Creating a research center in today's society

Data, AI, territories, communities, knowledge and rituals for a New Living

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Abstract english:

What is a research center? How does its role change in the age of data and computation? The article describes the theoretical and conceptual foundations that in 2020 led to the redesign of the research center HER - Human Ecosystems Relations, founded in 2013 by the artist duo Salvatore Iaconesi and Oriana Persico, to create a new type of organization capable of positioning research at the center of society, using art as a strategy and data to create sensitivities toward the complex phenomena of our globalized and hyper-connected world - from climate change, to migration to poverty. HER: she Loves Data, the new organization whose model is described, assumes as its main mission the creation of the Archive of Rituals of the New Living, embracing data and computation as existential and cultural boundaries of contemporary human beings and societies.

Keyword english:

Research, Knowledge, Education, Participation, Sociology of Science, Anthropology of Science, Technology, Data, Computation, Artificial Intelligence,

# Introduction

Our society has radically changed during the last few years, and we did as well. Our intimacy and the ways we spend time together have changed. The ways in which we communicate and relate. The ways in which we perceive the world, try to understand it and deal with it. The ways in which we learn and interact, and in which we share our knowledge and information.

We are now in a globalized (Beck, 1997) and hyperconnected (Shaviro, 2003) world.

The existences of human beings and of the rest of the environment and its actors (animals, plants, microorganisms, the rest of the biosphere, but also actors with legal personality and computational actors) are increasingly in close and intricate relationships with each other, organized into interconnected processes, which can be considered separately only at the cost of not being able to deal with the complexity that is required for their governance (Di Felice, 2019).

Our existences and our lives depend on – and are increasingly mediated by – data and computation: our Onlives (Floridi, 2014b) and are increasingly connected to the infosphere in which we are immersed ( Floridi, 2014a).

The phenomena we experience can take place anywhere and anytime in the world: they roam the entire planet and beyond (eg.: the images and data coming from our human devices on other planets, or in space). To be able to experience these phenomena and to deal with them, means interacting with enormous quantities and qualities of data and computation.

But the current data and computing industries are extractive industries. Like all extractive phenomena of our present and past, they have serious implications for the environment, society, rights, democracies, freedoms, and the ways in which technologies can be used to exert power over us, our bodies and our psyche. (Iaconesi, 2017)

If, on the one hand, we find ourselves forced to continuous protective actions (privacy, censorship, algorithmic biases), on the other hand we need enormous quantities and qualities of data and computation in order to exist on the planet. (Iaconesi, Persico, 2019a)

This is a tragic condition our times, whose two aspects pull in dramatically different directions, disorienting us. Let’s just think about, in the current pandemics, about data, which is simultaneously used to violate us and to save us, in a classical Double Bind constraint. There seems to be no exclusively technical solutions to this tragic condition, and the ways of dealing with it are positioned in the nexus of Science, Technology, Art, Design, Psychology, Philosophy, Society. (Iaconesi, Persico, 2016b)

A different type of need emerges: to reposition ourselves in a novel cosmology, along an epistemological evolution, to achieve new possibile experiences and performances in our ecologies. The opportunity for these transformations come from new possible alliances with computational agents: not extractive anymore, but generative, with us.

These new alliances must be designed: ecologically, in society and in the environment we inhabit.

To do this, we have started to research a possible evolution of what we now would call “research center”, to study and reinvent the rituals which we take part in to live on our planet.

This article tells the story of this process, to try to invent such a new form of research center: *HER: She Loves Data*.

# Towards a Theory of Research Centers in Contemporary Society

In the Treccani encyclopedia a “research center” is defined as that “organism or entity that promotes research and coordinates studies about specific topics”. In Wikipedia “a **research institute** (or **research center**) is an organization created on purpose to operate and to promote research in one or more fields of science”.

These definitions presume that the scientific “professions” and “methods” are concrete entities that are already well present and positioned in our society. But “research center” is a recent concept in human history, although various places of a more remote human past already had these characteristics.

Bayt al-Ḥikmah (بيت الحكمة‎), for example, the House of Wisdom, also known as Baghdad Great Library – an important intellectual center in the city during the Abbasid caliphate in the golden islamic age in the VIII century –, closely resembles a research center: it hosted and translated the most advanced research of those times; it produced original contributions through its residents in medicine, surgery, alchemy, physics, mathematics, astrology, paper production, philosophy, literature; and it hosted large research infrastructures, like the astronomical observatories.

To find more structured entities we have to proceed along the years, arriving at the scientific revolution after the Renaissance and, then, throughout the XVIII century with Illuminism: London’s Royal Society in 1660 and the Académie Royale des Sciences in France, in 1666.

Romanticism, as a reaction to Illuminism, saw the rise of Schelling’s Naturphilosophie; the study of cosmologies and cosmogonies; the new science of biology; the investigation of conscious and unconscious mental states, and of what was “normal” and “abnormal”; the study of the secret forces of nature, such as electricity, magnetism, galvanism. Goethe’s observation countered Newton’s works on optics.

