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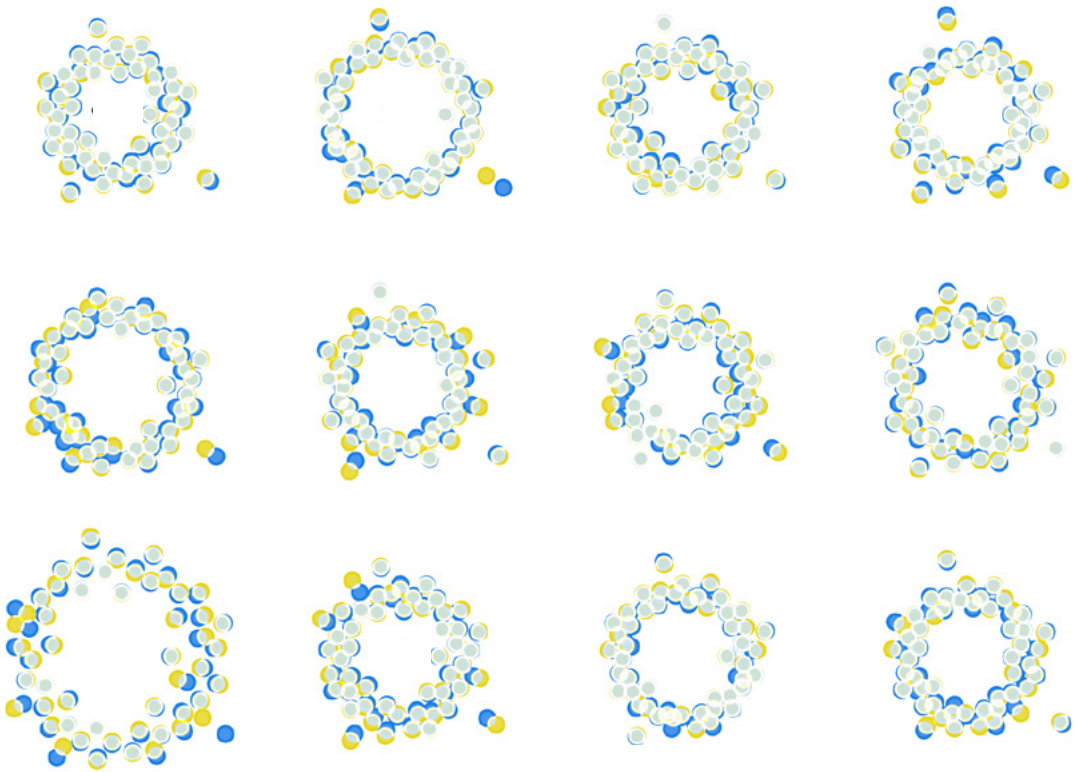

