

Envisioning Transitions

Alma Mater Studiorum
University of Bologna
Department of Architecture

Architecture and Design
Cultures PhD programme



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI ARCHITETTURA

Bodies, buildings, and boundaries

Curator: Prof. Arch. Annalisa Trentin

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ISBN 9788854971141

DOI 10.6092/unibo/amsacta/7324

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International Conference, 16th December 2022

“**Transition**” is the dynamic process of changing state, going beyond, crossing over, and passing from one point to the next. The signification of the word is close to that of **evolution, modification, mutation, and transformation**, all of which are confined into a strictly restricted timeframe.

Etymologically, “transitions” can be nothing else than temporary: they appear silently, burst, violently establish, and gradually disappear into reality. In their blinding momentariness, “transitions” bear with them the positive undertone of change and renewal, along with the hopefulness of that which is unknown.

If the term “transition” recurs regularly in the contemporary vocabulary of **architecture and design cultures**, this repetition reveals a period characterized by **overlapping and sequential changes**. The word is without a doubt overused, but not without reason. Indeed, we find ourselves in an unusually extended period of consecutive “transitions”, overwhelmingly undefined in temporality and ambitions. As we are witnessing societies go through stark demographic, political, economic, and cultural changes, the intersecting problematics (e.g., ecological, digital, pandemic, etc.) form a rather complex topography of change, negatively charged by the instability of dilated time and the uncertainty of undefined destination.

The word is employed with the confidence of a natural process, as if it were a storm, and while we affirm our existence in “transition”, we nod our troubled times away. Whether positively or negatively perceived, “transitions” form bridges between histories. **Yet, what does it actually mean to be in “transition”?** Can we define it as an autonomous and productive period whose importance could go beyond a starting and an ending date? How are “transitions” impacting and being impacted by human spaces, the built environment, and design cultures? What are some concrete, practical case studies that demonstrate how “transitions” could affect architecture and design cultures while emphasizing the role that these disciplines play in transitional processes?

It is within this backdrop that we put forward the theme of “transition”—in all its simplicity and complexity.

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The Scientific Committee is composed of the members of the Academic Board of the PhD Programme in Architecture and Design Cultures, Department of Architecture, Alma Mater Studiorum - University of Bologna.

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INTRODUCTION

Prof. Annalisa Trentin, University of Bologna

This publication collects the contributions selected and presented at the international conference, *Envisioning Transitions. Bodies, buildings and boundaries*, organized within the 36th cycle of the PhD course in Architecture and Design Cultures of the Alma Mater Studiorum of the University of Bologna, held in December 2022.

The international conference, organized by the doctoral students, has become an annual appointment, developed for the discussion on topics of interdisciplinary nature, useful for expanding knowledge and research goals, carried out within doctoral research and within the Unibo Department of Architecture.

The PhD program in Architecture and Design Cultures is multidisciplinary in nature, bringing together the specificities of architectural composition, urbanism, history, aesthetics, design, cultural heritage, technology, and design, combining fundamentals and applied research in an interdisciplinary perspective. The research activity is therefore developed according to thematic areas that, given the nature of the PhD program, aim to develop studies in the field of architecture and design cultures as wide as possible.

The international conference *Envisioning Transitions. Bodies, buildings and boundaries*, which follows those organized in previous years as: *The Matter of Future Heritage; CHANCES Practices, spaces and buildings in cities' transformation; The Ecological Turn. Design, architecture, and aesthetics beyond "Anthropocene"* and *Ground(s) - Mapping, designing and caring: Towards a convivial society*, once again focuses on topical matters trying to open a debate on contemporary issues.

The topic of transition and its relevance in the field of architecture and design, identified by PhD students of 36th cycle: Andrea Cattabriga, Valentina De Matteo, Francesco Di Maio, Lorna Dragonetti, Arshia Eghbali, Clara Giardina, Marco Iannantuono, Jing Zou, Giulia Marzani, Angelo Massafra, Claudia Nigrelli, Serena Pagliula, Marco Palma, Dafni Retzepi and Yuqing Zhu, was identified in three tracks with the intention of answering specific questions: the first track 'Bodies' questions on how to relate bodies and transitions; the second track 'Buildings' focuses on how architecture is adapting to the demanding framework of transition, and finally the third track 'Boundaries' focuses on how territories, cities, and various spaces of interactions are transforming and therefore the boundaries between people and objects, spaces, and different relational dimensions.

