

Design in the Digital Age

Technology
Nature
Culture

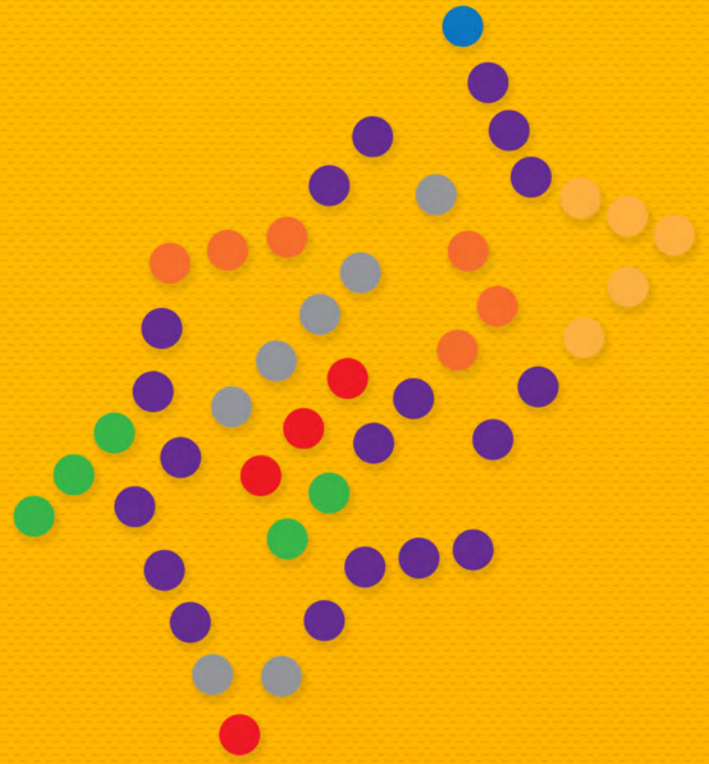


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Il Progetto nell'Era Digitale

Tecnologia
Natura
Cultura

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THE SOUL OF THE SPACE

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Abstract

When people are in a place, their five senses can create connections with the space. The interaction between space, people and objects forms an “activity scene”. The life scenes that take place in the urban spaces compose the image of the city. The life scene is an expression of culture that can be perceived, recognized and remembered by people, both by citizens and travellers. Life scenes also reflect the social structure of a place to some extent. This paper considering urban spaces as a place of “artistic dwelling”, points out the connection among civilization, urban spaces and genius loci, and proves that the defence of the genius loci and the diversity of lifestyles can be a determining factor in the future development of cities. The paper investigates the diversity of urban spaces in three different aspects. In the first part, it discusses the relationship between people, space and objects, according to the “field theory” (Kurt Koffka) and the “human senses theory” (Juhani Pallasmaa). This part investigates how spaces affect lifestyles that take place. The second part analyses the use of narrative methods and some innovative experiences in the development of new technologies in the public spaces. The third part is also the conclusion part and, combined with the previous discussion, looks for a new spatial narrative method as a method that can create interactive experiences between spaces and people.

Keywords: Genius Loci, City Technology, Digital Narrative, Urban space

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Introduction

Culture is about phenomena, while civilization is about time. Culture changes with the passage of time, while civilization represents the identity of a place. The adherence to the identity of a place is a necessary condition of living and consists of intangible elements and tangible objects that define the spaces of living. Art is the best way to convey people’s inner sensitivity to tangible things. The Norwegian architect Christian Norberg-Schulz was among the firsts to highlight the relationships between living and art in the definition of genius loci: «The concretization is the function of the work of art in opposition to the abstraction of science [...] the work of art helps the dwelling of people» (Schulz, 1981, p. 23).

The investigation on the relationship between places and people began at the beginning of the 90s in the dialogue between the design disciplines and the social sciences, highlighting how much our ideas and behaviors depend not only on “who we are”, but also and above all on “where we come from”. Nowadays, the rise of information and communication technologies (ICT) is interwoven with the transformations of the city’s spaces. The way we interact with space and the urban environment has changed radically. The challenge we face today is to understand how the new communication technologies can help us answer these two questions. Norberg-schulz et al. believe that the city is a collection of places that takes care of the feelings of people’s daily lives. As a primate species in the universe, the meaning of people’s homes is not only related to abstract logics such as science, technology and data, people need imagination, emotions like surprise, excitement, romance, etc.