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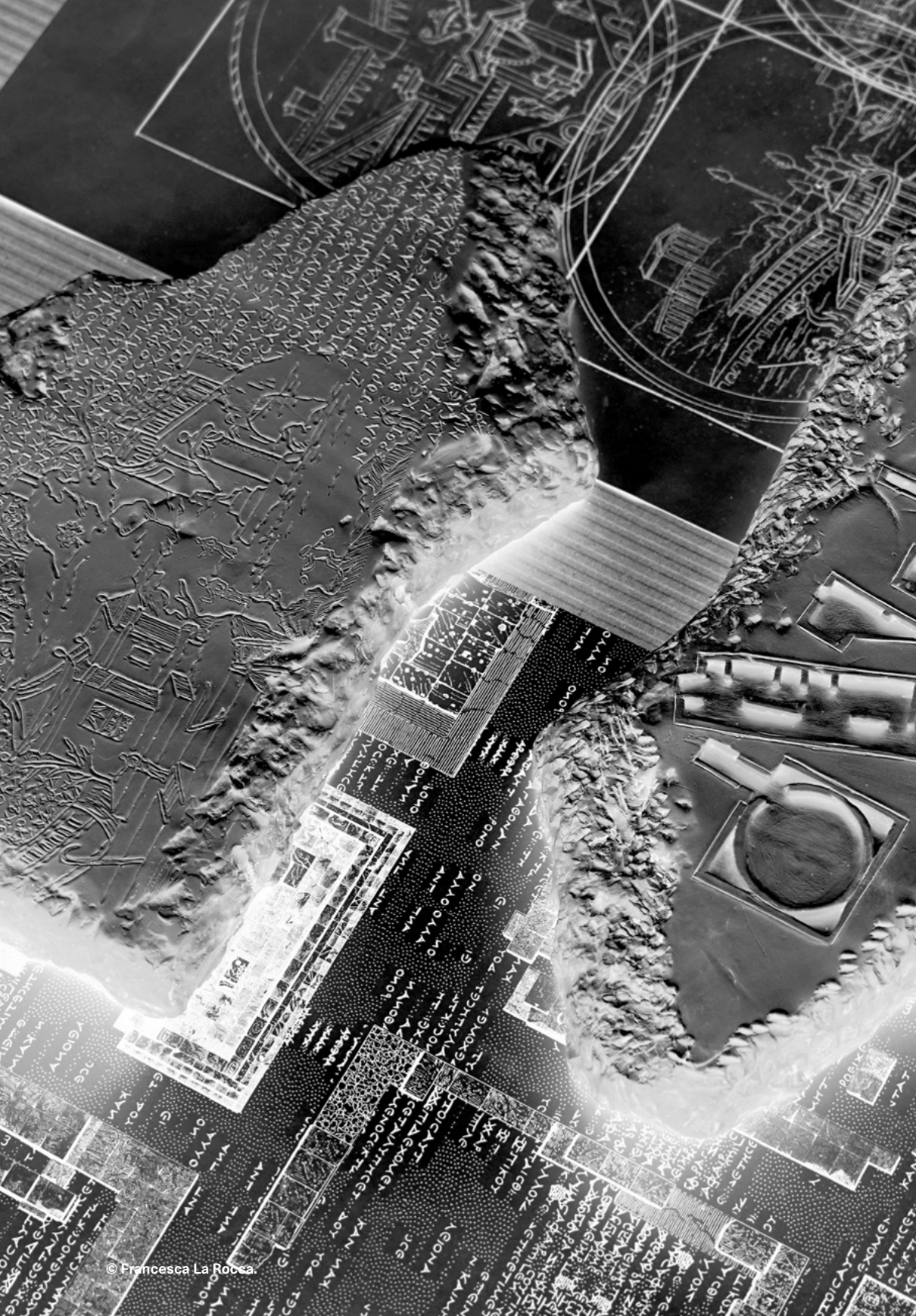

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Editorial

What we are undertaking with this scientific journal is not a natural Darwinian evolution, but a project to transform and adapt it to a context that has changed significantly: how the international scientific community addresses the field of design.

The different sections of the journal represent the intent to keep two gateways that we consider to be important open on equal footing. On the one hand, monitoring the production that the scientific community intends to present and share; we do this with no restrictions of theme or geographic origin, selecting contributions that we consider to be effective. On the other hand, we focus the attention of our readers on a theme that, in each issue, represents what we believe to be a "hot" issue, contemporary and original enough for contemporary design research.

The guest editor for this issue is Stefano Maffei from the Politecnico di Milano, who guides us through the Galaxy of Design Research into the international debate with eminent figures who help us, as if we were at a telescope on a spaceship flying through astral space, to plot routes, establish certain points, set goals, in a horizon that the scientists of anticipation call T^2 (long term scenario), in the contemporary era but just a little beyond, to become aware of the direction we are moving in.

A heartfelt thanks goes to the design community which responded to our call by submitting over 110 scientific products so far from a total of 142 authors. Many more than we were expecting and that, in the best of cases, we will be able to spotlight, but which bear witness to the need to open the scientific debate at the international level and to do so within the rules of the scientific community. A way to thank everyone and work hard to achieve excellent indexing for the journal as quickly as possible.

As you read issue number 75, we usher in the year 2022 and prepare to celebrate the journal's first twenty years.

Flaviano Celaschi
Editor-in-chief

Open Debate

This Open Debate section of issue No. 75 seeks to provide a glimpse of the evolution and expansion of the disciplinary area of design: we imagine it as a *New Galaxy*, with open and intertwined relations with other disciplines, contexts, challenges. Design action is explored in its complexity, as a transformative act. By including the entire more-than-human perspective in the transformation process, together with a strong political understanding, design could play a new systemic and ecological role in imagining a shared and desired future.