The selection of papers collected in this publication with the relevant contribution of keynote speakers Paul Emmons, Jean-Baptiste Fressoz, Laura Kolbe and Ami Skånberg Dahlstedt, testify an effort to combine contributions from different disciplines and provide different visions and interpretations on Transitions.

Annalisa Trentin

Coordinator – Unibo PhD program in Architecture and Design Cultures

Envisioning Transitions

Bodies, buildings, and boundaries

KEYNOTE SPEAKERS



Opening Lecture

Jean-Baptiste Fressoaz - French National Centre for Scientific Research | CNRS

JB Fressoaz is a historian of science, technology and the environment. He was a lecturer at Imperial College London before joining the CNRS in Paris. He is the author of several books, including L'Apocalypse joyeuse. une histoire du risque technologique (2012), L'événement anthropocène, la terre, l'histoire et nous (2013, 2016) and Les Révoltes du ciel. Une histoire du changement climatique, XVe-XXe siècles (2020). The latter two books have been translated into Italian. He will next publish a book entitled: Sans transition: une nouvelle histoire de l'énergie.



Track 1 – Bodies

Ami Skånberg Dahlstedt - Stockholm University of the Arts
Suriashi as a method for mortal mo(nu)ments

Ami Skånberg Dahlstedt, PhD in Dance from University of Roehampton, UK, is a performer, choreographer, filmmaker and teacher. She is the current Head of the Master's programme in Dance Education at the Stockholm University of the Arts, and also works at Academy of Music and Drama at University of Gothenburg. Ami has co-chaired the Nordic Summer University Study Circle of Artistic Research with Dr Lucy Lyons. She is a member of the Peer Review board of Journal of Artistic Research. Ami often creates stage work (solo, and collaborative) based on her embodied life story in a particular theme. Her 90 min solo performance A particular act of survival received a performing arts award at Scenkonstgalan in Sweden in 2015. Her new screendance piece Ancestor premiered at Dansfilmfestivalen in Feb 2022. Ami makes dance films and documentaries about dance. Her debut film won an honorary mention at VidéoDanseGrandPrix in Paris 1995. She walks slowly as a ceremonial, subversive act thanks to her studies with Nishikawa Senrei and work with Japanese dance in Kyoto since 2000. Her research interests are practice-led and concern gender codified movement practice, non-hierarchical processing of global dance techniques, and auto-ethnographic accounts from within the practice. Her PhD thesis has the title Suriashi as Experimental Pilgrimage in Urban and Other Spaces.



Track 2 – Boundaries

Laura Kolbe - University of Helsinki

From Socialist Capital Cities to Neoliberal Metropolises: Transformation of Urban Symbols, Identities and Histories in Central and Eastern Europe after 1989

Laura Kolbe, Ph.D. (Helsinki) professor of European history at the Department of History, University of Helsinki. She is author of Helsinki, the Daughter of the Baltic Sea, editor of Finnish Cultural History I-V and co-editor of the series History of Metropolitan Development in Helsinki - post 1945. Dr. Kolbe's research is in Finnish and European history, urban and university history, national and class history. Her latest research deals with urban governance, city halls and municipal policy making

in Helsinki and Scandinavian capital cities during the 21st century. Kolbe is founder and chair of the Finnish Society for Urban Studies (2000). She was the International Planning History Society's (IPHS) Conference Convenor in 2000 and President of IPHS in 2007-2012. She is currently the chair for History Committee of the City of Helsinki.



Track 3 – Buildings

Paul Emmons - Washington-Alexandria Architecture Center of Virginia Tech

Betwixt and Between: Architecture's Mercurial Liminality

Paul Emmons is a registered architect and the Patrick and Nancy Lathrop Professor in Architecture at Virginia Tech where he is Associate Dean of Graduate Studies for the College of Architecture and Urban Studies. Emmons is based at the Washington-Alexandria Architecture Center and chair of its PhD in Architecture and Design Research program. He earned a PhD in Architecture from the University of Pennsylvania and a Master of Architecture from the University of Minnesota. His research on design practices focusing on architectural drawing has been presented at venues around the world. His published work includes the book Drawing Imagining Building: Embodiment in Architectural Design Practices (2020) and coedited volumes: Ceilings and Dreams: The Architecture of Levity (2019), Confabulations: Storytelling in Architecture (2018) and The Cultural Role of Architecture (2012)

Track 2 | BOUNDARIES

Global networks, territories, cities, and various spaces of interactions are transforming and hence the boundaries between people and objects, spaces, and different relational dimensions are challenged.

