Desirable futures
Among living beings

"...knowing the power and the effects of fire, water, air, the stars, the heavens, and all other bodies that surround us, as distinctly as we know the many trades of our artisans, we may employ them in the same manner for every use to which they are adapted, and thus render us the masters and possessors of nature."
- René Descartes, *Discourse on Method*[(1)]

This is the myth, articulated by Descartes during the Age of Enlightenment, which largely established our productive system and the bulk of design's approach to nature. Two main elements can be highlighted here: a definition of mankind as separate from nature, in other words, nature seen as an object, as a resource to be exploited by Man, and scientific knowledge as a method of mastery and control, for utilitarian purposes.
Further proof of this is the involvement of design in productivist agriculture and, more recently, in urban, above-ground, and domestic farming. We can also see its traces in designers' enthusiasm for the production of vases for floral decor, making the frozen still life a decorative standard. Even further proof emerges from the way of seeing space and objects, and now even artificial experiences for leisure: artificial flowers, synthetic materials imitating natural materials, snow cannons, VR experiences, etc.

This view of nature as an object and a productive component, even to the point of being used in an unlimited fashion for the needs of mankind, is being called into question by climate change, the loss of biodiversity, a reduction in fossil-fuel resources, and air pollution.

The coronavirus has also taught us two things about our relationship with the environment: first, the now-substantiated cause of a drop in biodiversity and of a destruction in the ecosystems necessary as a counterbalance to interspecies transmission of the virus; and second, the massive exodus during the lockdown of those who could afford it from urban areas toward rural zones. In other words, contact with other living beings, when our living space is reduced, would seem to be of paramount importance.

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1. Descartes, *Discours de la méthode* (1637), 6th section, Bibliothèque de la Pléiade, Éd. Gallimard, 1966, p. 168.

It is therefore appropriate to emerge from this dualistic view opposing nature and culture, and see humans as influencing other living beings in the same way that non-humans have an influence over us human beings. The very notion of Nature is thus called into question[2], and it would appear more accurate to refer to an environment, ecosystems, and interdependence. This awakening, confirmed by numerous studies, has been guiding the emergence of political ecology and citizen-based or entrepreneurial initiatives over the past several decades. Designers have taken part in these initiatives, notably by posing the question of the resilience and fairness of our uses. Certain design projects are rethinking our management of resources, materials, our consumption, and our manufacturing systems. We will address this track extensively in a separate article entitled *The material instinct*. But this approach also implies rethinking our organizational systems and our uses beyond the question of our relationship with material goods. An awakening to a shared earthly destiny does, in fact, call for new modalities in managing environments, based on sharing; an article, *Our Common Senses*, will be devoted to this approach, which would seem eminently necessary and desirable.

Because it's a matter of transforming how we see living beings and our interspecies relational modalities, we believe that other avenues are ripe for investigation by designers.

Experiencing other living beings

The best way to transform our habits, which are deadly for living ecosystems, is, we can say quite confidently, allowing each and every human to experience living beings. It is indeed contact and sensory knowledge that will change our views, beliefs, and desires. Designers, as creators both of experiences and of intermediary artifacts, must examine how we experience living beings, and the best way to make this possible to the widest audience.

Peter Kahn speaks of a certain generational environmental amnesia: "*the natural environment we grow up in, regardless of its state, constitutes, for each of us, the reference point for what is 'normal' nature. And it's based on this benchmark that we measure changes in nature, later on in our lives. From one generation to the next, urbanization and environmental degradation are increasing, but each new generation considers the diminished level of consideration of nature as a 'normal' level*".

A study has shown that young Americans between the ages of 4 and 10 are instantly able to recognize 1000 brand logos, but don't recognize the leaves of two plants from their own region. This distancing may explain the denial about the loss of biodiversity, due to the fact that individual experience of contact with non-human living beings is not deep enough to attest to it. "*We're still in major denial. The problem is so massive that information, when we receive it, is obscured*", states Anne-Caroline Prévot, reminding us of the theory of cognitive dissonance developed in 1957 by psychologist Leon Festinger: "*In order to avoid psychic danger, the individual needs to maintain a certain coherence between their beliefs, expectations, and actions. When the dissonance is too great, this provokes negation, rejection, avoidance, or forgetfulness.*"

Anne-Caroline Prévot refers to another possible pitfall in this distancing from the living world. While we fabricate tales about the purity of wild nature – *wilderness* – as a world of wonder that remains inaccessible, we simultaneously reject it, because it carries dirt, it's uncontrollable and requires lots of maintenance, it's bad for us, and it bothers us. Entomophobia, the fear of insects, affects seven out of ten French individuals

2. Many books address this matter, such as *Ecology without nature* by Timothy Morton.

Biophilic design: inviting the living world into our living spaces

An initial option in reaction to this impasse is for design to create the conditions in everyday life for repeated, enhanced contacts with other living beings. *Biophilic Design*[3] rests on three main foundations:

- Nature within spaces: a sensory connection (visual, olfactory, sonic, gustatory, etc.) to living elements, a certain variability in temperature and air flow, the importance of natural light and its variations, the presence of water, the seasons and their changing nature, etc.
- Natural analogies: the presence of natural materials, organic shapes, a certain spatial treatment of complexity and order.
- The nature of spaces: for each sensation that is desired, there is a corresponding spatial configuration. Thus, we find it easier to concentrate or sleep in a cocoon-like space where we feel protected; conversely, a bird's-eye view as a visitor or the first time we arrive in a space is reassuring and allows us to find our place comfortably and in good spirits.