Photo by József Rosta.

VIZ 04

CONCEPTS EMERGING AMONG DIFFERENT LANGUAGE EDITIONS

source
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data
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question
which different concepts emerge among different language editions?

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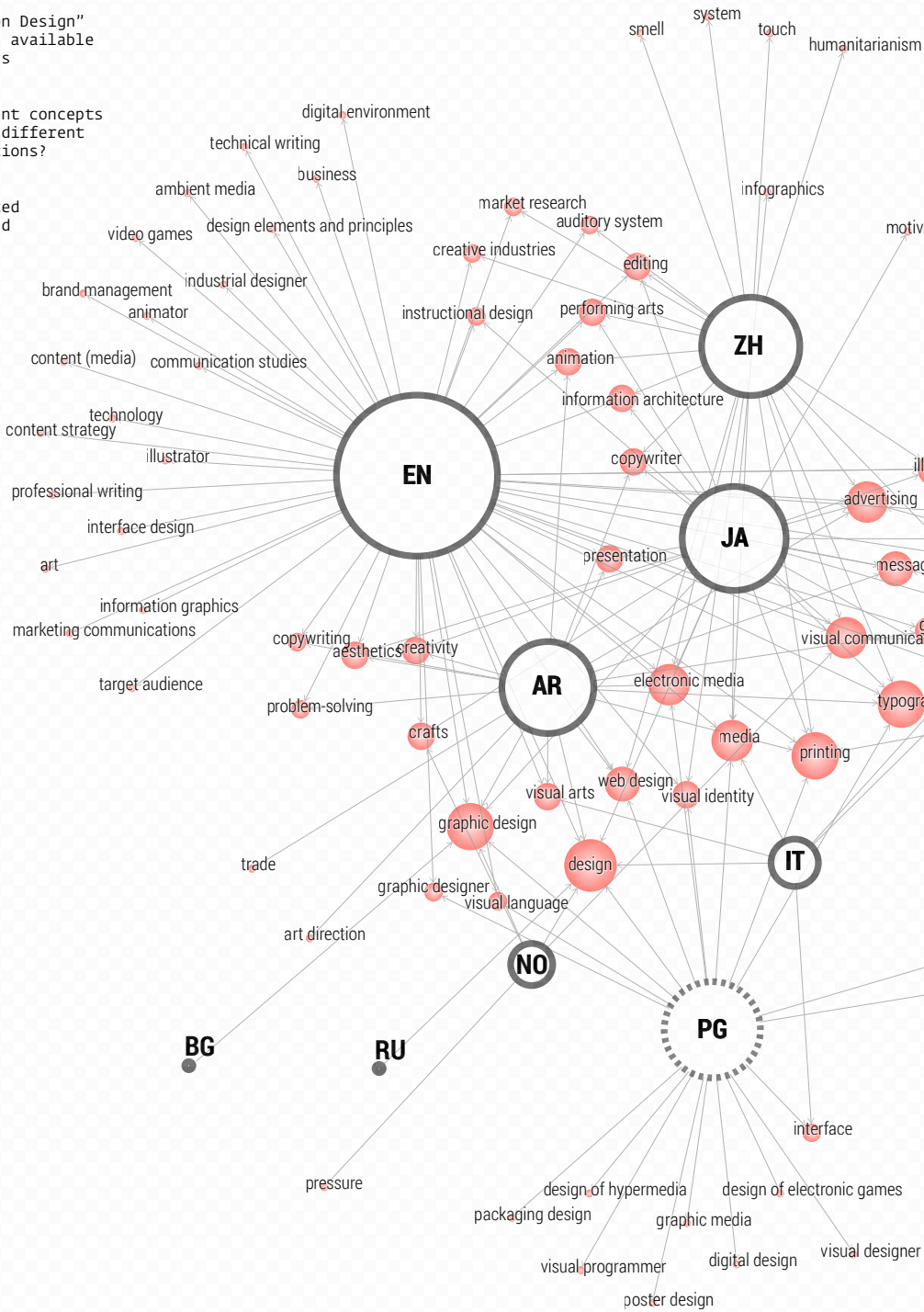