How can we take account of these changes on the larger scale? How are these spatial realities adapting and changing with respect to the current challenges (e.g., digital and climate-neutral transitions)? We seek contributions addressing strategies and their spatial territorialization, aiming to understand how transitions are concretely realized and how they change territories, objects, and relations with human beings.

Design and infosphere projects and communicative artifacts in the fourth revolution

Serena Del Puglia, Francesco Monterosso - University of Palermo

ABSTRACT

With the ever-growing dominance of the Information and Communication Technology (ICT), we have been observing, for many years, the distortion of the entire human experience and of our society, which increasingly depends on intangible goods and services based on information. Interaction with information and technologies distorts the daily experience, also in the individual's life, acting on the profound sense of personal and collective identity. Floridi (2017) calls it a scientific "fourth revolution" (after the Copernican, Darwinian and psychoanalytic ones) and he thinks that it is "creating" a new world dominated by information in which humanity can enter, together with other agents, and in which the separation between the "real" world, offline, and the one opened by ICT, online, is getting smaller and smaller.

Within this scenario of digital transition and hybridization, there have been several transformational thrusts in the world, for some years now, driven by an original mix of technological, social and cultural innovation. Many of these belong to the domain of design in its most contemporary and broadest sense, and move on a border territory, certainly transdisciplinary within which the degree of complexity always becomes higher.

The transformative process implemented by the increasingly widespread awareness of the collective and relational dimension of the infosphere (Floridi, 2017) therefore opens up new and more challenging scenarios for design and its intrinsic dynamics of change and innovation. On the one hand, "the transformation of digital technologies from commodity to utility, on the other, our living in the two worlds - the real and the virtual (Lanier, 2017) - now collapsed in an osmotic way, impose a new right of citizenship in the contemporary world" (Bollini, 2019-2020, p. 59). In this experiential continuum, we are witnessing the overcoming of the human-centered approach in the direction of a new inclusive dimension of the project that places at the center not only people, but all informational agents (natural and artificial), all protagonists on an equal footing in participatory design processes.

The contribution is articulated within a theoretical framework which is followed by some innovative emblematic design experiences that enter into strong correlation with these issues (Floridi, 2017, 2020).

KEYWORDS

infosphere; fourth revolution; design and data, datapoiesis; connected heritage; digital humanism

1. Introduction

Technology is radically changing the world. We constantly use the word "revolution" to describe the powerful and massive transformation that Information and Communication Technology (ICT) is bringing on the different aspects of human life and its habitat. According to Luciano Floridi, the responsibility for the revolutionary changes we are experiencing should not be given to a specific technological product (computer, internet, etc.), but to the information processes which, so far, have historically developed "slowly" together with human beings. Floridi (2017) calls it a scientific "fourth revolution" and he thinks that it is "creating" a new world dominated by information - the infosphere - lived by many information technology agents. "We are information bodies (inforg), mutually connected and part of an information environment (infosphere), which we share with other information agents, natural and artificial, that process information in a logical and autonomous way" (Floridi, 2017, p. 136, self-translation). Not cyborgs incorporating technologies that can improve or increase their capabilities, but hyper-connected entities and "semantic engines" that create a new sphere of interaction in which humanity can enter, together with other agents, and in which the separation between the "real" world, offline, and the one opened by ICT, online, is becoming smaller and smaller.

To define this new dimension, Floridi uses the neologism *OnLife*, a condition that represents the hybrid nature of our daily social, communicative, work and economic experiences, perennially connected in a continuous relationship between material and concrete reality and immaterial and interactive reality. This condition subverts our frames of reference and forces us to rethink new conceptual tools to "decode" and "recode" this new world.

2. From *philosophy as conceptual design to semantic and datapoietic artifacts*

According to Floridi, one of the new conceptual tools to "decode"/"recode" this new world is philosophy, but it must come out of its self-referentiality to land towards a more pragmatic dimension, or a design-oriented philosophy: "philosophy as conceptual design" (Floridi, 2020). The information society is more appropriately conceived as a "neomanufacturing" society in which information is a "raw material" that is simultaneously produced and consumed. In this society it is fundamental to focus on the "knowledge of doing", that is a type of knowledge possessed by those who know how to design and produce a new kind of artifacts, that is, "those who know how to create, process and transform information" (Floridi, 2017, p. 123, self-translation). The keys to understanding this situation and developing a sustainable infosphere lie not only in communication and transactions, but in the creation, design, production and management of information.