Science mutated in this way according to opposing cycles of transformation and evolution, also changing the ways in which human beings formed relationships in scientific research, organizing it.

After Romanticism, the evolution of science and of its positioning in society and in our psychology passed through the Industrial Revolutions, World Wars, XX century’s Globalization and the Digital Revolution in the beginning of the XXI century.

Each of these periods has its own characteristics which resonate in their cultures, for example through literature’s and cinema’s monsters and characters of the different times: Dracula and steam; Frankenstein and the forces of electricity and of life; Charlie Chaplin, first with industry and then with the Great World Wars. With Zombies a peculiar transformation arrives: daily lives and ordinary human beings become the monsters, in the shopping center, with consumerism and Globalization. Information Society brings the monster of Artificial Intelligences and computation in general.

Floridi’s (2014a) 4 revolutions resonate the same concept: the social positions and geometries of sciences transform. The illuminist character of the copernican revolution dismantles the anthropocentric understanding of the universe. Romanticism’s reconnection with Nature gives Darwin the opportunity to bring human beings and animals closer together in the process of natural selection. Freud decrees the end of the integrity of human being – divided between conscious and unconscious – between the Industrial Revolutions and the Great World Wars.

From the great wars to the Digital Revolution, Turing shows how intelligence is not only human.

Each of these revolutions bring new conceptual instruments which can be used to understand ourselves and the world we live in, and we can use them in science, philosophy, art, and in all the other disciplines and their interconnections.

In this scenario, the observation of the current conditions of humanity and of the planet – hyperconnected, globalized and, thus, fully pervaded by complex issues at all levels of society and of the environment – gives us a hint about what these new instruments and concepts for these times are: data and computation.

Infact, the availability of enormous quantities and qualities of data – and of the computation which needed to collect, process, represent and interpret them – is the necessary – but not sufficient – condition to be able to know, to experience and to be able to confront with complex issues such as climate change, health, poverty, education and the other planetary issues which we face (for example with United Nations’ Sustainable Development Goals[[1]](#footnote-0)).

Thus, it is not entirely wrong to affirm that our survival on planet earth is connected to data and computation, that

Non è quindi sbagliato affermare che la nostra sopravvivenza sul pianeta è connessa a dati e computazione, which in fact are transformed: *they move from being technical matter, becoming an existential one*.

On top of that, data are characterized by tensions and paradoxes:

* They are the protagonists of the largest extractive phenomenon on our planet and, as such, they live in separation: they are extracted from our existence, our bodies, our behaviours and from the environment, and they are used in laboratories, industries, and in the governance of their processes.
* They come in enormous quantities, qualities and interconnections. Counting them is not interesting anymore, as it brings small differentiation. On the contrary, the possibility to discover forms and recurring patterns in them and in their interconnections brings enormous value, as it enables governance of complex phenomena. This is the role of Artificial Intelligence.
* They are presented as objective, indisputable truths. “Data says this.” As such, they are used to enact rigid, lineas, industrial procedures that are not able to deal with the extreme diversities of human beings, biology, environments, cultures and their relations. Instead, it is true that data are highly ideological entities. To be able to measure a phenomenon, we must first construct an ideology about how the phenomenon can be measured, about what are the important things to be measured, and how, through which variables, parameters, expressions, and using which sensors and practices. The equation according to which data is supposed to be a measure of a certain phenomenon is in itself a complex phenomenon which does not have a single, or simple, or linear answer. Ecosystems’ complexity can be dealt with through the coexistence of multiple perspectives, not through consensus or through those mono-cultures that, for whatever reason, is dominant or hegemonic at a certain time.

To be able to have the availability of many types of different data – about people, behaviours, processes, environment, biology, culture, etx – a tragic paradox takes form:

* On the one hand, a protective modality is needed (for example through privacy laws), to defend people’s rights and liberties, their health, environment, information, education, and so on.
* On the other hand, data must be freely accessible and usable in enormous quantities and qualities, to be able to confront the complex issues that put our existence at risk (the recent issues of the COVID19 pandemic are striking proof of this).

This is a tragic condition: it has no solution. At least none in the sense of a univocal, technical one. This is a type of problem that cannot be addressed in an exclusively engineering sense. This type of problem is of an existential and cultural type, and to face it it is necessary to have the possibility of dealing with systems that allow paradox, incompleteness, indeterminacy, presence / absence, relationship and all its consequences.

Therefore, an idea of ​​Science in Society is needed that is capable of adopting the approaches, methods and tools of Philosophy, Psychology, Art and Culture among its strategies, not as a mere ornament. The research centers that carry out this type of science should therefore have a geometry and a very different structure from the current ones: both internal and in the relationship with society and the environment. is able to adopt the approaches, methods and tools of Philosophy, Psychology, Art and Culture among its strategies, not as mere ornament. The research centers that carry out this type of science should therefore have a geometry and a very different structure from the current ones: both internal and in the relationship to society and the environment.

