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## **Semiotics, Information Architecture and Blended Places**

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### **Abstract**

This paper is an exploratory overview on how Semiotics can approach the study of *cross-channel ecosystems* – that I call *blended places* – term used in the field of Information Architecture to refer to those spatial systems where analogical and digital elements are blended together to create a novel cross-channel user experience that cannot be reduced to only physical or only digital dimension.

After discussing why the Internet can be studied as a space and why today the opposition “*analogical vs digital*” is no more relevant in our socio-cultural life, I take into account the perspective of Information Architecture on spatiality to show some theoretical aspects Semiotics can focus on in order to analyse this new.

### **1. Introduction: the Internet is a space**

Semiotics usually studies the Internet as a *medium* and analyses digitally-related phenomena using theoretical tools that come from its own approach to the study of new media and sociosemiotics (Cosenza 2008, Lorusso, Ferraro 2016). Though, today the Internet seems more than just a medium that influences communication and relationships between people. Our daily experience of the Internet has a lot to do with meaningful locations that exist somewhere, placed in a reality that is not physically manifested, but nevertheless perceived as real. As other disciplines such as Information Architecture and User eXperience Design show, the Internet can be actually seen, analysed and designed as a *space*.

There are at least four socio-cultural reasons that show how the Internet has a lot in common with spatiality as well as mediality.

The first is that when we use the Internet we actually visit artificial environments made by information, each having a specific architecture. The relationships between multimedia elements are meaningful, as well as the absence of an element in a list of links or the specific order of a website’s menu items (cfr. Murray 2012). The path we can go by and our particular interactions with the elements present in the scene are also designed on purpose, or they are possible consequences of an architecture specifically designed to allow us visiting that information space.

The second reason is that when we are online we actually *move* within the digital spatiality. We can act upon an element (e.g. a link, a button) and suddenly the whole scene reacts to our action and changes



consistently. As Murray (*ivi*) argued, by interacting with what we see we understand the environment's spatial relationships and dynamics. Therefore, since digital environments are built upon an information architecture, we experience a change of the perceived scene as the consequence of our movement within that architecture.

The third reason is that we do not just move within the Internet, we also *dwell* in it. We have our personal account on every social networking platform, we own personal blogs and websites, we have a huge amount of space for personal electronic mailboxes, and so on. As recent studies in the field of digital anthropology showed (Horst, Miller 2012), each of these spaces is not a public environment where we interact with others but a house that we customize as a reflection of our personality: we choose background pictures, change the colour scheme and decide what to make public to friends. As geographers may say, we feel those spaces as belonging to us, and we feel to belong there: we develop a sense of place (Tuan 1974) in the digital space.

The fourth and more important reason is that we spent more and more time interacting with other people through socially oriented platforms, that exist primarily (or only) on the Internet. In each of these systems, we are part of a tribe that shares values, interests, beliefs and goals. As Tim Rayner (2013) argued, each digital tribe has its own language and socially accepted ways of interacting, that are based on a gift economy: we belong to a tribe just when we give something (e.g. a content) that enriches that collectivity. Furthermore, these social interactions always take place in a (digital) environment that is topologically designed to represent that tribe's cultural values: it is a place where we live meaningful experiences and where we feel to be part of a community of people.

The perceived spatiality of the Internet, the possibility to move and dwell in it and the sense of belonging to a place that is ours are all elements that allow us, as analysts, to study the Internet as an anthropological space.

## 2. Analogical vs Digital

When the Internet era began, we started pointing out a list of oppositions like “real *vs* virtual”, “physical *vs* intangible”, “information *vs* atoms” or the most intriguing “space *vs* cyberspace”. All of these categories can be summarized in the opposition between what is *analogical* – having an alleged relation of analogy with the world we know – and what is *digital* – based on an electronic discrete representation of the world in bits (1 and 0). This difference was culturally accepted both in and outside the academic world, because the two dimensions of life – analogical and digital – had different dynamics and socio-cultural values, often contradicting each others, that defined several clear bounds we crossed when we went “on-line”.

With the spread of smartphones and tablets something changed. Today we spend a lot of time, everywhere we are, being physically still with eyes pointed to small screens, cognitively moving and exploring environments made by information. But we also started to create gates – using technologies like qr-codes – that connect physical places to a digital layer, capable to enrich our experience and knowledge of that locations. Moreover, we can see this digital layer exposed over the physical world using augmented reality applications, so that the scene we perceive completely changes in meaning and interaction possibilities. Furthermore, proximity sensors – that allow computers to exchange contents with people when they get close to the sensor – have already started to be used in several contexts like malls, shops, restaurants and museums, to enrich user experience and engagement. As Dourish states:

The technologically mediated world does not stand apart from the physical world within which it is embedded; rather, it provides a new set of ways for that physical world to be understood and appropriated (Dourish 2006).