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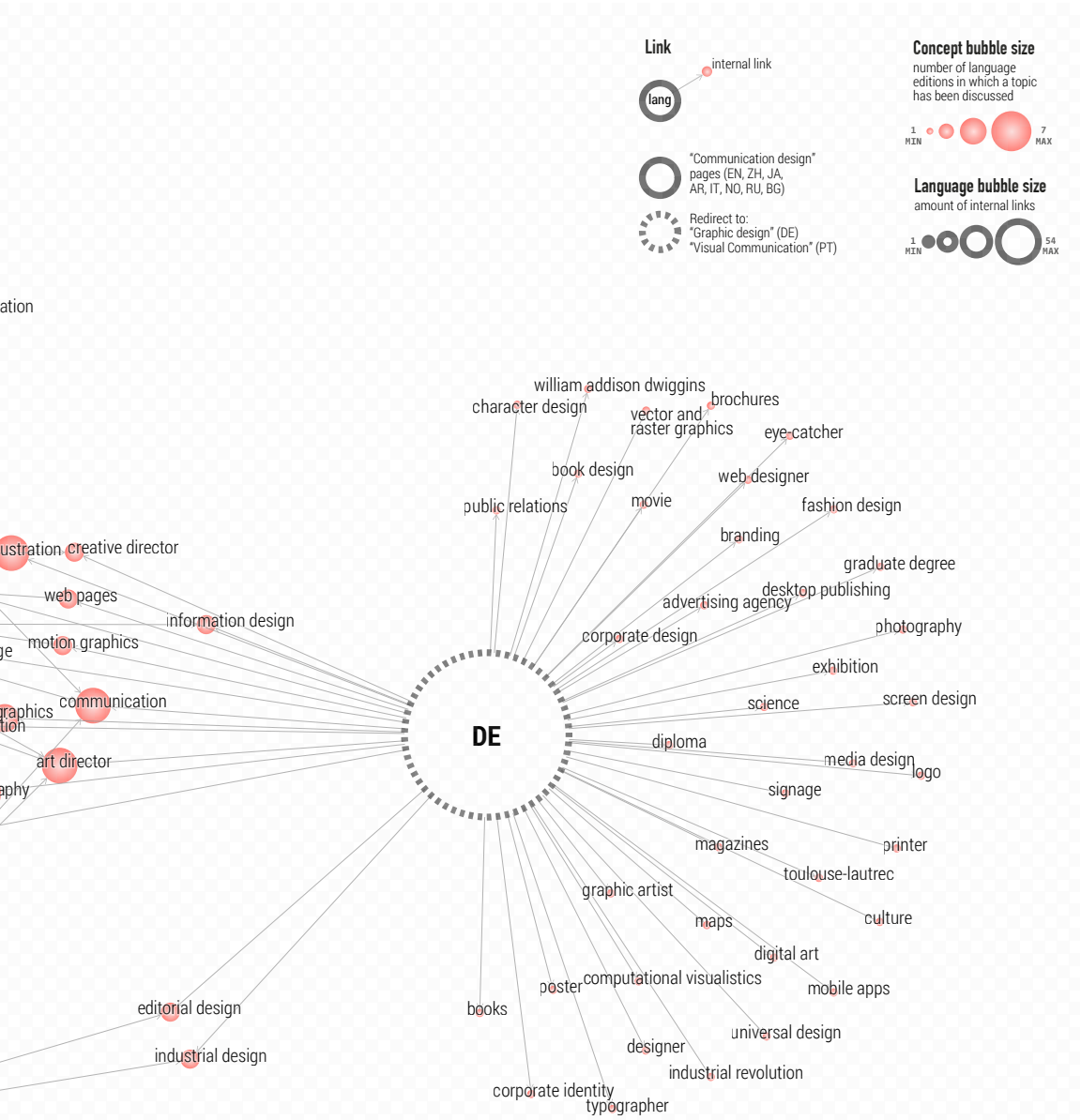

The map shows the internal links of each language edition of the article "Communication Design". The German and the Portuguese bubbles have been differentiated with a dazed line since they refer to the "Graphic Design" and "Visual Communication" pages. Although these two have lots of concepts in common with the others, they appear as detached nodes from the network because they have many unique phrases. In the following pages all the phrases have been categorized by macro-groups in order to facilitate the reading and to better focus on the significance of these concepts within the Communication Design field.