The aim of this contribution is to understand how new technologies can promote the narration of cities, thus enabling people to better dwell in cities. Based on theoretical analysis and cases classify analysis, the text analyses the theme under the scrutiny of three aspects related to urban space:

1. People, spaces and things;
2. The digital narrative models;
3. Conclusion—The construction of a new narrative model.

People, spaces and things

The Chinese geographer Yifu Tuan writes about space: «when space feels thoroughly familiar to us, it has become place» (Tuan, 2005, p.73).

Our identification with places takes place based on the perceptions and sensibilities that each place transmits to us. These perceptions depend on subjective personal factors and elements of knowledge that help us understand the specific culture of that place. Every place in fact is defined in our relationship with the culture that generated it.

Japan and China, for example, have concepts, related to private space, that are often antithetical. Japanese architecture works around the concept of “emptiness”. Space is a container that according to Japanese religion, once built, houses the gods that regulate the relationships between people and spaces. Space therefore in Japan assumes meaning, even if it has no further elements, as a “spiritual” space.

In Chinese philosophy through the interpenetration of yin and yang “man and nature live in harmony”. The universal order is constituted by the equilibrium of these two complementary principles and thus, on the contrary, also space is determined by the presence of natural elements which mediate between man and space.

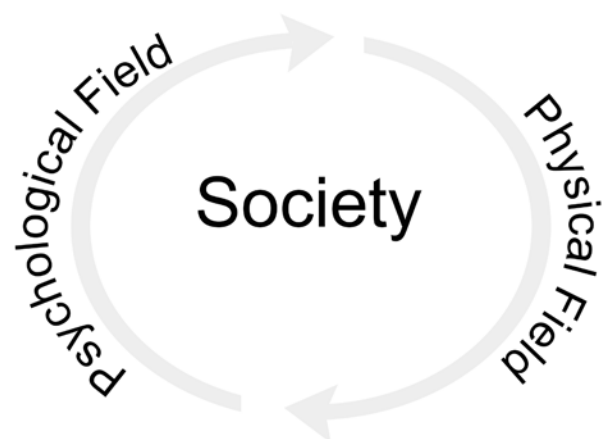


Fig. 1



Fig. 2

The Field Theory

In the explanation of social psychology, field theory is a conceptual model of human behaviour: every human action is influenced by the field in which the action takes place.

Field theory investigates the interactions between the psychological field and the physical field. It refers not only to space but also to the behaviour of people in space and the factors associated to it (artistic, political, religious, etc.); so, the physical factors and also the intangible connections that characterize them.

People in the same space are influenced by the physical field but at the same time generate a psychological field and this, in turn, affects the physical field again. Consequently, a circularity is created (Fig.1), which defines the interaction between people and spaces. If the physical field is altered in a reckless way the circularity is interrupted; such is the case of architectural transformations that make the spaces extraneous to the inhabitants.

Think of what happened in Chinese society in the mid-1960s. The changes dictated by the cultural revolution have completely altered the “face” of the cities by deleting the elements in which people can identify, that were the basis of the circularity specified above. This broke the balance of the camp and caused the rigidity of social ideology and the loss of a public aesthetic consciousness.

Even in the theories of Kurt Koffka (1886-1941), a German psychologist and exponent of gestalt psychology, spaces are both psychological spaces and physical spaces. The psychology of gestalt, which inspires the subsequent Cognitivism, is a school of psychology focused on the themes of perception and experience. In other words, people’s behaviour originates and is ruled by their environment.

Quoting the story, told by a Chinese friend, concerning a travel experience in a European city, as an example of personal experience in an urban space, he says: «when I was walking in the city center, I followed the music to the church. On one side of the church, there was a long queue to buy tickets. Besides it was a musician playing the cello. Many people around him, and a few pigeons standing on the windowsill of the church, sometimes flying away [...], I stood on the ancient stone road, facing the marble wall of the cathedral, and looked up at the blue-grey sky [...], listening to the melody from the cello. At that moment, the place dismisses all my strangeness to the city. I feel that strangers are immersing like me. I really feel that I have been included into this city psychologically [...]».