Therefore, the clear distinction between what is analogical and what is digital is today almost irrelevant in our life. We understand and interpret our reality beyond these categories, and we reached what



Negroponte (1998) argued: “Like air and drinking water, being digital will be noticed only by its absence, not its presence”.

### 3. Different approaches to spatiality, towards the “hodological space” and cross-channel ecosystems

From early works on topological semiotics by Greimas (1976) to most recent semioticians’ works, Semiotics has developed a specific framework to analyse place and spatiality. A place is theoretically defined as

a semiotic system by which men give sense and value to the world (contents) according to the physical articulation of the spatial extent, being it natural or artificial (expression) (Marrone 2001, p. 292)<sup>1</sup>

and as something

perceived as a consistent whole, having edges and bounds even if they are not clear or marked, having a stable identity and being identified by a name capable to define it toponomastically (Violi 2009, p. 122)<sup>2</sup>.

On this basis, several semioticians works deeply investigated socio-cultural and ethnographic aspects related to spatiality: how people interact and make sense of urban spaces (Marrone, Pezzini 2006, Floch 2002), how places determinate meaningful relationships between people and daily objects (Marsciani 2007), up to specific studies on the semiotics of architecture (Hammad 2003). In all these research fields, place is studied as a semiotic system where subjects live narrative programs by moving and interacting within spatial delimitations, that determinate how we make sense of the world according to our cultural encyclopedia. A place, for Semiotics, has therefore a narrative structure – with actants, narrative programs, thematic roles and so on – that gets manifested according to a physical articulation of those spatial delimitations.

In the scenario we are taking into account, the reality we experience connects an analogical layer made of atoms, physical artifacts and places, to a digital layer made of bits, information and multimedia environments. Thus, since movement within this fluid and mixed reality is not bodily-based but has a strong cognitive connotation, we need to take into account a different perspective on spatiality.

The German philosopher O. F. Bollnow (1963) framed spatiality not as something physical or mathematical, but as something anthropological: space is relative, depending upon individual, direct and personal experience. In his theory, our spatial references are relative to a subjective system articulated through the focal points of our journey, from where we start to where we return. These focal points continuously change and every step re-organizes the surrounding space in “sacred-safe” areas that we consider familiar and “profane” areas where chaos reigns. This is what Bollnow called *hodological space*: a space of movements, depending on “the factual topological, physical, social, and psychological conditions a person is faced with on the way from point A to point B” (Ergenter 1992).

In the field of Information Architecture, Bollnow’s perspective is at the core of the most recent design approaches. Resmini and Rosati (2011) argued that today

information is bleeding out of the Internet and out of personal computers, and it is being embedded into the real world [...] users interact with many different devices and systems, in different places, with varying degrees of awareness that they are using computer tools (*ivi*, p. 18),

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<sup>1</sup> My translation.

<sup>2</sup> My translation.



and so they proposed a notion of *cross-channel ecosystems*. The term *cross-channel* – originally coming from the field of marketing – identifies “a systemic change in the way we experience reality” (Resmini 2011) and the term *ecosystem* refers to the ubiquitous ecology “comprising devices, users, information, touch-points” (*ivi*) as well as physical artifacts and places. In order to analyse this socio-cultural change from a designer point of view, the authors framed their approach to spatiality on the basis of Bollnow’s theory:

we say navigate, but we really mean understand [...] it is a space of path, and experience, and corresponds exactly to what we perceive if we move between two different locations (Resmini, Rosati 2011, pp. 66-68).

As a result, our daily experience becomes a journey of interpretation across different systems, some analogical and some digital, some partially sharing a common semantic and some totally inconsistent from each other.

For example, our experience the Museum of London could start from accessing the museum’s Facebook page and then moving to its official website where we choose what to see within the proposed thematic paths. Then we take a look to some reviews on TripAdvisor and two more travel blogs found via Google Maps, and we choose to buy tickets on The London Pass website. Next morning we visit the museum’s physical building in the city and in the afternoons we use its official mobile app to visit some historical spots nearby. At the end, we get back to the Facebook page to post a picture of ourselves in one of these locations. Analogous examples can be found in our everyday activities, from shopping to interacting with public administration. Furthermore, recent studies on locative media (de Souza e Silva, Duarte, Damascano 2017) show how people, through the use of smartphones, appropriate and use public spaces for art, gaming or other practices that are not the intended purposes of that spaces: these practices start within digital environments and then pervade extraneous physical ones, and *viceversa*.