# Sociologia della Scienza e Antropologia della Scienza

Engelbart (1968) stated:

«Though the primary research goal is to develop principles of analysis and design so as to understand how to augment human capability, choosing the researchers themselves as subjects yields as valuable secondary benefit a system tailored to help develop complex computer-based systems. This "bootstrap" group has the interesting (recursive) assignment of developing tools and techniques to make it more effective at carrying out its assignment. Its tangible product is a developing augmentation system to provide increased capability for developing and studying augmentation systems.»

This type of *bootstrap* process is very interesting, and one can imagine making active protagonists not only researchers, but also students, publics, organizations and institutions, so as to obtain an inclusive and participatory that brings in from the very beginning the collaboration of more actors in society or in the organization.

Disciplines such as Sociology and Anthropology of Science can help us to design organisms whose life is the complex result of the lives of so many different types of actors.

Sociology of Science studies the socio-cultural processes that are constitutive of scientific systems, as well as its interactions with other systems like schools, institutions, innovations, industry, territories[[2]](#footnote-1).

This influences:

* the choices of the subjects of research;
* the conceptual models of research, and the vision of the world which is a direct result of scientific conceptualization, observation, analysis and communication:
* the internal and external objectives of research;
* And the pragmatic domains of research, which describe what it means to “research”, in terms of the socially recognized practices.

Anthropology of Science uses a different approach, which is expressed, for example, in Bruno Latour’s ways of looking at it: observing science «in action» is very different from observing science’s «black boxes», because we can attribute a role to it only when we are able to explore its dynamic history, contents, evolutions and relations (Latour, 1987).

Applying the methods of Anthropology and Ethnography to Science allows to reconstruct the cultural, symbolic and psychological dynamics, as well as the dynamics of the boundaries of collaboration and conflict, by dedicating attention to those actors that play roles in these dynamics and in their implications, together with «information about sources of funding, the career backgrounds of participants, the citation patterns in the relevant literature, the nature and origins of instrumentation and so on.» (Latour, Woolgar, 1986, 278)

The objective is to dive into the ecology of nature/society (Latour, 2015), to participate in science (Latour, 1990) according to varying arrangements, which correspond to a diversity of epistemological approaches.

If «ecology [...] is not the irruption of nature in public space, but the end of *Nature* as a concept which is capable of synthesizing our relationship with the world, and of pacificating it» (Latour, 2015, 50–51), then all the actors of the whole nature/society, in their incredible diversity – between human, non human, legal, computational … – must be considered as potentially active and interactive actors (and, thus, significative) in science, according to recurring patterns and forms that we must learn to recognise: the new cosmologies of science.

# The case of “HER: She Loves Data”

HER: She Loves Data (in the following: HER), is a small, private research center which in its first version was founded in London in 2013, under the name of HE – Human Ecosystems. The occasion for its creation was provided by the possibility of exploiting the intellectual property for a technological platform by the same name that had been created in an EU project of the FP7 programme of the European Commission. Human Ecosystem (both software and research center) was born as a platform which was able to collect large quantities of data from the social major social network in those times (Twitter, Facebook, Instagram) so that they could be used in territorial and community analysis and in citizen science projects.

These large scale data collection processes has a few peculiarities:

* They formed *commons*, that is a resource that could be used in common by researchers and communities only after having established relationships and codes between the two about this usage; this was part of the methodology, and it was applied through the software platforms; (Iaconesi and Persico, 2016b)
* They contributed to shaping the cultural processes that took place among the members of the communities together with researchers, technologists, artists, designers, educators, organizations and institutions; these data were used in workshops, *near future design/speculative design* participatory processes, and collaborative processes of policy design;
* The results of these processes assumes aesthetic and communicational forms, such as works of art, data visualizations, interactive and immersive interfaces, which composed the *Realtime Museum of the City*, which was a place that was created and whose content was produced through the practices of participation in the city/territory, by representing the needs, desires, expectations and imaginaries of the communities under the form of cultural artifacts;
* The strategic and operative model of this type of operation lay its foundation on the possibility to use data to capture the essence the Relational Ecosystems (among people, organizations, institutions, devices, services and the environment), and to use computation to analyze and represent it, by describing interactions, exchanges, communications, so that precise and inclusive interventions could not only be designed, but imagined in the first place.

This methodology was called Digital Urban Acupuncture, DUA (Iaconesi and Persico, 2016b).

DUA’s conceptualization requires the design of two concepts that contribute to the idea of data and computation as pervasive entities of nature/society that are in existential relationship with all actors, human and non-human:

* The *Third Infoscape*, which is composed by the myriads of micro-histories that are generated by small agglomerations of data, information, images, articles and reactions, taken into account in the irreducible complexity and richness of interactions; Third Infoscale cannot be describes in terms of the simple geometries, but only according to the myriads of the sub-narratives which emerge from all these data, information and interactions; (Iaconesi, 2017)
* *Ubiquitous Commons*, which is a cultural, technological, social and legal protocol according to which the identities of the actors of ecosystems can have different modalities – individual, anonymous, collective, temporary, transitive and remixes of these –; in the ecosystems that are composed by the relations and interactions among human and non human actors (such as buildings, companies, territories, forests…), it becomes, thus, possible for these types of identities to generate data (eg: the data which a condo building can produce, a territory, a forest, an event…), to self-represent themselves, as in an autobiography; in a similar way it is possible to attribute access to these data to different identities (eg: to the researchers of a certain research project, or to an organization). (Iaconesi and Persico, 2015)

In 2016, HE changed to HER – Human Ecosystems Relazioni – as it moved to Italy, taking its headquarters in Rome in the San Lorenzo, Pigneto and Torpignattara neighbourhoods, both because of their multicultural life and because of the concentration of designers, artists and of the largest part of the city’s undergrounds and subcultures.

