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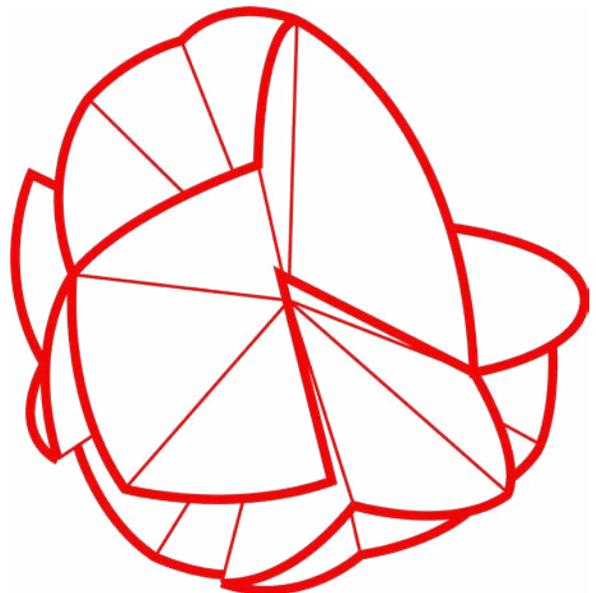
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# Dasein Ist Design: An Ontological Discussion of Design in the Ecological Crisis Time

**Sabrina Lucibello**

Sapienza University of Rome

sabrina.lucibello@uniroma1.it

ORCID 0000-0001-6523-4455

**Carmen Rotondi**

Sapienza University of Rome

carmen.rotondi@uniroma1.it

ORCID 0000-0003-2441-1851

## **Abstract**

The paper introduces preventive innovation as a possible way for design to address global challenges within the broader context of the Bio Revolution, understood as a dual convergence – technological and cultural – between biology and artifice. The interrelated condition, amplified by environmental crises and technologies that go so far as to recreate nature, requires a broader reflection on innovation and a proactive and preventive attitude that allows us to develop a new awareness of the reality surrounding us. To focus on the ontological dimension of design in this context, we will describe part of the results of “Biovision of the Future”, a research and critical reflection path promoted by the authors with the contribution of Stefano Marzano. The results under discussion are five “attitudes” deriving from the critical reconsideration of some paths that design takes in the Bio Revolution. These may be valuable references for design approaches aimed at preventive and post-anthropocentric innovation.

## **Keywords**

Preventive innovation  
Bio revolution  
Post-anthropocentrism  
Multidisciplinary roundtable  
Ethics

The sentence translates as “being (there) is to design”, where the Heideggerian proposition of ‘Dasein’ (to be there, to be-in-the-world) represents the existence of humans in connection with the world, the others and themselves. The catchphrase is in the original language (German).

If the whole fabric of our earthly existence has to be redesigned in excruciating details; if for each detail the question of good and bad has to be raised; if every aspect has become a disputed “matter of concern” and can no longer be stabilised as an indisputable “matter of fact”; then we are obviously entering into a completely new political territory. (Latour, 2009, p.8)

In this way, Bruno Latour introduces Political Ecology as a new field of action, encouraging designers to expand their role in “drawing together” not only the details of daily objects, but also cities, landscapes, nations, cultures, bodies, genes and nature itself, allowing modernism to break the deadlock of progress.

As Oosterling (2009) summarizes in the philosophical catchphrase “Dasein ist Design”<sup>1</sup>, we live in an age in which the world is increasingly permeated by design, both understood as the design process and as the effect of such process. Every aspect of our existence (from the technologies we use to consumption patterns and social or political structures) results from human design. At the same time, we are also shaped and influenced by design, as the systems and structures we live in influence how we think and act.”Dasein ist Design” therefore implies that humans are responsible for their design choices and that these choices significantly impact how we live and interact with the world. It invites us to reflect on our ethical responsibility as designers of our Being and our environment and the need to consider the long-term effects of our actions.