Expanding the Galaxy
Designing More-than-Human Futures

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Abstract
When we talk about design, we might define it as anticipating, imagining, defining the future, yet it might also be an act of transforming, or considering the possibility of various orders of transformation. This process can be described, borrowing Buckminster Fuller's point of view, as a preestablished sequence of activities/events characterized by a preliminary phase of exploration and research. Leroi-Gourhan describes it as a process of hominization coupled with the power of technical evolution, which generates what we call the Anthropocene. Design theory and the philosophy of technology have long reflected on the idea of modernity as a transforming force that changes the face of the world. The birth of a critical ecological movement and the advent of the global transformation of post-industrial society, encourage the use of design as a generator of social value. As the posthuman perspective (Braidotti, 2013) embraces actor-network theory, new feminist materialism and object-oriented ontology, design is also incorporating a consideration of animals, machines, and other things in the planetary transformations. We have never, in recent years, witnessed such a flourishing of theoretical, cultural, and experimental reflections. A new design galaxy can be mapped.

Keywords
Design evolution
Complexity
Ontological design
Design teleology
More-than-Human design

What do we mean when we talk about design?

We might describe it as a concept that defines a *gesture*, an *action*, a *drawing*, or an *act* that translates a mental image and defines designing (the Latin *pro-iecto*, *I throw forward*) as anticipating, imagining, or defining the future.

In a more contemporary perspective, we consider it as an *act of transforming*, or assessing the possibility of various orders of transformation, which concerns every single aspect of the tangible and intangible material human experience within the environment — and by extension — from the infinitely small to the incredibly large.

It means gradually shifting the limited view of *design* as *a discipline that aims to attribute form to artefacts*, towards conceiving it as a *plan* or *project* for the realization of a more complex and systemic transformation. From this point of view, the word design changes its meaning and acquires new significance as *a process aimed at achieving a transformation*: Ken Friedman (2002, p. 4), in the wake of Herbert Simon (1969), thus defines design as a verb/action (to design) that aims at creating "something new (or reshaping something that exists) for a purpose, to meet a need, to solve a problem or to transform a less desirable situation into a preferred situation". Design is, therefore, *the very process that activates these transformations* and can be described, borrowing Buckminster Fuller's point of view (Friedman, 2002, pp. 4-5; Fuller, 1969, p. 319), as *a pre-established sequence of activities/events* characterized by a preliminary phase of exploration and research followed by a "generalizable process that moves from prototype to practice".

For Fuller, this design process is a "comprehensive sequence leading from teleology — the goal or purpose toward which the process aims — to practice and finally to regeneration. This last step, regeneration, creates a new stock of material on which the designer may again act". Here, it is the very discussion of *teleology*, of the *design telos*, that guides us in this exploration. Traces may be found within the anthropology of technology studies: the discussion however is about the nature of human evolution, linked to the transformation induced by technology which transforms not only the environment but man as well, humanity itself.

Leroi-Gourhan (1964-1965) defines it as the process of *hominisation* which is at the basis of the epic of *civilisation* (Diamond, 1997). This process of *anthropization* coupled with the power of technical evolution generates what — with an extractivist mindset — we now call the *Anthropocene*[1].

The evolution of the *disciplinary telos* that built the connecting processes between design itself and industry structured the cornerstones of the *idea of modernity* and *modernization* — thereby structuring the history of design knowledge and practice — along a path marked by the founding experiences of the great schools of the Bauhaus and the Hochschule für Gestaltung in Ulm. They systematically explored this path, which stems from the first model of *proto-industrial extractive society* that was born with the Arts & Crafts movement at the end of the nineteenth century. We can trace it back to the beginning of the industrialization process, and the production of objects and technologies linked to the spheres of human experience that accompanied the first mechanization in the early twentieth century — Sigfried Giedon's *Mechanization Takes Command* (1948)

1
For a definition of the *Anthropocene* see the definition of the *Noosphere* by Vladimir Vernadsky (1938/2012) starting a tradition in which the Soviet Union scientists started to use the term *anthropocene* in early 1960s to refer to the *Quaternary*. Both Eugene F. Stoermer in the 1980s and Paul J. Crutzen in 2000 (Zalasiewic et al., 2010) used the term to define the impact of human behaviour on Earth's atmosphere that might be considered as the cause of a new geological epoch.