This description suggests the relationships between space and perception. The physical environment is the pavement of the Duomo, the marble walls, the ancient stone streets. The be-

havioural environment consists of all the sensitive elements that interact in space: the people in line, the musicians playing, the people standing listening, etc.

All this builds a pleasant experience of which the narrator clearly remembers the details. When people are together in a place, they do not deprive others of space but rather they amplify their perception by providing a “sensory” support. By contrast, conflict situations in crowded places create a state of space that affects our perception of space.

People in a space field share a common archive of knowledge. This knowledge builds the personal experience of each inhabitant. Urban renewal sometimes destroys experiential baggage by generating a confused knowledge of space. Let us take as an example the hutongs of the city of Beijing.

Hutongs are narrow lanes formed by rows of siheyuan, the traditional courtyard dwellings of the historic center of Beijing and by extension a historic district with a defined operating system: the street vendors used to exhibit their goods at certain times in certain spaces adjacent to the residences. Their voices were a signal to the siheyuan inhabitants, who rushed to negotiate or dialogue with each other. The inhabitants knew perfectly well when vendors would arrive in the Hutong and the mechanics of sales, and over time this had been a tacit experiential model.

Today, inside the hutong, the spaces of commerce have become parking spaces and the presence of street vendors has been replaced by runners who deliver goods ordered online. The system of knowledge and sharing of space has been destroyed to the detriment of public spaces that are now alien to the lives of residents.

In the natural landscape, people use all the elements of perception: sight, hearing, touch and smell collaborate in a simultaneous vision that accompanies the practice of physical activities. In the contemporary city we are largely deprived of many of the sensory perceptions and our activities are unbalanced towards a visual detection (Pallasmaa, 2012). In the natural space, the experience of perception is complete and the five senses interact in a multisensory experience. In the urban space, the emphasis is on visual aspects which form the basis of a purely aesthetic experience.

The narration of the city

In the development of the contemporary city, bonds made of knowledge and experiences between people and spaces have gradually disappeared. They are still present in small villages or in the rural dimension of living but are gradually disappeared in globalised cities.

In a phase in which “diversity” is rapidly being replaced by “uniformity”, our identifying with places has been lost and, in the same way, the knowledge of those physical and perceptive elements that made them unique. So the spaces are more and more spaces of the transition and increasingly less spaces of permanence and sociality. The processes of “deterritorialization” and “despazialization” caused by globalization and the social mutations occurred started a gradual process of detachment from the city spaces replaced by non-places (Augè, 1992).

The responsibility to raise opposition to these changes necessarily falls on the work of the designers. The project of the city imposes the need to develop practices able to face locally in an integrated way the totality of the processes in order to rediscover the geocultural richness of the places, up to the invention and reinvention of a multiplicity of knowledge and elements of diversity.

The relationship between contemporaneity and memo-

ry emerges as key issue in the project reflexions on the public space. It is therefore necessary to find the ways to repair lost knowledge. The “narrative processes” can be the instrument with which to reactivate the knowledge systems; the practices of the “narrative design” are nowadays progressively contaminating the urban planning reactivating modalities of acquaintance of the spaces by the inhabitants. The shop windows, city sculptures, multimedia art in the squares, the large digital screens on the streets or other installations in public spaces constitute the elements of a narrative that can patch the relationship between people and spaces.

Digital technologies plays an important role in shaping the identity of the spaces, and communication-information technology (ICT) expands the dimension of the perception of urban space. There is now more and more talk about hybrid spaces as defined by Elizabeth Sikiaridi and Frans Vogelaar in their laboratory in Berlin: «Hybrid Space stands for the combinations and fusions of media and physical space. HyBrid spaces are the products of the alliances between physical objects and digital information-communication networks, of architectural urban and media space». (Hybrid Space Lab).