This positioning in the city profoundly contributed to the idea of a research center that does not live in the separation of the laboratory, but, rather, that promotes a concept of science that is in the dynamic center of society, and fully participates in it. This is demonstrated by a series of permanent projects of the center:

* *HER: She Loves San Lorenzo[[3]](#footnote-2)*, a festival of arts, data and artificial intelligence in which the entire neighbourhood transforms into an art exhibition whose artworks are created through data and AI, and where the mechants, the baristas, and the other inhabitants of the neighbourhood transform themselves into the curators and narrators of the artworks in the exhibit, thus creating a diffused experience in applied didactics which is highly effective;
* The *Scuola di Quartiere di Arte, Dati e IA* (Neighborhood School for Arts, Data and AI); it emerged right after the first edition of the festival and it uses the model of the carnival, in which the school operates all year round to prepare the festival’s next edition; a series of initiatives in which the inhabitants of the neighbourhood transform themselves in the artists who are capable of creating the works of art that are made using their own data, used *not in extractive mode*, but in an *autobiographical and self-representational ways*, which would be included in the exhibit; (Iaconesi, 2018a e 2018b)
* *IAQOS, Intelligenza Artificiale Open Source di Quartiere* (Open Source Neighbourhood Artificial Intelligence), a project in which the Torpignattara neighbourhood saw the emergence of a new technological infrastructure (AI, just like water, electricity and public transport before it), under the form of a new, peculiar inhabitant of the neighbourhood, young IAQOS; technology is not only a technical issue anymore, and becomes an actor with which to relate, to negotiate reality, to discuss and debate the world that each actor brings to the community. (Iaconesi e Persico, 2019b)

At the beginning of 2020, the COVID19 pandemic contributed to the perception of the urgency of unveiling new forms of “Science in Nature/Society” that are able to engage human and non human actors, and to explicitly avoid extractive processes, moving to process centered on the concept of “caring” (Iaconesi and Persico. 2016a), defined as the possibility to perceive oneself not as a center, but as one of the actors/performers of a human and non human ecosystem/network that relate and interact. Moving away from extraction, and towards ecology. Thus, *HER: She Loves Data* was born, with its focus of bringing together Science, Technology (and especially Data and Computation), Art and Nature/Society, to uncover the *Rituals of the New Living* (Rituali del Nuovo Abitare).

## Methodology and Process

The elements that are characteristic of the research center also give shape to its processes. These are:

* The approach described in “La Cura” (Iaconesi and Persico, 2016a), which is a systemic-relational one; issues are never dealt with in a way which is purely technical, but move along complex relational networks, extending eventually to the whole of society; for example, data and the research that uses them are never used solely in the separation of the “lab”, but are the object of multiple types of relations, through different actors; art and design are a fundamental part of this type of process.
* A non-extractive approach, according to which processes are not designed to extract (data, value, knowledge…), but to generate, and are intended as autobiographical and self-representational expressions of the human and non-human actors involved.
* An approach which is not oriented to consensus, but, rather, to coexistence. Processes are designed around the possibility of compresence of conflicts, not on the idea of their final resolution through forms of consensus.
* A Commons oriented approach, according to Elinor Ostrom’s definition (1990), in which the commons is not only a certain resource pool, but also the high quality relational ecosystem that is linked to it, together with the fact that the ecosystem has a code which is used to govern it.
* An human/non-human ecosystemic approach, according to which human beings are not at the center of the ecosystem (as, for example, in Human Centered Design), but, rather, part of complex relational networks together with organizations, computational agents, other actors in the biosphere, etc: Ecosystemic Design.
* A Near Future / Speculative Design approach, in which design is a participatory practice and it is dedicated to the creation of future scenarios, not only by looking through the lens of what is *technically possible*, but also through the ones of what is desirable, preferable, imaginable, or even paradoxical or mysterious, to reveal the inconsistencies and the violences of our presents, exploring together with society, critically and constructively.

The design of the research center is centered around a progressive process which, step by step, valorizes the relations that manifest themselves. At the same time, it is an open process, so that many actors can take its elements and create conflicts around them, to unveil ways for coexistence.

The following sections describe the three phases of the design process.

### Creation of an inner circle

The first phase takes place in a selected, curated community in which the quality of relations, trust and mutual knowledge is outstanding. It is tightly knit and interactions are frequent (once a week, with assignments in-between). The objective is to design the initial concept of the research center, its organizational and relational dynamics, its themes, its aesthetics, the way in which it builds its roots in a community; the outputs[[4]](#footnote-3) of this phase are listed below.