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— and brought with them the new *myth of the machine*, the *industrialization of craft*, and the *democratization of consumption*.

Design theory and the philosophy of technology have long reflected on the birth of the *idea of modernity* (Maldonado, 1987) as a transforming force that changes the face of the world. The dynamics of this trajectory proceed from the structural coupling of man and technology: Tomás Maldonado, in his subsequent *definition of industrial design* (1976; entry *Disegno Industriale*, Enciclopedia Treccani Online), following Gilbert Simondon (1958), speaks of the *materialization process of a technical individual* [2].

This synthesis displays a profound understanding of the role of design as a mediator between the evolution of technology and capitalist society: these two elements formed the basis for what many scholars considered to be the canonical definition of *modernity*, a rational and technoscientific system of thought that structures the material artefactual landscape of society, and in particular the development of the values, lifestyles, and functions that characterize daily life.

Consequently, the discipline's most characterised and *classic telos* emerges as a transformative ideology complementary to the *teleology of advanced capitalist society*.

The crisis in the concept of modernity triggered by the critique of Radical Design (Branzi, 2015) and articulately developed in the evolution of *post-industrial* and *post-modern* society, has progressively created the conditions for a more complete reflection upon the *political meaning* of design.

The destiny of *humanity* cannot depend solely on populating our environment with systems, technologies and objects produced by a social model of *comfort, affluence* and mass production linked only to individual economic well-being.

Victor Papanek (1971; Maldonado, 1970; Meadows et al., 1972) argues that the discussion regarding models of development and growth cannot be regulated by design alone, and by transformation processes linked to rational technoscientific and socio-economic approaches and/or symbolic value attribution that aim to restrict the *telos of the project* to a mere mechanism for satisfying individual needs.

The idea that the role of design can only be expressed in the project for the *differentiation of goods* as a mechanism that realizes the contradictory project of capitalist society, clashes with the *liberation of the symbolic imagery of desire* that proposes an *overall and radically revolutionary transformation of society and culture* (Barthes, 1957; Baudrillard, 1968).

This *system of objects* speaks not only of the functions it expresses, but also, and very transparently, of the society in which it is generated and of the individuals and relationships with which it is populated.

In this critical perspective the action of design is interpreted as an indispensable *semantic mediator* in the *construction of the meaning of objects* in a commodified society (Krippendorf, 2006; Verganti, 2009).

With this expanded awareness, we can no longer consider design only in terms of its direct functional or symbolic action

2
See Maldonado (1976): "to design form means to coordinate, integrate and articulate all those factors which, in one way or another, participate in the constitutive process of the product form. Specifically, this refers both to factors relating to the use, fruition and individual or social consumption of the product (functional, symbolic, or cultural factors) and to those relating to its production (technical-economic, technical-constructive, technical-systemic, technical-productive and technical-distributive factors)" (pp. 9-10).

but must also include all the secondary effects of production and consumption on the social and economic and above all the environmental fabric.

The birth of a critical ecological movement that reflects upon the effects on the environment and the biosphere of a *consumer society*, increased users' symbolic and political capacity of interpretation and led to the advent of the global transformation of post-industrial society.

It has become increasingly important to include users in the creation of the meaning and values (socioeconomic, environmental, cognitive-symbolic, functional) that the design practice can ascribe to production and consumption processes. It leads, on the one hand, to considerations on how the evolution of traditional models of *technology push* or *market pull* innovation can be shifted towards models of *design-driven* innovation (Verganti, 2009).

On the other hand, it carries on the tradition of the Scandinavian-Nordic school of *participatory design*, in which the roles of stakeholders and users in co-design practices represent a way of introducing a more conscious vision of the impact of design on choices that can influence individual, collective and social wellbeing, both at the level of artefactual needs-functions and at the level of inclusiveness, social justice and political utopia (Ehn, 2014).

Design marries its vocation to intervention in the social dimension (Margolin, 2002) and discusses current models of innovation, shifting them to a dimension that relies on political and civic engagement and collaboration between elective and activist communities to build actions for change based on values, objectives and processes that well represent the perspective inscribed in what we define as *social innovation*.

