to explore a new city, so the hotel's app pings them with suggestions of places they'll love nearby (the closest yoga studio for the yogi, the local brewery for the beer-lover). A coffee chain can alert nearby loyal customers about a free latte promotion; a department store might ping its app users when they enter the store about items on-trend and on-sale; a mobile game might change based on where you play it; or a photo app can remind you to capture a photo when you're at a popular scenic view at sunset. This is just the beginning of what's possible when the magic of Foursquare location intelligence technology is built into other great consumer apps».

Whoever enjoys this service contributes to a behavioral geography arising from data, not only outlined by Foursquare but also by Booking, Facebook, TripAdvisor and so on, where a place that visitors have seen many times and have appreciated is recommended - with a ranking of priority - on the smartphone, nowadays the main orientation tool in the urban environment. In the same way, other private and public I.T. systems aim at optimizing various urban subsystems such as traffic, electricity and pollution management, but «smart city technologies do not just mean more efficient ways of delivering municipal services. Rather, these digital tools and the new resources of data they have generated the power to profoundly alter the way cities look and function» (Lorinc 2018, page 8). Let's see how.

People are increasingly tested by the socio-technical system they interact with and end up becoming a source of information for those devices that will make use of this information to shape behaviors in such an ongoing feedback loop. According to Flusser (1985/2011) every apparatus has a program that affects the behavior of the society as if it were part of a feedback loop mechanism; in the case of the permanent monitoring system that surrounds the city, this feedback loop has to do with temporality «as discussed earlier, the velocity of Big Data greatly exceeds that of traditional survey research. As such it theoretically provides greater opportunities for the real time monitoring of social, economic and environmental processes» (Johnson & Smith 2017, page 117).

6. The filter bubble

The set of sensors open up a dimension of experience, on a temporal and spatial scale, inaccessible to human sensitivity (Hansen 2015), which is used for the management and manipulation of the present by means of predictions, a logic close to the filtering algorithms described above, and which aims at optimizing the existing environment the way it has been measured and recorded via data.

However, the filtering algorithms have been severely criticized (Rouvroy 2013): if behaviors are anticipated by the suggestions received, which are based on past habits and their correlation to similar habits, people will interact in an environment that will become more and more tailored to them, but this customization will lead to a subsequent profiling that will only further bend the possibilities in the same direction of an adaptive optimization. Recalling what was previously written on the factory, this is indefinitely possible only in a closed space, away from the contingent and the unexpected. Ideally, perfect optimization would be possible only in a condition in which time has stopped, that is where the real-time measurement of events coincides with their anticipation, where the environment is forever unchanged and makes a complete forecast possible and accurate. In this representation, it is therefore argued that by temporality manipulation this apparatus aims to isolation and environmental immobility.

After all, the loop described above is a form of this condition; indeed, it has been defined *Filter Bubble* (Pariser 2012), a filter that only ends up seeping through what someone already knows while taking out what is different or unexpected, that is any kind change whatsoever. What would it mean for the city to lay in the bubble? Also, what would it mean for the urban environment to be planned only through this filter?

7. Desire, memory and imagination

From the perspective purely related to design[6], that underpins this article, the urban environment has been as the result of a «collective process, slow and detectable in a long term» comparable to the language (Rossi 1968, p.11, own trans.). Therefore, a complex and stratified aggregation of historical deposits characterized by an endlessly change, abandon and reconstruction, an overlapping of temporal waves with different frequencies that represent the collective memory, which plays together with imagination a key role in the project of the city (Gregotti 1966). This relationship between memory and imagination has to be at the heart of projects aiming at changing the space where people live, which is unsafe in the case scenario supposed above.

If environmental transformations are regulated by the filter bubble what does the imagination become? Can optimization be a fertile source of imagination? Even in the case of the now famous Deep Dream software, the machine only reproduces images generated reiterating the same pattern recognition loop rather than creating something new (Mordvinstev & al. 2015). According to Gregotti, the creative aspect starts with perception and memory to achieve something that does not yet exist: «this practice is the search for a new order, a new possibility, a new experience» (1966, p. 27, own trans.).