Here it is very interesting the strong connection to the design theories and culture, emerged, in recent years, from the scientific debate around the design disciplines. The reference is to the socio-technical-cultural change induced by a renewed value around the "knowledge of doing" that origine the debate on digital craftsmanship (Sennet, 2012; Micelli, 2011), the makers movement (Anderson, 2013), open source and co-design culture (Ciuccarelli, 2008), etc.; up to the "we are all designers" (Manzini, 2015), that is "a world in which everybody constantly has to design and redesign their existence" (Manzini, 2015, p. 1).

This hybrid nature of us "inforg", related to the importance of "knowledge of doing" become for Floridi the characteristic elements of an innovative and revolutionary approach to philosophy; a new "practical" philosophy that is rooted in the resolution of Platonic "dogma", that is, in overcoming the

dichotomy between *techné* and *epistème*, practical knowledge and theoretical knowledge, and in the consequent shift of what Floridi characterizes and defines "philosophy as conceptual design", towards a "constructionist" approach: "user-based knowledge approach [...] to manufacturer-based knowledge approach" (Floridi, 2020, pp. 97-98). A "constructionist philosophy" that opens to disciplinary approaches specific to other fields of knowledge (computational theories and practices in particular)¹, including design, which not only "know", but also "build" the object of their interest. "Then to know a phenomenon, an artifact or, in our case, to obtain information and be able to realize it, means to be able to produce and reproduce, compose and decompose, build, assemble and dismantle this phenomenon, artifact or information [...] So that knowledge is possible, *mimesis* must be replaced by *poiesis*" (Floridi, 2020, p. 109). For Floridi, therefore, the philosopher, like the designer, is "a constructor, a poietic agent" (Manna, 2021), that can create a new kind of "constructionist" artifacts, material or immaterial, that are able to generate new knowledge: the "semantic artifacts" (Floridi, 2020, p. 110). These artifacts, conceived through the constructionist approach or *philosophy-design*, produce many contents (not only philosophical, but also scientific, cultural, religious, artistic, etc.) that, together, constitute what Floridi defines as "semantic capital", that which gives meaning to "our identities, lives, experiences, interactions and representations of the world" (Floridi, 2020, p. 134, self-translation). To do all this, philosophy must be "conceived as the highest form of conceptual design" (Floridi, 2020, p. 122, self-translation); a *philosophy-design* capable of elaborating the concepts necessary

to improve our faculty of understanding, helping us to know, build and use the next (digital) or present (analogic) generation of "semantic artifacts" (information).

Undoubtedly belong to this kind of "semantic" and "informational" artifacts, a series of projects, research and experiments that, for some years, carry out two Italian researchers/teachers, designers/artists and hacktivists: Oriana Persico and Salvatore Iaconesi. It is a new kind of hybrid and "boundary" artifacts (analogic and digital), that Iaconesi/ Persico define "datapoietic", or objects (material and/or intangible) generated by data and computation, which enter into strong relationship - in reticular, inclusive and peer-to-peer form - with different entities or agents strongly interconnected with each other (nature, people, communities, institutions, objects, data, artificial intelligence, software, etc.). "They are not only technical artifacts, but also cultural and existential ones, as they dive deep into contemporary culture and in human perception and understanding, creating new opportunities for social imagination" (Iaconesi & Persico, 2019).

2.1. Case study | U-DATInos

In relation to the themes and issues presented in the previous paragraph, the *U-DATInos-Sensitive to water* research/project experience (built in Palermo between 2019 and 2020) is particularly interesting and innovative. *U-DATInos* (from ancient Greek "*Aquatic. Consisting of water. In water*") is an "info-aesthetic" and a "fragile technology" artwork, halfway between a "meditative" art installation and an augmented design artifact (Figures 1-2).

1 Here reference is made to *Constructionism theories* by S. Papert, which proposes the activities development to constructing artifacts that act as learning facilitators. "According to Papert, children, but also adults, learn

better when [...] build their own projects, [passing] from a status of "consumers" of information, to that of knowledge producers" (Capponi, 2008, p. 47, self-translation). Today, Papert's pedagogical model is widely used in many educational innovation activities.