Ezio Manzini (2015) speaks of *bottom-up innovation* (created by networks of individuals-communities) that, through open and collaborative processes, generates shared solutions from below, mainly through the creation of new grassroot services and processes.

It is, therefore, preferable to expand the meaning of the design *telos* starting from these explicit visions and approaches, to explore those design practices and processes that can be traced back to the idea of the *production of the artificial*.

> In *The politics of the artificial,* Victor Margolin (2002) writes: if we consider design to be the conception and planning of the artificial, then its scope and boundaries are intimately entwined with our understanding of the artificial's limit. That is to say, in extending the domain within which we conceive and plan, we are extending the boundaries of design practice. To the degree that design makes incursions into realms that were once considered as belonging to nature rather than to culture, so does its conceptual scope widen (p.106).

This debate leads the theme of the evolution of design into the discussion of the *human* and *humanism*: Rosy Braidotti, in the wake of Donna Haraway (Haraway, 1991; Braidotti, 2013), speaks of the *posthuman* as the new philosophical category within which we must situate our experience. Antonio Caronia (2001) speaks of a new object for design attention: us and our biological and perceptu-

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al-mental bodies. The *prosthetic dynamic* that has guided much of design as we know it faces its ultimate challenge: the invasion and transformation of the body.

As Bruno Latour points out (1991), we live in a world ruled by a *law of symmetry.* There are both human-biological and artificial entities, the *actants*, capable of producing complex assemblages and networks of actions that transform the world we live in.

This vision gives rise to an idea of design that reaches beyond the traditional concept centred on the (human) user and imagines a post-anthropocentric future (Morton, 2013). In this future, the demiurgic role of (human-centred) design will dissolve into a wider perspective: a multispecist vision in which the human species increasingly merges with other species, bringing together the organic and the inorganic.

The alternative is less dystopian and more utopian: in this vision, design enters a systemic perspective in which designers can expand their scale of action, to achieve the *fourth order* (Buchanan, 2001). Again, in the perspective of an ecological and systemic role for design, transformations must focus on the theme of systemic interdependence (Haraway, 2016; Escobar, 2018). Furthermore, any action leading to change must build a deep ontology that goes beyond the idea of *direct causation* and imagines including complexity and systems. It has forced us to reconsider all the certainties that constituted the limits of our vision as designers: the emergency, with its mandatory changes, made us reflect on alternative visions requiring us to rethink, expand, edit, change the historical and cultural legacy with which we speak of design. We must redefine the limits regarding the great transformation of what surrounds us. Everything is connected. The crisis made us realise we are part of a system. It tangibly materialised it. According to Bruno Latour (Latour, 2018), we live in a new climate regime where we can no longer see the world and its resources (biological and inorganic) as an inert object that can be exploited without limit: nature demands its agency, which it manifests through the phenomena emerging from the climate crisis. Laissez-faire deregulation, the myth of markets and technologies as the solution to all things, have created forms of non-inclusive globalisation. A free and open world for goods, but not for people: an unfair society that uses without including or spreading (Maffei, 2021).

The fundamental social and environmental challenges require rethinking how design can intervene in significant transformations on a planetary scale: it includes rethinking the role of man, of the human species at the centre of the world.

Laura Forlano believes that design can embrace the posthuman perspective by considering various new epistemologies and ontologies such as *actor-network theory,* the *new feminist materialism*, and *object-oriented ontology*:

> There are many signs that ideas about the posthuman are already being incorporated into the field of design and drawing on these varied lineages with discussions about decentring the human, non-anthropocentricism, and human/non-human relations. This shift towards the posthuman includes consideration of animals, machines, and — drawing on Tim Ingold's more expansive definition — other things

such as trees, rocks and various kinds of everyday artefacts and objects (Forlano, 2017, p. 26).

We have never witnessed, in recent years, such a flourishing of theoretical, cultural, and experimental reflections. Therefore, in issue 75 of *diid*, we speak of a *New Design Galaxy* in describing the evolution of our discipline: an expanding galaxy of approaches, theoretical and interpretative models, practices and critical and speculative dimensions.

The interview with Paola Antonelli (*Design Emergencies and the Power of Design*) explores the emergent social, economic, and environmental crisis (Antonelli, 2019), and explains how her *Design Emergency* project might really map the emergent practices seeking to change the *Broken Nature* that surrounds us.