These rather simple principles have a measurable impact throughout a number of industries. A study presented in November 2012 demonstrated that a direct view from the windows of a classroom over vegetation outside increased cognitive capabilities by 20 to 25%[4]. We can also note that the presence of vegetation and landscaping increased average rental rates for commercial spaces; clients were ready to pay 8 to 12% more for properties and services set within landscaped zones[5]. And finally, as a last example among many, it has been shown that the level of crime drops 7 to 8% in areas with green spaces and where animals are present, which in turn leads to an increase in 4 to 5% in real estate prices[6].

These principles have largely inspired contemporary urban projects, notably in the greening of rooftops and the return of biodiversity, specifically of insects, to urban areas. For many years now, they have also infused the practices of our own studio. "Greening" and the presence of living things are at the very heart of our thought process for the vast majority of our projects.

Whenever it can, the agency makes use of all the benefits of biophilia, notably in the workspaces it designs, by including natural materials such as raw clay, which is still underused in furnishings and interior design. Working with a living material allows us to restore craftsmanship, applied research, and experimentation to the design and development process, notions and skills that have too often remained absent from major projects. When research on materials is conducted for a project, it naturally flows into other settings, and with it, the artisans that make it happen. This is how the Amaco collective ended up working with us on the elaboration and construction of the design for the retrospective exhibition on the "Prix pour l'intelligence de la main" (Prize for the intelligence of handiwork) from the Bettencourt-Schueller Foundation, which was designed entirely out of raw clay. The collective then set to work creating furniture for the Philantrolab, an office building we designed with, once again, all the furnishings in adobe. Amaco is currently working on the walls of the future brasserie at the Eiffel Tower, now under construction. More than a simple matter of aesthetic affinity on our part, we make the same choice to promote and raise awareness of a material that has become unknown to most of us, as soon as it leaves a rural context. Nevertheless, it features the same biophilic characteristics as wood or stone, which, by the way, is not a matter of substance. Sounds, variations of light, or the presence of water also allow city dwellers to reconnect with the elements. Research conducted on sleep demonstrates, in particular, disturbances in our sleep cycle, which, for thousands of years, was built around the sun and its seasonal shifts.

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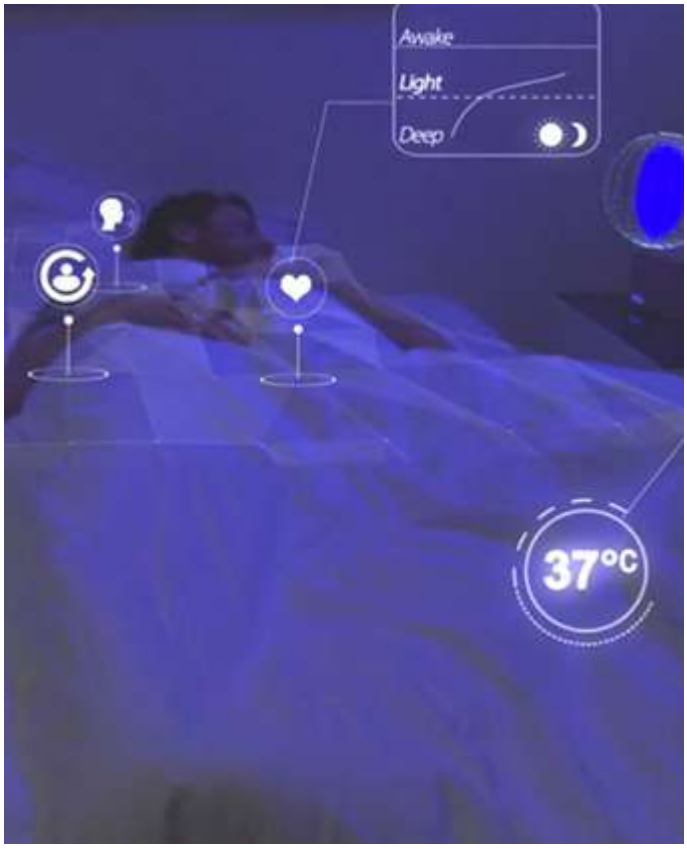
3. *Patterns of Biophilic Design*, Terrapin, internet, 2020, http://www.terrapinbrightgreen.com/wp-content/uploads/2014/04/14-Patterns-of-Biophilic-Design-Terrapin-2014e.pdf

4. Elzeyadi, I.M.K. (2012). *Quantifying the Impacts of Green Schools on People and Planet*. Research presented at the USGBC Greenbuild Conference & Expo, San Francisco, November 2012, p. 48-60.