*Senses*

A set of multimedia narratives whose aim is to communicate the colors, sensations, sounds and images of the research center in an immersive, literary way.

«Stepping inside HER: She Loves Data, you find yourself immersed in a small hydroponic forest. The life of the environment, and its relation with humans generates data which we use to live better. HER: She Loves Data generates food, well-being, health, communication and knowledge to augment the capacity to inhabit both the analogue and digital spheres, establishing relationships and connections between people, communities, territories, organizations and institutions.

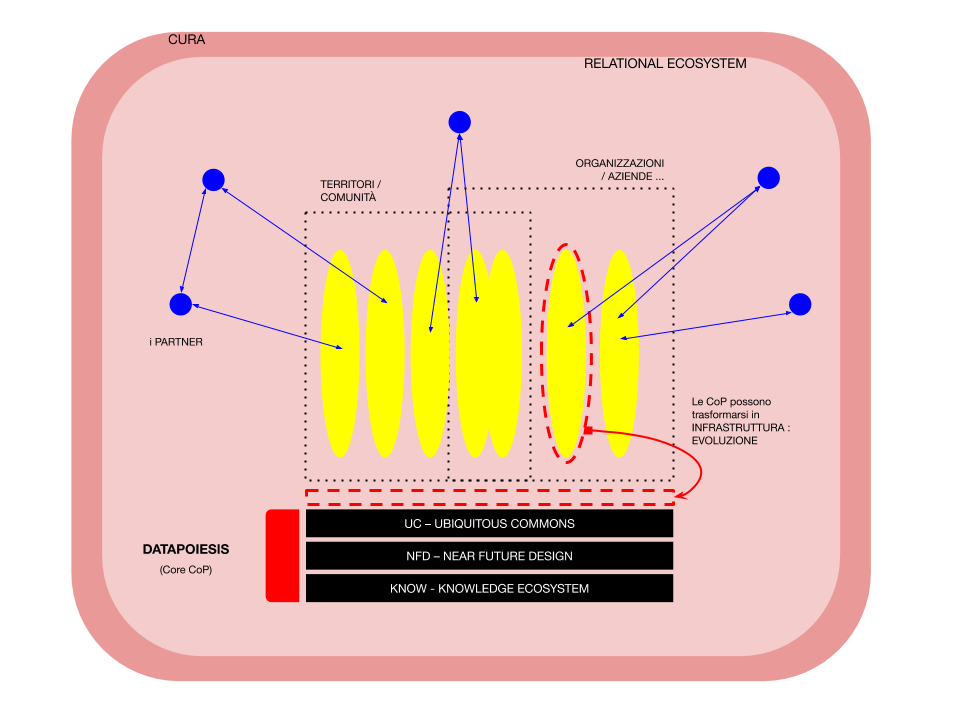
Amidst the deep green of this forest – which is, simultaneously, architecture, environment, source of food and herbs, tool and educational space used to learn and research the Rituals of the New Living, between nature, art, science, technology, data and computation – you can see the reception, the spaces that are used to work, to live experiences, have meetings, eat, rest, establishing bridges between physical and digital dimensions.

Further in that direction, along the intrigue of the small forest, are the living quarters, the kitchens, the spaces for physical and digital conviviality, where the two dimensions coexist and integrate with the life of the research attractor and of its inhabitants.

I wouldn’t be surprised to find out that there are some spaces that I haven’t discovered yet.»

*Structure*

A set of diagrams is constantly kept updated to show the structure of the research center.



*Image 1 – the structure, in July 2020*

In July 2020 the structure diagram’s report said:

«HER: She Loves Data relates with Communities/Territories and with Organisations/Companies/Institutions. These two parts are not disjoint, and can work together.

HER: She Loves Data is composed by a variable number of thematic Communities of Practice (CoP, Lave and Wenger, 1991), focused around health, learning, food, communication, organizations, and all the research themes for which there will be researchers and organizations that are willing to host the theme. CoPs can work together: health can work with education, art can work with food, communication can work with audience development, ect, in all combinations that form along the way.

CoPs can establish partnerships and have their clients, which compose HER: She Loves Data’s relational ecosystem.

CoPs have the availability of a series of tools, methods and infrastructures, with the basic first three elements will be:

* UC – Ubiquitous Commons (Iaconesi and Persico, 2015), a legal/technological/social protocol which is used to manage variable forms of digital identity (individual, anonymous, collective, temporary, transitive and remixes) using distributed, accessible technologies, and its associated technical infrastructure. Through UC data will be managed giving up the extractive paradigm, and adopting the new autobiographical, self-representational one.
* NFD – Near Future Design, the speculative design methodology, tools and professional figures (designers, facilitators, researchers, etc), which enables to work with communities, territories and “tribes” (online, for example); it is used to create participatory processes to design near future scenarios which are able to trigger imagination, communication, reflection and feedback, to the scenarios can be transformed into products, services, objects in public space, schools, offices, etc, going beyond what is “technically possible” and arriving at what is desirable, preferable, just.
* KNOW – Knowledge Ecosystems, which is composed by a technical and interactive infrastructure which can be used to collaboratively govern and manage shared, interconnected knowledge; it contains the *Archive of the Rituals of the New Living*, in which the practices in which people, communities, companies, organizations and institutions use data and computation to confront with complex needs are stored, classified, organized, connected, studied and generated as new research; CoPs, through their activity, enrich the Archive (with new concepts, research, prototypes, code, case studies, works of art…), so that other CoPs can use them.