Memory, as repository of time, becomes imagination through a process of re-elaboration, contextualization and new interpretation of the mnestic material: when we remember we modify our memories, superimposing new data and new meanings, which thus become the substratum of our identity as a continuous and endless project of ourselves. Imagination that memory nourishes looks like that sense of possibility of which Robert Musil wrote: «Whoever has it does not say, for instance: Here this or that has happened, will happen, must happen; but he invents: Here this or that might, could, or ought to happen. If he is told that something is the way it is, he will think: Well, it could probably just as well be otherwise. So, the sense of possibility could be defined outright as the ability to conceive of everything there might be just as well, and to attach no more importance to what is than to what is not» (1930/1996, pages 13-14, own trans.).

Therein also lies the difference between desire as a dispositif (Agamben 2006) - we are made to desire something, as it happens with marketing tips we receive through filtering - or desire as an innovative force that breaks things the way they are. Gaston

[6] A key point we have not examined here is that linked to the evolution of contemporary power practices. As Salvatore Iaconesi argues «These elements – bubbles, algorithmic governance of information and information spectacularization -, thus, may bear the possibility that individuals progressively inhabit a controlled infosphere, in which a limited number of subject is able to determine what is accessible, usable and, most important of all, knowable. This power asymmetry also implies the fact that users can systematically be unknowingly exposed to experiments intended to influence their sphere of perception to drive them to adopt certain behaviors over other ones» (2017, p. 4). See also the projects on *data commons* like decodeproject https://decodeproject.eu/ that deal with ownership and data availability, control and privacy.

Bachelard in an essay on the relationship between space and imagination (1958) deals with the so-called *desire lines* (*les chemins du désir*) or desire path, the footprints on the grass witnessing the passage of people who choose to cross a space in an alternative way with respect to the planned route: a challenge for the established order, the expression of a yearning, the trace of a sense of possibility rather than a sense of reality. These signs are comparable to a change in behavior, which over time becomes stratified in the urban space, an urban space turning into the remembrance of the desires that have contributed to shaping it, remembrances that are here interpreted as the possibilities of different futures.

The representation that has been presented is intentionally partial: its purpose is to encourage reflection. Society cannot be fully a socio-technical system (Krohs 2008), and the purpose of data analysis algorithms is not only filtering nor their effect on a systemic scale is predictable, but how Krohs wrote "designing [...] an artifact co-designs society, but does not necessarily end up with the intended result" (241). Therefore, it has been only imagined a risk scenario where the outcome leads to a negative utopia to push for different approaches and stimulate designers' imagination. This proposal does not keep out technology since it is unrealistic to think that technology can be abandoned or break the business and development models that it promotes.

8. Remembrance Archives

Instead, designers ought to consider this aspect, bringing the memory to the heart of the project (Zannoni 2018) precisely to use it in an alternative sense to that of mere efficiency. One of these alternatives, which we investigate from a speculative point of view (Dunne & Raby 2013), is *Remembrance Archive*. Partly inspired by the Time Machine project (Kaplan 2015), based on an impressive digitalization of the city's historical heritage, the idea at the heart of Remembrance Archive is to make the past an agent that hack the filter bubble of eternal present described, through data obtained from different timelines representing the history of the city, as if they were memories that the city itself recalls and that break the real-time loop. This brings with it the possibility that from these deep timelines emerges that sense of possibility of which Musil speaks as an alternative to reality. Not *a* past, but *the many* different pasts stratified in the urban space become a resource to shape the future[7]. Managing today's mobility mixing the real-time data with data about the habits of inhabitants from the past century of the city could, speculative speaking, enhance serendipitous discoveries of alternative perspectives of the city's topology, an so on.

In the television series Westworld (2016) produced by HBO and drawn from the homonymous film by Michael Crichton (1973), robots are designed to entertain visitors in a theme park. They always do the same things in a constant loop: every time they die, often with violence, the remembrance of what happened is erased and they are reprogrammed to restart doing the same things. The first robot that will not follow commands is the one that, perhaps due to a programmers' mistake, will keep in of its repetitive life cycles the remembrance of one of the previous cycles: memory thus becomes the first principle of identity and identity becomes the principle to claim the freedom to make their own choices. In the same way, this principle can be applied to Remembrance Archives: memories of the past melt with today's memories, remembrance of a multi-voice identity that alter the output of computational analysis and artificial intelligence predictions, surfacing in the instructions of a behavioral regulation eventually messed up and open again to imagination and different possible futures.

[7] See also the Time Machine Project manifesto "Big Data of the Past" (https://documents.icar-us.eu/.../05/time-machine-manifesto.pdf)

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