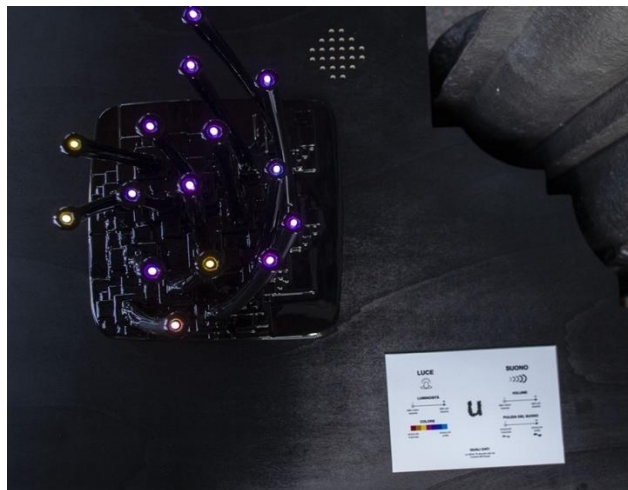


Figure 1 - 2. *U-DATInos*. Iaconesi and Persico. Credits: HER srl

A new, fragile form of digital life that only survives if it is constantly fed by data about a river (Oreto River in Palermo) collected by *Custodi dell'Acqua* - water keepers (citizens, researchers, activists, etc.) - and that an algorithm transforms into lights and sounds (Figure 3).



Figure 3. *"Custodi dell'Acqua"* on the Oreto river in Palermo. Iaconesi & Persico. Credits: HER srl

A new kind of life, a sort of living digital plant, belonging to an unusual ecosystem, within which coexist, in a new delicate balance, all the actors strongly interconnected with each other: the well-being of the river, the Custodians and *digital plants*². It is an innovative kind of hybrid "datapoietics" objects, that, in a strongly and bi-unique relationship of coexistence environment-society, are configured as floridian "semantic artifacts" that mix technology (data, sensors, cards, etc.), innovative design practices and processes (speculative design, design for Future, etc.) and new cultural approaches based on open source, collaborative and active citizenship logics. The project³ involves a sensitive area of the city (south-east coast of Palermo and river Oreto) on which there has been for several years the *Ecomuseo Urbano Mare Memoria Viva* (Urban Sea Memory Living Eco-museum), a young and dynamic institution that, with innovative managerial approaches, has become a cultural, educational and social presidia, crucial for the territory. As Settis (2002) says, a "marker of identity" and fundamental connection hub between city and community; a sensitive and

2 "If nobody "waters" it providing fresh data, or if the status of the river's health becomes too constantly critical, the plant respectively dies (its sounds and lights fading progressively away) or assume alarming (eg: red) critical sounds and lights (for example, the sounds emitted by the plant progressively become "dirtier" and noisy as the critical condition of the river progresses, up

to the point when they become unbearable)" (Iaconesi & Persico, 2020).

3 The project is supported by Direzione Generale Creatività Contemporanea (General Directorate for Contemporary Creativity) of Ministero per i Beni e le Attività Culturali e per il turismo (the Italian Ministry of Culture), through its Creative Living Lab II edition programme.

alive place like the memories it preserves and regenerates, which lives of “proximity” and “care” (Manzini, 2021, p. 75) and which establishes strong relationships with the inhabitants who actively participate in its conception, its growth, its development. They become "guardian", like the Custodians of the Oreto River Water (*I Custodi dell'Acqua*), a group of citizens, students, researchers and activists who, amid a thousand difficulties (in the midst of a pandemic!), organize themselves in an innovative and poetic exploratory adventure to try to "give voice to the river". A new voice that comes thanks to a series of sensors that collect data and information on the health of the river (Figures 4-5).