HER: She Loves Data’s infrastructure takes the name of *Datapoiesis*.

A specific CoP (called Core CoP) is dedicated to the maintenance and evolution of the infrastructure.

Other CoPs which, over time, may have acquired specific importance in the ecosystem, can evolve and become infrastructure.

HER: She Loves Data can be replicated, and each replica does not necessarily have the same evolution history as the others. Just like in nature, an evolutionary diversity exists, and an instance in Italy could be different from one in Australia, each providing a diversity of contributions to the Archive. This also means that in replicating the research center in different contexts, one could choose one of the many evolutionary paths/trees that have already been followed – and, thus, benefiting from the knowledge about their success in similar contexts, for example –, or a remix of different ones.»

*Near Future Narratives*

Each inner circle’s participant is called to compose a *design fiction*, a short story of a future scenario which narratively shows some of the design characteristics of the research center: its inner and outer workings; its processes; the objects inside it; etc.

All of this constitutes a *Future Ethnography*, in which participants are called to perform their vision, by writing their *field notes* from the future.

*Networked writing*

A Google Drive add-on was created that allows using documents and spreadsheets as *networked writing* tools, to obtain non linear narratives. This type of tool makes it easier to compose ontologies and other forms of relational graphs: one just selects the titles, words, numbers and other elements of documents, also across different documents, and states what type of relation lays between them. Graphs, then, can be explored using an interactive data visualisation.

The first documents that were represented in this way have been the Near Future Narratives, to highlight and interconnect recurring narratives, make comparisons and to synthesize them, ways that are rich and oriented towards complexity.

*Similarities and complementarity*

A study of the organizations that, for any reason, are similar or complementary to the objective of the research center. For example, they could be similar for one of the characteristics defined in the previous sections, or for some other desirable quality: the use of art and design to bring concepts and practices to society; the attention to the ecological detail of proposed practices and rituals, not only by an environmental point of view, but also from the perspectives of social, informational, communicational and psychological ecologies.

And complementary, meaning those organizations who are able to have an impact on the daily lives of millions of people (like energy/utility companies, schools, the great nodes of distribution and communication). All these are large data concentrators and, thus, they constantly have a need for innovation of the processes and technologies which they use to deal with such enormous quantities of data. This makes them a perfect match to try to bring even radical innovation in data management and governance, for example by addressing how these actors could better manage data while also being able to respond to the needs and aspirations of individuals and communities, and to become major bearers of impacts in the upcoming confrontation with the complex issues of the planet, starting from the SDG (Sustainable Development Goals) of the United Nations.

These similarities and complementarities have been looked for within organizations of all kinds, sizes, across domains. When the final output was produced, this knowledge base was opened for public review and contribution.

*Communication kits*

Different types of actors have different communication needs, languages and each of them represents different opportunities for interaction. To communicate with these types of actors in society we have started to develop what is becoming a distinctive trait in the communication of the research center, the communication kits. These are different and used to follow different approaches, narratives, visual languages, according to the type of audience.

### Controlled dissemination and feedback

A phase of controlled dissemination began in July 2020. While the work of the inner circle continued, other actors received the outputs and were invited to provide feedback, proposals and to participate. Among them are researchers in various disciplines, entrepreneurs, policy makers, designers, educators, academics, social innovators and other profiles. It wasn’t still an open call, as it maintained some control on the disclosure, and the process paid attention in disseminating first of all to those who had already manifested interest in the initiative.

The objective was to obtain general feedback about the process and the quality of the implementation, and specifics about the ways in which different types of actors could imagine to act with and within the proposed architecture or in its variations.

### The “Open Notes” and the public debate

The project team has paid much attention to communication in the public sphere, both through its own initiatives and by participating in the ones of other actors and organizations.

The Open Notes have possibly been the most evident of these initiatives, in collaboration with Opera Viva Magazine[[5]](#footnote-4), an online publication dedicated to the arts, philosophical speculation, decolonisation and critical theory.

The open notes are a narrative and dissemination format which we used to publish documentation which could also be not definitive or in progress, to trigger public debate around it. The initiative has a twofold aim: to make the process known to a wider audience and to obtain feedback that could also be informal, for example through comments and posts on social networks.