Technologies such as ubiquitous computing, augmented reality, the context aware computing, wireless location and sensor networks, are increasing the way people perceive cities. There are several ways in which technologies can be used in a narrative sense to tell the many stories of cities and foster interaction with.

The mobile narrative

It's a use of storytelling using augmented reality technologies applied to the spaces of the city. «Augmented spaces is defined as a physical space overlaid with dynamically changing information, multimedia in form and localized for each user» (Manovich 2006).

They are narrative systems that use the physical space of the city as an interface to encourage people to move around the streets and squares and acquire the desired knowledge. The first mobile devices based on this technology where BotFighters (first used in Sweden in 2001). The user uses the space of the city as a game board inside which he can connect to the network through the mobile phone interacting in the physical space next to another player.

Another narrative scenario is the one developed by the Storycity app (QUT La-boratory, 2020), a project launched to help people learn about the history of the city. Storycity is an adventure game, in which everyone is the protagonist of history; tourists who undertake their own adventures at the same time interact with native residents to gain more local knowledge.

A slightly different focus is used for an experimental study that uses mobile storytelling in Kevin Grove City Village in Brisbane. The study allows users to experiment the sites of stories (for example historical novels) in the physical position of the stories, thus providing a historical narration of the location.

At the same time, the presence of spaces (mostly exhibition areas, commercial or entertainment areas) where it is possible to access in a wireless way to various information related to way-finding or to the knowledge of the spaces themselves is increasingly widespread.

The narration of food

Food is one of the few expressions of culture that has not undergone the cancellation imposed by modernity and in its relationship with places contributes to the definition of the identity

of our cities. Food and place cannot be separated from people's daily lives. The food and the spaces devoted to it in our historical cities draw a line that link the past to the future. The food that hides in the streets of our cities is a common memory, it is an important piece of diversity; it constitutes a language of communication between people and defines the cultural context.

Food can be a way of telling; people's taste and smell can make people identify a place. For a traveller, finding local foods is the first thing after arriving on site.

The popularity of food-related apps reflects people's demand for different food experiences but at the same time digital technology can integrate food into the narrative system of places and connect it to the genius loci.

Urban furnitures as narrative objects

The expression “urban furniture” usually refers to equipping urban public spaces with functional and communication components, taking into account the needs of the space environment. All the objects in a urban space can be the purpose of urban furniture design: signs, seats, bricks, plants, etc.

Even such elements can have a meaning in a narrative view.

The street sign used in Berlin, *Ampelmännchen* (Fig. 2), holds the history of the fusion between East and West Germany and the nostalgia of the people for East Germany. At present, *Ampelmännchen* is also one of the symbols of the city.

In Bristol, UK, are now creating a digital infrastructure to connect all the elements of the city in the vision of a smart city. Internet of things, 5G and other technologies are used in a project called Bristol is open to interconnect the entire city through a software. The city's council is working with Bristol University and other partners to equip the city with the latest in sensor and connectivity technology. The high-speed fibre network, which makes use of disused cable ducting owned by the city, is being combined with the university's supercomputer and a new ‘city operating system’ that will power the experimental network. This technology is used in almost all of the city's objects such as benches, pioneers, trees, etc. The experiment will also look at how cities of the future can be more fun. Playable City, a project run by the Watershed creative studio, plans to use the new network to run a number of experiments. Last year artists “hacked” lamp posts around the city with cameras and projectors to record people's shadows. These shadows were then played back onto the pavement

Another example of technologies that can be applied to the city furniture in a narrative view is Message Pilar.

Message Pillar is a device located in Tokyo City Square, Japan (Teamlab, 2016). The look is that of a normal street lamp. What you see through the mobile phone app is a completely different image. People can edit information and send it to Message Pillar. They can also see information modified by others. Finally, all the information is collected together to fit the shape of a tree.

Conclusion - A new narrative model.

This research focuses on the new spatial narrative model basing on the theories about space discipline, sociology and psychology. Looking for the solution of the social problems related to people's life, emotion and culture in cities. Cities are more and more smart, the life in cities are more and more convenient, meanwhile, people need to “Looking for Self” in another places increasingly. Travel becomes citizens' way of replenishing. In China, the urban space has lost the ability to narrate to people, citizens cannot link themselves with the space. Technology can

be used to express spiritual civilization in cities.