In today’s context, in which sophisticated technologies make everything “technically possible” and in which our actions are also capable of affecting the balances that keep the Planet alive, it is necessary to introduce into the creative process a new type of “preventive” reasoning that stimulates greater ethical awareness in all those involved in innovation, taking into account negative scenarios as well as the positive ones of any scientific development. The ultimate aim is to develop a culture of prevention shared by the various human spheres of research, ethics, spirituality, politics and justice. It is, first and foremost, a cultural operation that implies taking responsibility for future scenarios and a commitment to build remedial tools beyond those of progress to prevent the undesirable.

In this context, designers can act as catalysts within a more complex network of actors and interlocutors thanks to their abilities to read and interpret reality, integrate multidisciplinary knowledge, and represent concepts through metaphors and images. The latter can facilitate the exchange and collective creativity of multifunctional groups in decision-making processes or offer projections of future scenarios and possible solutions. In this regard, Paola Antonelli (2019) asserts that design, while not being able to solve our existential problems, is nowadays configured as a well-considered “repair strategy”, capable of supporting through the production of artefacts of various kinds a reconciliation between human beings and the complex systems that surround them, towards a more equitable and guaranteed future for all. Designers should field an acute critical sense to analyse the multiple links that connect humans to their environments (economic, social, cultural, ecological and political) and design reparations in the form of artefacts and concepts that can

help the community to emerge from a common sense of “blinding hypocognition”<sup>2</sup>.

In particular, unlike in the past, we now witness the gradual fading of the boundary between things that represent the artificial and those that represent the biological, between culture and nature, bringing with it a series of ethical-philosophical but also practical-designing questions worth discussing. The term “Bio Revolution” refers to a set of advances in the biological sciences and biotechnology, as well as exponential advances in computation, data analysis and automation, which are fuelling a new wave of innovation that could have a significant impact in different sectors, from food and consumer goods production to health, changing business models, value chains and design practice (McKinsey Global Institute, 2020). More broadly, the Bio Revolution refers to a new set of technological possibilities and issues that exceed our ability to remain within the domain of the artificial and make it almost impossible for us to break them down into existing disciplines. A convergence that is not limited to technologies alone but extends to political, economic and social systems, which become increasingly complex and prefigure a “neo-biological” civilisation in which the “realm of the born” (all that is nature) undergoes various forms of engineering and the “realm of the made” (all that is humanly constructed) evolves towards a “bio-logic”, without which it cannot continue to work (Kelly, 1994).

At the same time, the emergence of environmental and planetary issues is undermining the anthropocentric concept of sustainability based on the search for forms of habitability on the Planet that see humans dominating other creatures, giving way to a geopolitical vision of nature in which social and ecological instances are strongly interconnected (Latour, 2000). In other words, the dissolution of the boundary that used to delineate the artificial sphere, as well as the encroachment of human and design activity to the natural sphere, are nowadays also and above all visible in the complex challenges facing the ‘Earth system’, leading to the emergence of new cultural metaphors and philosophies that see humans as an active and interconnected part of a great entanglement of hybrid relations with the technosphere, the biosphere and the geophysical environment. Some theories, such as the “Hyperobjects” theory (Morton, 2018), the “Object Oriented Ontology” (Harman, 2018), and Critical Post-humanism (Haraway, 1985/2018; Braidotti, 2020), definitively challenge the late-capitalist ideology of pure survival and sustainability, extending philosophical thinking outside humans, to the point of questioning reality and its perception in order to outline evolutionary systems capable of including and mixing different forms of life. In the post-anthropocentric perspective, humans are decentralised to a “mobile assemblage in a shared living space that they neither control nor possess, but simply occupy, always traversing in community, in a group, in-network” (Braidotti, 2020, p.1); while environmental sustainability becomes a broader concept, which does not only include the reduction of human impact on the Planet by conserving resources, but the ability to establish new forms of cooperation with nature and with mutualistic benefits for both parties.