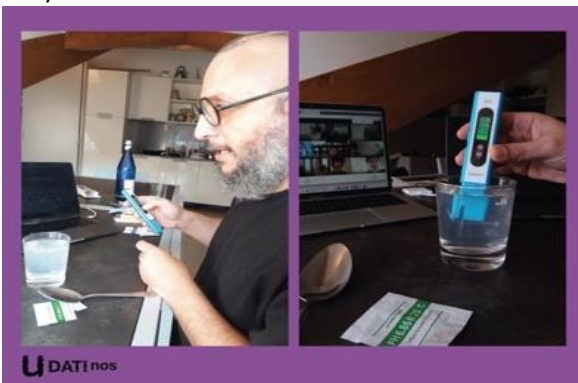


Figure 4. Data collection kit. Iaconesi & Persico. Credits: HER srl

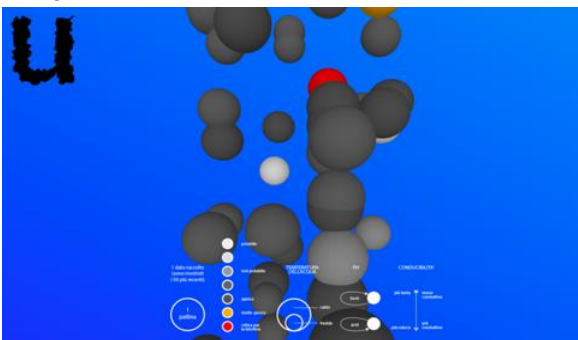


Figure 5. Data visualization. Iaconesi & Persico. Credits: HER srl

These data feed the installation within the Ecomuseum, thus allowing the experience of perception and understanding of a complex phenomenon of our environment: the dynamic state of health of the river and its ecosystem. Through data, computation and algorithms, the social and psychological

activation triggered by design and art, the project has managed to bring together Science, Technology and Society (Iaconesi & Persico, 2020), in an absolutely innovative, original and contemporary form. “On the Oreto river, data unite people in acts of self-organization, conviviality, social imagination and adventure” (Iaconesi & Persico, 2021b, self-translation).

But there is more. The philosophy behind the project is extremely interesting; that is, an absolutely innovative approach in data collection/processing/use that transforms and reverses the usual "extractive" practice into a more ethical and human generative practice, based on relationships, reciprocity and collaboration. This reversal is driven by art and design that allow data and computation to transform from dry technical matter to existential matter. As the duo Iaconesi/Persico (2021b) states, art and design "can take data and bring them into the midst of society, removing them from isolation, giving them to people and organizations so that they can be part of their lives".

We are, therefore, faced with a possible, innovative way, in which algorithms, artificial intelligence, big data and Internet of Things (IoT), generate for people not only efficiency, but also sense and poetry. A new season – that Iaconesi imagines as a kind of neo-renaissance of the "made in Italy data-driven" – in which generations of new artifacts will populate our habitats. New semantic, datapoietic, informational and constructional artifacts, capable of activating thought, conveying and producing meanings, or – as Enzo Mari says (2011) – “producing intelligence”.

3. Information graphic (Infoviz), data visualization (Dataviz) and semantic artifacts

"The utopia, which pushed and guided the noble fathers of the web, arises from an inclusive and almost thaumaturgic vision of technology and its use, which is transforming

the use of culture and cities as well as interpersonal relationships, all based on survey, exchange and conditions of data, in which the intangible exchange commodity is knowledge"(Bollini, 2019-2020, p. 51, self-translation).

The *Era of datafication*, formulated in 2013 by Cukier and Mayer-Schönberger, defines a reality in which the dominance of the web and the exponential increase in data has generated the need for new tools for the representation of information, the result of which, over time, it has been infographics, static and dynamic mapping, timelines and the visualization of archives or scientific data. This is possible through the incredible processing power of the visual system, which through the decoding of diagrammatic representations - which collect and describe in detail huge amounts of data produced even on a daily basis - leads to the understanding of complex, emerging and sometimes abstract problems. The possibility of narrating through the use of information design tools is now a widespread and shared practice among communication designers, a practice that allows complex knowledge to be made accessible to an increasingly large number of people. This objective, linked to the need to make vast deposits of data strictly connected to current searchable and understandable events, refers in part to the technical rigor of mathematical and statistical sciences, in part to the narrative skills of the human and social sciences, proposing the achievement of a compromise between the technical-scientific disciplines and the humanities ones, based on the relationship between the visual representation of information and its secular dissemination (Angari, 2019-2020, p. 217).

Information design⁴, defined by Wurman as the discipline capable of creating the meaning of information, communicating and representing it (1990), is the branch of graphic design engaged in searching for the visual balance between textual and iconographic data, in an attempt to communicate with clarity of more or less complex information to those who need to understand and use them (Morelli, 2012).