The resulting experience is, in information architects’ approach, the consequence of an emerging ubiquitous ecology where all these physical and digital places are related thanks to a *pervasive information architecture*: the “information layer that enables and connects all channels participating in a ubiquitous ecology” (Resmini 2011). This architecture defines a consistent narrative structure to whom experience it, by joining all the elements into a whole ecosystem of meaning. Therefore, information architects defined theoretical tools to study and design what is actually a narrative structure (or narrative architecture) of a place that goes beyond physical delimitations, and comprehend elements that only manifests in form of pure information. Here, some (or every) narrative programs exist only as a cross-channel journey, and the overall effect of sense cannot be reduced to the sum of the narrative programs of each physical or digital channel.

Semiotics’ theoretical tools – especially narrative related ones – can thus provide a focused and useful analytical approach to address the nature of these emerging spatial systems, that are exactly “perceived as a consistent whole” – as Semiotics argues (Violi 2009) – and yet “unbound, actor-constructed, and transient” – as Information Architecture reveals (Lindenfalk, Resmini 2016).

#### **4. Blended places**

If we take into account the information architects’ perspective on spatiality, we should also consider how the notion of place itself changes. As we discussed, what can be identified as place is defined by the specific experience we are living and, at the same time, our experience takes place into one (or more) environments – some digital and some physical – that partially share the same narrative structure, with narrative and thematic roles, narrative programs and a coherent *mise-en-scène*.

Experiencing the same narrative means understanding these environments not as different and separated silos but as a single cross-channel place. The bounds of this place are strictly related to the experience an individual lives when moving within the ecosystem, across digital and analogical channels. Therefore, since this kind of place is something that is built upon some analogical elements (eg. rooms,



streets, squares, buildings, parks, etc.) and some digital elements (e.g. websites, app, displays, sensors, etc.) brought together into something new, what we are considering here stops being just analogical or just digital: it becomes a *blend*.

In the field of interaction design, Benyon (2014) introduced a notion of “blended space” as an environment “where a physical space is deliberately integrated in a close-knit way with a digital space”<sup>3</sup>. The author applied the theory of conceptual blending (Fauconnier, Turner 2002) to the design of mixed-reality environments, and developed a framework where digital and physical spaces can be seen in terms of formal characteristics, that are then related and integrated in a blended space with the purpose of creating a specific new user experience.

On the other hand, as Benyon and Resmini noted, the notion of cross-channel ecosystem discussed above – that includes emerging partially-designed ecosystems – can be seen as

a superset of the conceptualization of blended spaces that considers how constant read / write access to a continuous personal stream of correlated information has blended individual physical and digital artifacts into complex hybrid ecosystems [...] and affect all sorts of everyday activities (Benyon, Resmini 2015).

Thus, a cross-channel ecosystem seems to delimit an understandable narrative out of the surrounding chaos of daily possibilities. As Dourish and Harrison (1996) argued: “Space is the opportunity; place is the understood reality”.

Therefore, we can define a *blended place* – as opposed to the blended spatiality we live in today – as a cross-channel ecosystem where the underlying pervasive information architecture defines an overall consistency and continuity of the user experience. Its effect of sense is determined by the complex correlation of analogical and digital elements appearing in different locations and different moments, that become parts of the same narrative.

## 5. Towards a Semiotics of Blended Places

The design heuristics for creating pervasive information architectures show how cross-channel ecosystems have several properties that seem to contradict the semiotic physical-oriented perspective on spatiality.

First of all, individual places must be considered as ecosystems because, as discussed above, when “contexts are intertwined tightly, no artifact can stand as a single, isolated entity. Every artifact becomes an element in a larger ecosystem” (Resmini, Rosati 2011, p. 52). This entails that we cannot define a place just according to its physical articulation, because the architecture of blended places has more to do with a structure of meaning than with bricks, streets or a tangible manifestation.

Secondly, users must be considered as intermediaries, because they

are now contributing participants in these ecosystems and actively produce new content or remediate existing content by ways of linking, mash-ups, commentary, or critique (*ivi*, p. 53).

But user intermediation is not related just to the phenomenon of remediation practices that Semiotics deeply analysed (Dusi, Spaziant 2006): user participation can change an ecosystem’s architecture by introducing novel ways to navigate it.