One might wonder what the “good of design” is in this context and how designers can perceive, understand and take responsibility within complex systems they cannot control. How could the

“good of design” stimulate ethical, systemic and long-term responsibility in all innovation stakeholders? At a time when everything is “technologically possible”, but the design certainties are disappearing, what are the new values that design can refer to? How can design make governments, power structures and the whole community more aware of the near future, if possible interspecies?

### **Biovision of the Future**

Starting from these assumptions, “Biovision of the Future” was born, a path of research and critical reflection on the issues concerning the Bio Revolution and the related design challenge in defining more sustainable and desirable life models. The research path, promoted by the authors with the contribution of Stefano Marzano (CEO of Philips Design from 1991 to 2011), involved numerous experts, professors, researchers and more than 30 PhD students from different disciplines with the macro-objective of stimulating a more critical and strategic design culture regarding the use of the most advanced (bio)technologies. The attempt was also to answer the numerous questions that arise at a time when a material, multidimensional, and multiverse convergence between nature and artifice stimulates addressing systemic change, contemporary challenges and the very value of sustainability from a cultural rather than technological perspective. With a view to preventive and ethical innovation, the design must handle the enthusiasm of solving contemporary challenges by simply rethinking products and processes from a biological perspective. So, it is of great importance to go beyond the individual point of view of the designer collaborating with the scientist to implement biotechnology or to explore its social dimensions towards listening to and synthesising multiple opinions that also contemplate new approaches to ecological understanding as well as systemic change perspectives towards preferable futures.

In particular, “Biovision of the Future” was structured in four phases, each including specific participatory and multidisciplinary discussion activities.

The first phase consisted of a virtual round table entitled “Biovision of the Future. Discuss life through design” on the ethical-scientific-cultural implications of the Bio Revolution. The technological possibilities opened to design in the whole range of human interactions – the well-intentioned and the criminal – were discussed, and the different disciplines were confronted by three great powers, according to Stefano Marzano, fundamental in defining the boundaries of human activity: economic (which through investment decides what we seek); political (which regulates development and directs the legal side); spiritual (which has a significant influence on ethical and moral spirituality) (Massoni, 2022).

The second phase consisted of a two-part lecture by Stefano Marzano and Reon Brand (Senior Director Foresight and Socio-cultural Trends, Philips Design) on the co-emerging trajectories that define current and future change (Brand, 2019). In particular, the focus was on the trajectory of “Gaia”, i.e. post-anthropocentric future directions and how design can catalyse them.

The focus of the third phase was on the technological trends of the Bio Revolution, involving Sapienza professors and researchers in cutting-edge disciplines to explain their research focused on the main contemporary issues: environmental sustainability, social well-being and personal health.

Instead, the protagonists of the fourth and final phase were PhD students from several disciplines and six Sapienza departments involved in a workshop entitled “Biovision of the Future. Design challenge for a sustainable and desirable life” lasting five days. During the workshop, which took place at Saperi&Co (Research and Service Centre of the Sapienza University of Rome), the tools, notions and streams of thought deriving from the previous phases were applied to co-design six scenarios and product concepts focused on rethinking the way we live our homes, cities, bodies and the global challenges of the Planet from a post-anthropocentric perspective.

### “Revolutionary” Attitudes in Bio Revolution

In order to focus on the ontological and even axiological dimensions of design, we will describe the results of the first phase of the Biovision project. The roundtable, which involved seven multidisciplinary experts<sup>3</sup>, focused, in fact, on a critical reconsideration of some of the paths that design is taking in the context of Bio Revolution characterised by systemic transformations, global crises and hybrid interactions. The aim was to define some attitudes and methodological supports to which design can refer for preventive and post-anthropocentric innovation.