The design of such artifacts implies for information designers the ability to operate in a directorial manner, facilitating the convergence between the technical-scientific skills necessary for the project, making sure that the rules that allow the message to be conveyed to the context efficiently and adequately are respected and ensuring that the user can independently decode the contents which, according to Stoll (2012), passes through the creation of a metaphor that not only transmits knowledge, but ensures that the reader takes possession of it (Angari, 2019-2020, p. 226).

Starting from these considerations, it is possible, through the analysis of some exemplary design experiences, to investigate the results of proposals which, by crossing technological-scientific languages with visual and narrative experiments, testify to the richness of ideational transpositions emerging from the relationship between a physical context, an increasingly large dimension of intangible data and the dimension of use.

These researches involve a vast heterogeneity of actors (corporate partners, metropolitan governments, individual citizens), within an indispensable inter and transdisciplinary perspective, involving many professionals with a high degree of specialization (computer engineers, designers, urban planners, experts

4 Information visualization (InfoVis) is currently one of the most pursued visualization disciplines as, unlike the others, thanks to a close hybridization with information technology, it allows the analysis and processing of large deposits of data whose visualization is placed in

interactive visual interfaces (Manovich, 2011). The term data visualization means any form of visual representation of information that involves the use of graphical representation as a tool to provide visual insights into data, whether static or dynamic (Masud et al., 2010).

in computer science and computer networks and in the development of urban cyber-physical systems based on urban big data).

3.1. Case study| Massachusetts Institute of Technology (MIT)_SENSEable City Lab. *Desirable Streets* (2021)

SENSEable City Lab⁵, through an extensive team of professionals, reads urban phenomena, investigating their complexity, and constantly works on the visual rendering and on the graphic elaboration of maps able to represent the dynamism of the phenomena. The challenge that arises is to use communicative artifacts aimed at defining possible directions in design actions, which place the multiple players in an actions' synergy.

The design potential of data determines a peculiar design condition for the information age and it's fundamental in terms of contribution to public utility, as demonstrated by the following case study, which focuses on the use of data and their visual representation for the democratization of complexity. The focus of projects like this is not the mere transmission of information, but the experience that people make of it.

Different declinations of visual mapping, which connect a real physical-geographical context to the multiple available levels of information, can feed citizens participation, awareness, identity processes, in support of individual choices and project actions; on the one hand with the aim of offering the citizen extremely articulated and updated services, on the other with that of activating dynamic and open views oriented to the knowledge of the characterizations and relationships of contexts, crossing descriptive and narrative

methods, technical languages, artistic experiments.

Today, the construction of these communicative artefacts passes through the smart technologies⁶ that connect a real physical-geographical context to multiple levels of information on paths, flows, recurring and exceptional elements, signs and traces, fueling participation and awareness with respect to the entity and complexity of socio-economic phenomena and thus becoming an effective support for individual choices and project actions (Trapani & Del Puglia, 2020).

These artifacts are able to communicate the dynamism and the relationships between the physical material elements and the immaterial forms that characterize the contexts. Furthermore, the connection and intersection of data on different levels of information offer the possibility of interpreting the phenomenology of the environments to which we are part, identifying points of criticality of the systems and tracing their causes, offering the possibility of imagining and planning actions to improve the contexts themselves. Information design therefore finds itself seeking a balance between new methods of collecting and disseminating data and new actors involved in the analysis and interpretation processes; the open and accessible possibility of visual representation of data becomes the terrain of unprecedented visual syntheses of complexity.

The *Desirable Streets* (2021) project of the SENSEable City Lab, starting from the analysis of thousands of pedestrian trajectories obtained from GPS signals on the streets of Boston, builds an "index of desirability" of citizens. The experience of walking around a

5 Directed by Carlo Ratti, in collaboration with the City Design and Development group - Department of Urban Studies and Planning, and the MIT Media Lab, the SENSEable City Lab was created to study and anticipate how digital technologies are changing the way people live and their implications on an urban scale.