The series of 10 articles is titled “La Cura ai tempi del Coronavirus” (Iaconesi, 2020, “The Cure at the time of Coronavirus”). The narrative starts from a disruption: during the COVID19 pandemic Salvatore Iaconesi, one of the founders of the research center, has a cancer relapse. The experience of La Cura (“The Cure”, Iaconesi e Persico, 2016a) – through which Iaconesi had transformed in 2012 his brain cancer into a new way to position disease in society through a collaboration among science, technology arts and design – had shown a way in which data and computation could have a role in society to confront complex issues. The planetary pandemics was the way in which the necessity of an epistemological disruption could be highlighted, embodying in the new research center.

Each article was published and shared on major social networks (Facebook, Twitter, Instagram, Linkedin, Academia and Researchgate). In this way the first 7 articles that had been published by the end of 2020 achieved a reach of around 70thousand, more than 4 thousand reactions, around 400 re-shares and, most importantly, a little less than 800 comments.

The first one, titled “Sogni e nuovi rituali”[[6]](#footnote-5) introduced the general format – a near future narrative, followed by a critical analysis and by a series of methodological indications – and started talking about the Rituals of the New Living, to exist in an hyperconnected and globalized world characterized by ecosystemic challenges such as climate change, pandemics, health, poverty and, sadly, many others, and on the idea that surviving in this scenario requires new alliances with data and computational agents.

The second article, titled “I rituali del nuovo abitare. Dopo la tragedia.”[[7]](#footnote-6), confronts with the theme of establishing a Culture of Ecosystems (Cultura Ecosistemica) which results from the conflict between two opposing agencies: “the individual ones, of and around our bodies, psychologies, centers” and “the ecosystemic ones, which is diffused, systemic, ubiquitous, social and oriented to complexity”. The solution is found in Art – which is able to deal with the dimension of tragedy, incompleteness, mystery and paradox – and *sensitility*, the attitude of transforming “things” into entities that can be the subject/object of forms of sensorial experience.

The third article, titled “Intimità, Incompletezza, Interpretazione. Rituali del sé connettivo dopo la tragedia”[[8]](#footnote-7), starts dealing with data and computation. Currently, both constitute extractive processes in our society. The article explores the ways in which they can be transformed into phenomena of autobiographical expression and of self-representation. A first point made in the article is to open up to the opportunities represented by what we intend as forms of life – whether they are carbon based, or made of silicon, or of legal contracts – and, thus, to deal with a world which we know is ambiguous, paradoxical, incomplete, only partially knowable, mysterious and interpretable.

«This is a substantial difference, because while in the first modality [the one of incompleteness and interpretation] data is the *beginning* [...], in this second modality [the one of extraction and computation] data is an *end*: data is used to construct a representation, and that is the end of the discussion. In quantified self data exists only at one level: extraction, through which a device can be fabricated to consume oneself. In the New Rituals, instead, we want to orient ourselves towards a larger capacity, towards a wider communicational and meta-communicational bandwidth, towards the possibility of enabling interaction on more, different levels, with diverse types of contributions.»

The fourth article, “Quelli che Immuni non è”[[9]](#footnote-8), starts off from the the worldwide adoption of contact tracing apps to contrast the pandemics (Immuni is the name of the app used by the italian government), to observe and speculate around new ways in which data and computation can be part of new rituals of our daily lives. Can these rituals be *only* useful, or only *effective*? Of course there is no single answer, and the article introduces the notion of the emotional, relational, symbolic, cultural, expressive, even magical valence of objects, services (which are, to all effects, peculiar rituals), platforms and others. In general, the capacity of generating a sense of meaning and ownership, and the aesthetics – the characteristic of being exposed to the senses – of all these things largely depends on these last factors.

The fifth article, “La Spirale della Conoscenza”[[10]](#footnote-9), enters *in vivo* in the models that direct the life of the research center, its architecture, its geometries and its practices. In the specifics, the performative knowledge model that is used in the research center is closely described. Knowledge is seen as alive and organic in society, only as it is performed by different types of actors.

«From this point of view, knowledge can be described as a living organism: when it is born, it is for the combination/reproduction/alteration of two or more concepts, actors, information, data, objects, or other. While it lives, it does so in the interpretations of the actors who interact with it: people and organizations that use this technology in their lives, computational entities that collect or use it for something – to use in a search engine, or feed it to artificial intelligences, or something/someone else. (Note: in the age of digital mediation, can knowledge enter in relationship with a tree, or with the sea, or with other non-human actors? Certainly.)»

The same article gives a first public iteration for a definition of the research center, its themes and its inner workings:

«HER She Loves Data deals with data and computation in its psychological, relational, social and environmental dimensions and implications. HER She Loves Data uses existential models, not extractive ones: data and computation are treated as elements of the existence of the actors of which they are expression, and of the ways in which these actors decide to express and represent themselves. Data is not *extracted* from behaviours and from the environment, to be then processed, studied and represented in the separation of laboratories or of data centers. Instead, they are generated by the actors of the ecosystem and by their aggregations, and live in a new alliance among them and researchers, other people, computational agents, organizations and the environments, where they all become partners in the research process.