The roundtable followed a well-defined methodology, starting with the sharing of some visual and introductory contributions (videos, images, design projects), which showed to participants the state of the art on Bio Design, thus the set of transdisciplinary design practices *of, with and from* biology stimulated by the “germinating” scientific-technological context (Myers, 2012). The aim was to stimulate involvement and synaesthesia of thought and to align participants on the same specific issues through the visual exemplification of possible scenarios or the description of tangible examples. Successively, a ‘critical thinking’ phase was carried out, in which we asked participants two questions: the first on a specific aspect of their research identified by the authors as relevant to the discussion, the second on their point of view (and that of their discipline) on the issues treated. In this way, the speakers equally participated in the discussion and get to know their interlocutors and their thinking to prepare for the next and final “critical roundtable” phase. The latter, structured as a brainstorming session and mediated by Stefano Marzano, aimed to define some attitudes or behaviours that design practice should assume to cautiously and attentively face the new revolutionary wave. In particular, during the brainstorming activity, each participant was asked to express one or more attitudes, i.e. a valuable indication for raising ethical awareness among designers and collectivity, stimulating more responsible and mutualistic behaviours for humans and all that surrounds them. All participants extensively discussed each attitude, in its negative and positive aspects, effectiveness and efficiency (both in the short and long term). In the

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The experts involved were: Stefano Marzano (designer-architect), Roberto Poli (futurist-sociologist), Mauro Magatti (sociologist-economist), Leonardo Caffo (philosopher), Carmelo De Maria (bioengineer), Mons. Carlo Maria Polvani (churchman), Francesco Morace (sociologist).

end, five attitudes were selected: anticipation, prevention, caring, sharing, and signification.

The first attitude, *anticipation*, derives from future studies and is the third level of investigation after “forecasting” and “fore-sight”, understood respectively as the statistical extrapolation of plausible futures and the visualisation of possible futures through scenario construction. Anticipation incorporates the two previous models and translates them into strategic decisions and actions that act now for preferable futures. In a context such as the current one, where changes are constantly accelerating, acting “anticipatively” means proactively preparing for the future by modifying the behaviour (Poli, 2019). From a post-anthropocentric perspective, anticipation allows us to reflect on our acting modalities and the possibility of aligning them with nature’s evolutionary strategies. When we realise that we are an integral part of the “world system” and not a separate species, we abandon the rules of progress in favour of evolution. Whereas progress sees the future as a certain endpoint, with man at the centre and a linear path to perfection, evolution is characterised by an uncertain, contextual and unintended future. Each species evolves by adaptation, adopting strategic solutions that guarantee survival in a given context. Similarly, with a rhizomatic, experiential and collaborative approach, anticipation proceeds by differentiation, not imposing a specific direction but leading to radical and emergent changes from multiple perspectives. In this regard, design becomes a “future-oriented act” (Caffo & Muzzonigro, 2018), a creative action for concretely translating anticipation in products, services and systems that foster the delicate process of “adjustment” of individual and collective behaviours and awareness.

Directly related to anticipation, the second attitude of *prevention* aims to emphasise the importance of moving away from a reactive, wasteful and inefficient approach to favour the mitigation of impacts, the management of critical issues and the exploitation of possible opportunities. For these reasons, we should include critical awareness and strategic thinking in design practice. In the first case, this means the ability to analyse situations critically concerning the value we want to give to a project or an action, also investigating the dark side. In the second case, a continuous flow of critical investigation of action starts with assessing the risks involved and understanding the value we want to create to develop a strategy. Prevention is essential, for example, in biology manipulation and engineering: while this may be an advantage from a sustainability point of view, it must be taken into account that biological systems are self-sufficient, self-replicating and interconnected, leading to potentially cascading and long-lasting effects on entire ecosystems and species. The relatively cheap and easy access to biotechnology also makes the potential for misuse considerable, reinforced by other factors such as inadequate biological data protection laws, different jurisdictional value systems and the desirability of biotech markets (McKinsey Global Institute, 2020).