The diversity of space is a topic that has been continuously studied. Each space tells its own story through various elements in it. People in the space can perceive the information expressed by these elements, and thus have a connection with the space. This article regards space as a collection of various elements. Through the tools of the design discipline, create connection between space and human perception, and explore the new spatial narrative model. For example, the model that will be discussed below

The research methods used in this study mainly include Scenescapes Analysis. Use scenescape analysis to analyze local cultural styles and investigate the relationship between local cultural characteristics and the contemporary development of social life. Scenescapes Analysis is a relatively new research method, which was first proposed by Daniel Aaron Silver in the text "Scenescapes: How qualities of place shape social life". Silver demonstrates how the characteristics of the place shape social life. It is a predominantly descriptive and analytical research, focused on contextualization. Scenescapes Analysis can be used in the research process to quantify the cultural characteristics of space through analog analysis. For example, placing local scenes in other scenes to understand how key scene dimensions work, and so on.

In the new model, street furnitures are used as the "tangible objects" to connect people and space. "Life scene" are used as a narrative content. The "life scene" is the form that can allow people to develop immersive experiences in space, in the most complete form and knowledge of the spirit of the place.

This initial model is notional use of ICT to set a detection point on objects such as urban furniture. When people activate this sensitive point, the software embedded in the object begins to stylize or artistically-mind (similar to the filter function) the image of the scene.

Meanwhile, the built-in sensor records the "life scene" and thus the environment, voice, actions, events, etc.

Time will be an important clue for this model. In the morning, afternoon and evening of a place, the place in spring, summer, autumn and winter

People can record themselves and places and keep memories of this moment. People can also look for a certain day in history (a time that people think is significant, etc.), scenes and events that are crowded in this place in the default store.

This spatial narrative model uses city technologies to explore new ways of expression of city cultural heritage. The key point is to show people cultural heritage through urban space and in a narrative way. This model can be used as education purpose, or as a form of preservation of the city's cultural heritage, or as a space for people to create a relaxed mind in the city.

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Fig. 1 - Drawing of the connection between space people and objects.

Fig. 2 - Photo of a traffic light taken in the city of Berlin.

HABITAT MUTEVOLI E SOLUZIONI INNOVATIVE PER LA SCUOLA DEL FUTURO

Paola Gallo¹

Abstract

Negli ultimi anni la relazione tra ambienti educativi e apprendimento riferita agli edifici scolastici è cambiata significativamente secondo nuovi concetti pedagogici e standard ambientali. L'importanza di valutare l'ambiente formativo in relazione allo spazio fisico, con i risultati dell'apprendimento (*Learning performance*) è la nuova frontiera per la progettazione degli edifici scolastici. Il paper attraverso un breve excursus sullo sviluppo degli ambienti di apprendimento nello scenario Europeo, prefigura strategie finalizzate a innovare la cultura del progetto degli edifici scolastici, in equilibrio ed armonia con i più recenti dettami della progettazione ambientale

Keywords: Edilizia scolastica, Environmental Conscious Design, Learning performance, Habitat adattivi

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Introduzione

Negli ultimi decenni la relazione tra ambienti educativi e apprendimento all'interno degli edifici scolastici è cambiata significativamente in seguito all'introduzione di nuovi concetti pedagogici e di standard ambientali per la realizzazione di edifici ad alte prestazioni e a zero emissioni. I recenti studi scientifici sugli edifici scolastici hanno evidenziato la necessità di un approccio olistico e interdisciplinare per una progettazione contemporanea che risponda ai bisogni educativi e sia sufficientemente flessibile, in grado di facilitare i diversi modi e stili di apprendimento ma nel contempo esalti la componente ambientale come approccio ecologico secondo i principi dell'*Environmental Conscious Design* (ECD).

L'importanza di valutare l'ambiente formativo mettendo in evidenza il legame tra lo spazio fisico e i risultati dell'apprendimento degli studenti (*Learning performance*) risulta essere la nuova frontiera per la progettazione degli edifici scolastici (Barrett, 2017).