6 Innovative digital technologies, applied to various production and operational processes, enable a strong

interconnection between the resources used. They range from the Internet of Things, Big Data and Cloud Computing close to the world of Information Technology, to those closest to the world of Operations such as collaborative robotics, augmented and virtual reality, 3d printing. https://blog.osservatori.net/it_it/smart-technologies-quarta-rivoluzione-industriale.

city, in fact, is influenced by the services and visual qualities of the surrounding built environment rather than by the choice of the shortest route (Miranda et. al., 2021). The index captures the willingness of pedestrians to deviate from their shortest path and provides a measure of the landscape and experiential value provided by different parts of the city and contexts. The use of computer vision techniques combined with georeferenced data to measure the "street environment", provides significant data for identifying those characterizing elements that make some routes desirable rather than others: better access to public services such as parks and green spaces, the presence of easier and more enjoyable sidewalks, the provision of more comfortable and pleasant urban furnishings, the less complex facades of the buildings that surround them and the diversification of the architectures (Figures 6-7).



Figure 7. Points from the OSM streets network used to query the images from Google Street View. Screenshot from the website <https://senseable.mit.edu/desirable-streets/>

These results, by strengthening the understanding of the value that the built environment brings to pedestrians, can have an important impact on the ability to design more functional and enjoyable environments and contexts in the future, fielding a new idea of the city, determined by sensations and desires of citizens.

4. Conclusions

The interdisciplinary nature of the information designer, as well as his ability to discover new relationships between signs, things, actions and thoughts (Buchanan, 1992), and therefore not only the ability to represent quantitative data, but also to visualize complex information through the visual narration of qualitative values and data (Scagnetti et.al., 2007) entails new challenges in the construction of a narrative that facilitates effective and intelligible access to information (Angari, 2019-2020). The centrality of the contribution that the disciplines of design, and of infodesign in particular, can give to the debate on the subject suggests a necessary impact also on the training paths of new designers and specific skills able to pass from the sphere of material production (product) to the sphere of immaterial production, such as interaction, experience and service planning. A transition, from hardware to software, already underway for some years in the culture of design (Meyer

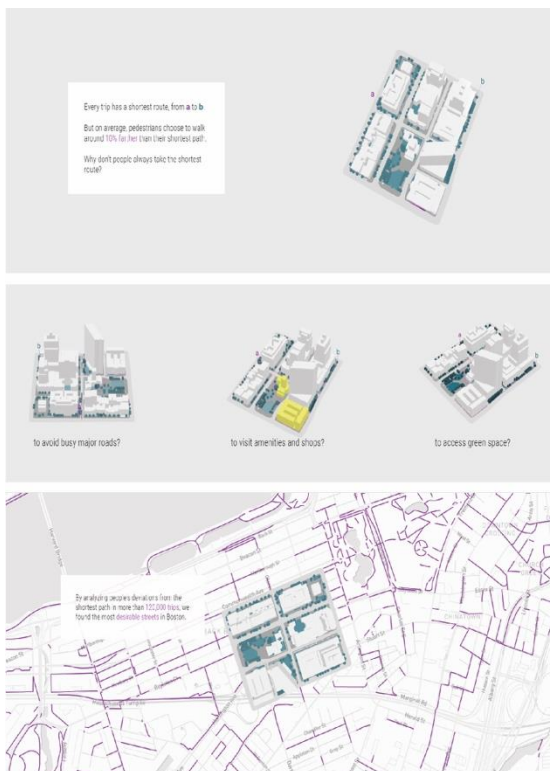


Figure 6. Project hypothesis. Screenshot from the website <https://senseable.mit.edu/desirable-streets/> (author's collage)

& Norman, 2020), capable of questioning how professional design practices can be reconfigured to accommodate a more complex vision of social change.

This vision combines not only different disciplines and practices, but also society as a whole. Here again lies the potential role for design, which can rediscover its humanistic and social soul and act as an interconnector between multiple types of agents. This is also an evolutionary opportunity for design education practices, in which this modality can be implemented directly into the learning process, by opening it up to the city, the territory and its inhabitants. Which brings on the next relevant pattern: the one of

participation, inclusion and social engagement (Iaconesi, 2017).

Acknowledgements

The contribution is the result of a common reflection by the authors. Specifically, the paragraphs 1. *Introduction*, 2. *From philosophy as conceptual design to semantic and datapoietic artifacts*, 2.1 Case study|U-DATInos are to be attributed to Francesco Monterosso; the paragraphs 3. *Information graphic (Infoviz), data visualization (Dataviz) and semantic artifacts*, 3.1 Case study|Massachusetts Institute of Technology (MIT)_SENSEable City Lab. *Desirable Streets* (2021), 4. *Conclusions* are to be attributed to Serena Del Puglia.

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