HER She Loves Data uses Art as a mode of participatory knowledge. It experiments, studies and designs the ritualities through which data and computation manifest themselves in people’s lives and in the ones of communities, organizations, institutions and of non-human actors – for example of the environment, or computational actors –, for how they inhabit the world, individually and in relation with the other actors.

This knowledge model constitutes HER She Loves Data’s fundamental infrastructure, and is called the Archive of the Rituals of the New Living.»

The sixth article, titled “Fisica, Chimica, Biologia ed Ecologia del Nuovo Abitare”[[11]](#footnote-10) starts building in practice the way in which this knowledge can be created and shared. It does it by establishing a parallel between the ways in which other scientific disciplines work, their axioms, theories, theorems and hypotheses.

The article features a starting definition of the New Living:

«New Living is the condition in which a new cosmology is adopted, where human beings are not at the center, but part of a dynamic and diverse network of actors and agents: human, non-human, computational, with legal identity, plants, animals, complex actors such as forests and the seas. In this new living, data and computation have an important role. Given the globalized and hyperconnected character of the contexts that we inhabit, our senses are not sufficient anymore to perceive and understand what is and happens around ourselves.

This is only perceivable and understandable through enormous quantities and qualities of interconnected, incomplete and interpretable data, that can only be dealt with through the mediation of computational agents. For this, we need new senses/sensibilities – to bring these dimensions to sensitility, to that which can be experienced through our senses –. The New Living is all about these new possible alliances with data and computational agents.»

Thus, the new disciplines of the New Living, according to which this new knowledge can be defined, are laid out:

* The Physics of the New Living, that tries to explore how things work, function, live.
* The Chemistry of the New Living, that tries to explore matter in this context, its particles, waves, atoms, bonds, molecules, crystals, materials, reactions.
* The Biology of the New Living, trying to understand what combinations of humans, non-humans, data, information, knowledge, computation and elements of the environment are able to express the characteristics of life, that are: order (cellularity, complexity); encoding (information processing); regulation (homeostasis); growth and evolution (autonomously, given enough resources); energy (metabolism); irritability, sensibility, mobility (interaction among peers, or with others); reproduction (giving life to other fertile organisms); evolutionary potential (horizontal, vertical, genetic, environmental and epigenetic, hence the capacity to adapt).
* The Ecology of the New Living, which holds the previous ones together, studying their relations, and that does not limit itself to observation, but proceeds to a performative attitude that is transformative of the present, throgh a social performance of imagination (for which we use the collaborative exploration of the present/future through Near Future Design).

The seventh article, titled “L’Archivio dei Rituali del Nuovo Abitare”[[12]](#footnote-11), describes the main asset of the research center, the archive: ARNA, Archivio dei Rituali del Nuovo Abitare (Archive of the Rituals of the New Living).

ARNA is described as:

«ARNA is the archive of the knowledge developed about the Rituals of the New Living [...], which are the recurrent and encoded practices [...] in which data and computation enter daily life in ways that have a sufficient emotional engagement, an aesthetic component – which can also be characteristic of different cultures in different times –, an evolution – to update its significance –, a social function – that allows to build and refresh bonding –, and that have a defined positioning at a level of our psychology (unconscious, conscious, relational, social...)».

Derrida's Mal d’Archive (1995) is used to establish a parallel between psychology and the archive, to describe the ways in which power manifests itself in the research center, as well as the way in which reading the archive can revolutionize psychology (a data-psychology?).

The Archive «leaves open spaces that we can fill with ourselves, and that we can use to explore ourselves, in the archive and through the archive. In the space in-between.»

Thus, if ARNA is the knowledge about the Rituals of the New Living (as we have defined it in the previous article), the Archive itself is the Psychology of the New Living, because it allows to:

* observe the New Living as an instrument for the exercise of power (who decides the order, and what is included/excluded/forgot/moved...);
* observe the open spaces that are created within the order, to understand how other actors express and take ownership, for their own self-representation;
* observe the synthesis, the instability, the game that is played, the resulting movement, to try to understand life-through-the-archive and archive-through-life.

The following three articles will deal with:

* an autobiographical take on the meaning of why we are designing the research center in this way;
* the sustainability of the research center, both environmental, economic and psychological, with a section on Intellectual Property;
* the next steps.

### The next steps

The next steps in the design and creation of the research center will be the following:

* *the creation of a communication format for the open peer review*, in which the concept of the research center will be broken down in different sections and each section will undergo a public peer review under the form of recurrent events;
* *network building and extended feedback;* using the outputs of the previous steps, and engaging the actors that have participated up to this moment together with their reference networks, with the role of validating/correcting the model and to start forming the CoPs, the Core CoP and the services and infrastructures;
* *headquarters and fundraising;* at this stage, the kinds of spaces, infrastructures, materials and skills needed for the research center will be clear and, thus, a fundraising stage and the active search for the headquarter/locations/services will begin, with private and public participation and also in consideration with the desired engagement with the local communities and territories;
* *detailed design, executive design and multi-year planning of the implementation;* we, then, will be ready to start planning for execution, to transform the concepts and diagrams into architectures, live processes and the life of the future research center.

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