Viviamo, infatti, in un periodo di transizione in cui è necessario ripensare il modello didattico per una scuola funzionale ai bisogni di competenze e professionalità espressi dalla società contemporanea.

Secondo i nuovi modelli didattici-pedagogici, gli spazi per l'apprendimento centrati sulla figura dell'educatore, non sono più sufficienti a soddisfare queste esigenze (Fisher, 2016) e ciò implica la necessità di rivedere l'organizzazione scolastica, il tempo e lo spazio del fare scuola.

Il passaggio verso questo tipo di apprendimento richiede la realizzazione di ambienti dinamici e flessibili capaci di rispondere ai nuovi modelli di apprendimento, siano essi tradizionali o personalizzati (Beckers et al., 2013). Una buona progettazione per gli edifici scolastici, combina infatti risultati ambientali, sociali ed economici positivi se vengono concepiti per ridurre al minimo il consumo delle risorse ed incoraggiano a ridurre gli sprechi, così come realizzati per essere durevoli, resistenti e adattabili, consentendo la loro evoluzione nel tempo per soddisfare le esigenze future.

Evoluzione e tendenze per gli ambienti di apprendimento

Sono molti in Europa i programmi sviluppati in questi anni indirizzati allo sviluppo di ambienti di apprendimento per il

XXI secolo. In realtà, un modello di ambiente innovativo per l'apprendimento era già stato sperimentato negli anni Sessanta con il progetto *School Construction System Development* ad opera degli Educational Facilities Laboratories statunitensi con il progetto di scuole a pianta aperta (*open-plan*) con ampi spazi suddivisibili. La soluzione fu presa in considerazione solo negli anni Settanta, ma a causa sia dei rilevanti problemi tecnici, in particolare legati all'acustica, sia della pratica didattica non ancora matura per il passaggio dal modello didattico tradizionale al nuovo approccio (Kühn, 2011), non ebbe immediato seguito nella ricerca o in ulteriori sperimentazioni progettuali.

Attualmente, invece, vi sono numerosi esempi di scuole progettate sulla base del modello *open-plan* (OECD, 2011), che ben si adatta a supportare l'ampia gamma di competenze cognitive, sociali ed emotive richieste oggi agli studenti per riuscire in tutti i campi della vita (OCSE, 2015b).

Nella progettazione di ambienti di apprendimento per il XXI secolo, sempre di più attraverso nuovi approcci basati sull'*Evidence Based Design* (Lippman, 2010), è indispensabile creare una pluralità di ambienti a sostegno della partecipazione attiva sia degli alunni che degli insegnanti. Se da una parte i nuovi approcci pedagogici mostrano la loro validità rispetto al raggiungimento degli obiettivi didattici, dall'altra risulta difficile coinvolgere le autorità e perfino i docenti, sul ruolo che l'ambiente fisico ricopre nel processo di insegnamento-apprendimento.

Negli ultimi anni, a seguito della maggiore consapevolezza dell'effetto dell'ambiente fisico sulla salute e il benessere degli individui, sono state condotte varie ricerche che approfondiscono il rapporto tra ambiente fisico e apprendimento: Peter Barrett (Barrett, 2017) con la ricerca *Holistic Evidence and Design* (HEAD) ha individuato l'importanza di valutare l'ambiente in modo olistico mettendo in evidenza il legame tra lo spazio fisico e i risultati dell'apprendimento degli studenti (*learning performance*). Altri studi hanno, invece, individuato come l'ambiente fisico possa contribuire alla creatività e alla comunicazione tra studenti e insegnanti (Davies et al., 2013).

Secondo Julia Atkin, l'efficacia dell'ambiente fisico per l'apprendimento dipende dalla disponibilità e dalla possibilità di scelta che studenti e insegnanti hanno nell'utilizzo degli spazi (Atkin et al., 2015). Atkins sostiene inoltre che l'efficacia dell'ambiente dipende anche da quanto gli spazi siano accessibili e riconfigurabili, e se agli studenti viene permesso di scegliere il tipo di spazio da utilizzare e la possibilità di usarlo.