The third attitude identified is *care*, a central principle for sustainable design that goes beyond reducing environmental and social damage caused by our activities towards a more radical and existential attitude stimulated by the awareness of being part of an interconnected system (Ehrenfeld, 2009). Starting precisely from the

Heideggerian concept of 'dasein', Ehrenfeld (2009) asserts that the moment we understand Being as the existence and not as an entity, caring becomes a manifestation of empathy, attention and responsibility towards others and the environment because it makes us aware of the consequences of our actions. As Magatti (2020) also affirms, care is not concerning the intimate or private sphere but is a way of being-in-the-world and perhaps the most crucial attitude to which the entropic model of modernity has disabused us. As underlined by the dual etymology of the word, the Latin *cor urat* (meaning "warms the heart") and the classical *cao* (meaning "to see"), the theme of care has a cognitive scope since it recovers dimensions that we tend to put in brackets, and pushes us to learn – with affection and engagement – the principles and relationships that characterise the environment in which we live. Caring allows us to develop meaningful connections with others and build strong communities. Through caring, we engage in mutual support, respect and promote collective well-being, thereby creating deep and meaningful human connections.

The fourth attitude, *sharing*, is a multifaceted concept understood here as the need to address the complexity and contemporary challenges in a shared, multistakeholder and multidisciplinary manner. It refers to the awareness of inhabiting a shared world that, as a complex dynamic system, owes its characteristics to the causal, reciprocal and interdependent relationships between the parts rather than to the sum of them. In this perspective, new technologies can be a tool that allows us to assume collective and collaborative behaviours between humans, but also human-artifice and human-nature. In fact, sophisticated contemporary technologies can break reality into its basic units - atoms, bits, genes, quanta or perceptrons - and translate data sets from one dimension to another, enabling interaction, development and mutual enhancement.

Finally, the fifth attitude identified is signification, a fundamental element in human communication and in attributing meaning to the world around us. Design can communicate new meanings through objects, products, systems or experiences, from how we use and interact (Norman, 2014) to political messages and cultural meanings (Fry, 2010). Design can help create new meanings for sustainable innovation by communicating new values, stimulating sustainable behaviour, and raising awareness of environmental and social issues through experiences and emotional or participatory user involvement (Manzini, 2015). Today, with technological developments able to 're-write' information at the base of things (computation, nanotechnology, biotechnology, etc.), design reaches the essence of objects and extends signification to the things' materiality: air, water, genes, atoms, bits, and neurons become design parameters, while material or immaterial artefacts become almost entirely designable, from the essence of matter to the qualities of their behaviour.

This intensity of action, which also encompasses the extension of design to more and more aspects of our lives, indicates how design evolves towards a living paradigm in the objectives, approaches and productive models. Thus, the design becomes increasingly aware of the interdependencies rising around an artefact and recalibrates its modes of action and design expression on them.

## Conclusion

Innovation, especially technological innovation, can make our lives easier, but it is equally clear that it can entail risks we must learn to manage. The interrelated condition, amplified by environmental crises and technologies that go so far as to recreate nature, requires a broader reflection on innovation and a proactive and preventive attitude that allows us to develop a new awareness of the reality surrounding us.

Thus, in order to produce innovative and sustainable solutions (also involving biology), designers shall analyse the entire complex and contradictory nature of contemporary design objects: they shall make explicit the benefits but also track the unwanted consequences; they shall take a strategic perspective, focusing on long-term vision and risk mitigation; they will need to employ an experimental approach to change, able to self-correct as conditions change without losing the project's intention.

The goal is to offer visions and scenarios useful for a more mature dialogue on future decisions, in the hope that the discipline's contribution acts as an invitation and stimulus to be – to return to Latour (2009) – “radically careful, or carefully radical”.

**Sabrina Lucibello**  
Architect and PhD, she is Associate Professor at the Department Planning, Design and Technology of Architecture of the Sapienza University of Rome. She is president of the Degree in Design and director of the Saperi&Co. research centre. She carries out research in Industrial Design (ICAR/13) on the subject of product innovation through materials for design.

**Carmen Rotondi**  
Product Designer, she is a PhD student at the Department of Planning, Design and Technology of Architecture of the Sapienza University of Rome. She carries out research in Industrial Design (ICAR/13) on the subjects of Biodesign and Biofabrication and, more generally, on the hybridization between design and science, nature and artifice.

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