It is a complex system that can be mapped, interpreted, and visualised using, for example, a *design macroscope* that — as Paolo Ciuccarelli (*A Design Macroscope*) suggests — can borrow perspectives and methods from various disciplines, filtered through a process of digital ethnography, to help us build a deeper understanding of this expansion.

We have never encountered a vision before such as Arturo Escobar's vision of *radical interconnectedness* (Escobar, 2017; 2020), which has opened our eyes to the decisive role of relationships which include not only humans but all species and the environment around us. His idea of *ontological design*, described in the interview (*What Are Pluriversal Politics and Ontological Designing?*), lays the foundations for a different vision of disciplinary evolution that goes beyond the dimension of *modernity* and introduces a discussion about *defuturing* (Fry, 2020), and the political value of discussing design as a way to discuss post-capitalist society.

Rachel Cooper imagines a *value-driven* design that relies on a systemic, interdisciplinary, and holistic design approach (*Design Value Versus Design Values: From Mission Oriented Innovation to Ecosystem Enabling*), based on the idea of a new commonality and collaboration following Rowarth's (2018) *doughnut economy* model and Mazzuccato's *mission-oriented innovation* model (2018).

Albert-László Barabási tells us (*Understanding the Invisible. From Networks to Transformations*) how scientific thought intersects with thought on transformation and transition: *Network Theory* helps us to understand the hidden phenomenic nature that structures the explanation of the apparently random becoming of this universe of relations and pushes us to interpret reality as a dynamic configuration of networks (Barabasi, 2016).

This transformation also impacts our idea of humanity: Laura Forlano (*Dispatches on Humanity from a Disabled Cyborg*) defines herself as a *disabled cyborg,* in her autoethnographic story, to show us how human-computer interaction might be a lens that helps us understand the complexity of humanity in its relationship with non-human entities, or other examples of radical humanism.

Cosimo Accoto moreover (*Computational Simulation as a Principle, a Tool and a Method for a Future-proof Design Strategy*) explores how computational synthetic simulation drives a more complex and predictive world-making practice linked to design for the future.

The section ends with the three exemplary stories of Superflux,

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Forensic Architecture and Thomas Thwaites, who show us that there is a world of experimental and reflective practices that are taking design to the very edge of the galaxy.

We have to end what Latour calls the contemporary *Out-of-This-World* vision

> in which we imagine progress as an uninterrupted exploitation of that closed system which is our world, putting the rights of future generations at risk in Anthropocene terms. The only solution for a transformative discipline such as design is to adopt a *terrestrial attitude* to understand the margins of the not-inevitable environmental catastrophe, through a geo-social attitude. How? By tracking the impact of our design actions (of product-service and transformation in general) on a local scale and by assessing the global impact on man and the terrestrial (which includes the biological and the inorganic). What is new is the attempt to include all this in something greater than the rational form of the circular economy (Maffei, 2021).

We need a model of evolution focused on a *more-than-human* perspective (Wakkary, 2021; Antonelli, 2019; Giaccardi & Redström, 2020) which includes the *terrestrial.* We need to give representation to nature and the inorganic — granting it *independent agency* that gives voice to organic and inorganic matter. In doing so, we can imagine that design can play a decisive role as a transformative act consisting not only in practices of critical and speculative anticipation of the future (Dunne & Raby, 2001; 2005; 2013; Malpass, 2017) but also in building a new narrative based

> on the dimension for comprehending the potentially dystopian future of humanity and the social challenges it will face [...], giving rise to a vision in which the application of social fiction and the idea of fictionality is reflected in design in speculative artefacts and *what if* scenarios the purpose of which is to holistically reconstruct worlds that function as *cautionary tales* (Maffei, 2020).

As I've written before, "In the era of uncertainty and the end of utopias of all kinds (social, religious, philosophical), the attitude of design toward *problem solving* thus changes to a *problem setting* or rather a *problem finding* perspective. From *problem solver* to *problem seeker*" (Maffei, 2020). We have to include a discussion about power dynamics and social justice (Costanza-Chock, 2020) as a way to simply rediscover the nature of design, imagining that we might also act as *troublemakers,* in the sense of opposing the dominant value system that causes injustice, exploitation and domination.

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