The first and well known example is the introduction of *hashtags* in Twitter. Platform’s early adopters were looking for a way to relate tweets that were part of a single conversation, and they proposed the (now familiar) syntax “*#+keyword*” to identify the *context* of an ongoing conversation, being it a thematic context and/or a physical context (Messina 2007). Since that moment, by putting a # before a word we can create a new cross-channel ecosystem that connects events happening to different people (or social groups) in different physical locations.

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<sup>3</sup> The author uses the term “space” to indicate a delimited part of the environment where we live and interact.



A second (and more designed) example is *Real Time Copenhagen*<sup>4</sup>, one of the seminal projects, made by MIT in 2008, that tracked volunteers' nightlife activities through GPS, and displayed their traces on a map. The resulting representation was made public and was used by other people to choose the most appropriate routes through the city, or choose which events they would like to participate to. In this case, a cross-channel ecosystem's architecture has been designed to use people participation as the agent that produces a constantly changing city's navigation paradigm: an emergent structure entailed by the blended place's architecture itself. More recent and detailed examples of this kind of designed blending can be found in locative media studies (cfr. de Souza e Silva, Sheller 2015).

These aspects also illustrate why blended places are constitutionally *dynamic* and *transient*:

the active role played by intermediaries makes them perpetually unfinished, perpetually changing, and perpetually open to further refinement and manipulation (Resmini, Rosati 2011, p. 53).

In other words, blended places do not simply permit remediation: they are designed to be fully actualized only thanks to the active participation of people.

Because of this complexity and dynamism, taking into account the process of design seems an essential step to correctly understand the effect of sense of the place as an ecosystem. By ignoring the design process, we analyse just what that blended place is for us in the very moment we experience it, and we risk to miss the overall experience that could affect the socio-cultural dynamics where the place itself is included.

Therefore, a semiotics of blended places should address at least three problematic aspects: place's *delimitations*, its *dynamic identity* and the *role of people*.

Since physical articulation is not the only dimension to be considered, to determinate a blended place's delimitations we should focus on the narrative structure of the place as a formal object. Indeed, user experiences articulate on narrative programs, that are designed and inscribed within the ecosystem's information architecture. By understanding the underlying narrative architecture, rather than focusing on the physical spatiality articulation only, we can determinate which elements can be considered to be part of the blended place as a semiotic system, hence defining what are its formal delimitations (cfr. Maggi 2014).

Secondly, since a blended place is naturally dynamic, analysing the diachronic dimension of the semiotic system is crucial. Diachronic analysis usually require a complex job to observe and collect information on different states of the system, at different times of its evolution. Though, most of the relevant potential evolutions of a blended place are already inscribed in its information architecture: by observing it from a designer point of view, the analyst can show how the narrative structure of the ecosystem entails and can promote some socio-cultural practices as central, making others marginal. But adopting the lens of a designer does not mean to base an analysis on what the empirical author wanted to do: it means understanding how designers created the architecture of that place, to show how their choices produce both desired and side effects on that place's narrative programs (cfr. Maggi 2015).

The third aspect is that, since users become active intermediaries, the formal role of people in the semiotic system could change. In the study of places, Semiotics usually treats people as receivers of the resulting communication, and the place – as a semiotic system – inscribes them with specific positions in the narrative articulation. Though, as discussed in the examples above, in blended places people act as co-creators of the semiotic system: their active participation is a structural part of the architecture itself and determines the effect of sense of the place, as well as its identity and the socio-cultural values it transmits. Therefore, since receivers seem to assume the formal role of *co-enunciators*, Semiotics should also reflect upon how this aspect affects the formal mechanisms of the enunciation.

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<sup>4</sup> *Real Time Copenhagen* project description can be found on <http://senseable.mit.edu/realtimecopenhagen/>



## Conclusions

Blended places are semiotic systems where analogical and digital elements are brought together to create a cross-channel ecosystem, with a dynamic identity that is determined also by people active participation, and where to navigate means to interpret a space of path and experience, that is not only physical, nor only digital.

A semiotics of blended places should start by focusing on the narrative structure exposed by the place's pervasive information architecture, analysing its diachronic possible evolutions and reconsidering the role of people as co-enunciators of the semiotic system. This approach requires the analyst to study a place also with the lens of designers.

This novel object of study is an opportunity for Semiotics not only for exploring and define new analytical tools, but in particular to join an academic debate with other discipline like Information Architecture and User eXperience Design, that today still miss the theoretical perspective of Semiotics in their methodological tools.





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