5. "*The Economics of Biophilia*" (Terrapin Bright Green, 2012) IES CH

6. Nasar, J.L. & B. Fisher, « 'Hot Spots' of Fear and Crime : A Multi-Method Investigation ». *Journal of Environmental Psychology*, N°13, 1993, p. 187-206.

The future brasserie at the Eiffel Tower and the design for the retrospective exhibition on the “Prix pour l’intelligence de la main” (Prize for the intelligence of handiwork) from the Bettencourt-Schueller Foundation. Both projects are designed entirely out of raw clay. developped with the Amaco collective.



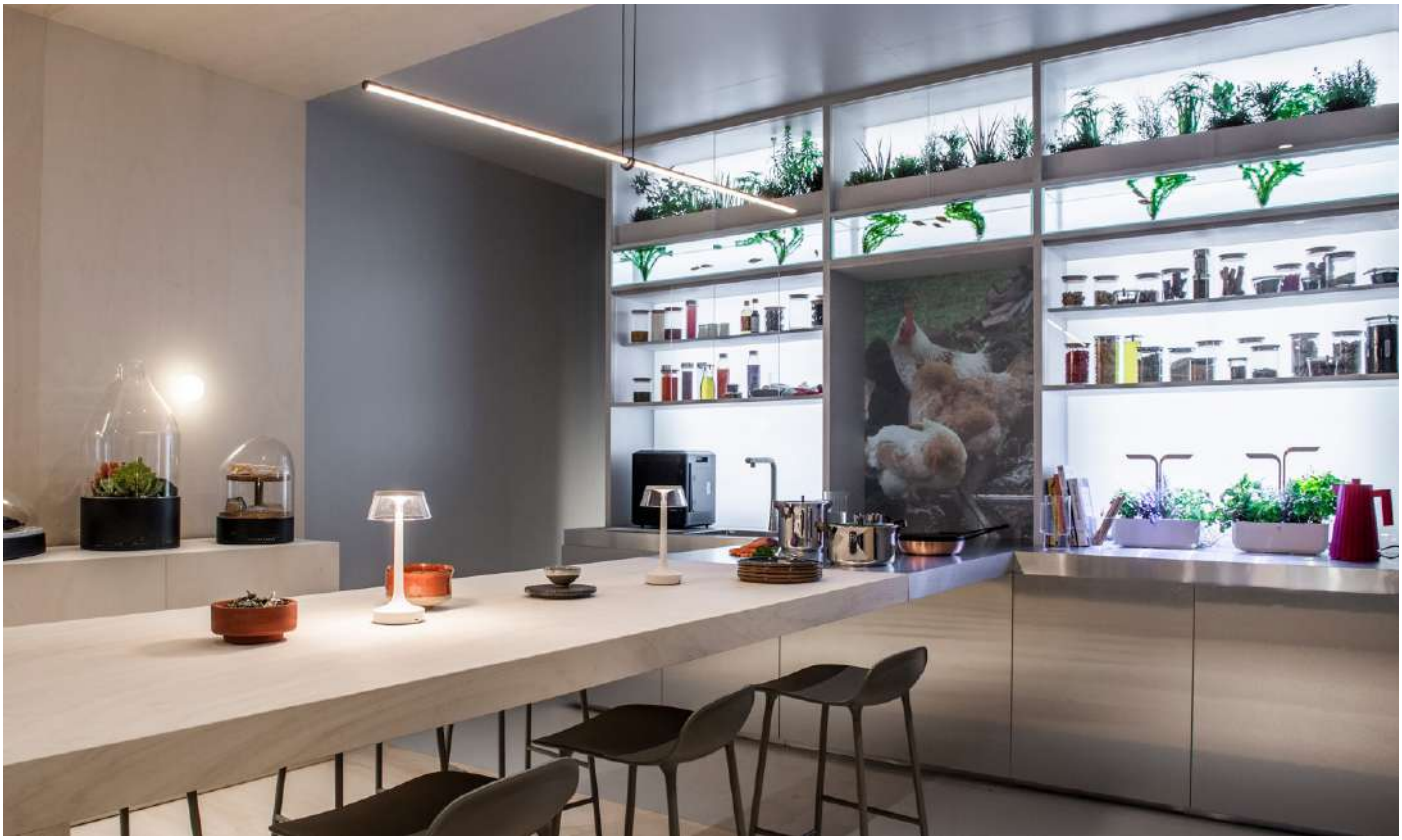
Aura by RF Studio an alarm clock which allowed the sleeper to optimize their sleep cycles

The science of sleep and technology now allow us to remedy difficulties falling asleep or waking up, using pools of light that emulate natural phenomena. In 2015, the studio designed, for Withings, in collaboration with the Sleep Institute at the Hôtel Dieu Hospital, *Aura*, an alarm clock which, by emitting light, allowed the sleeper to optimize their awakening in sync with their sleep cycle and thus soften the transition between these two phases of everyday life that, for most city dwellers, are experienced in a violent and artificial manner.

Bureau des Usages has also been involved in several projects to raise awareness among the general public and professional stakeholders. In 2018, this took the shape of an *Agora* at the heart of the Maison&Objet fair, a public space open to all visitors and designed to promote spontaneous, future-focused everyday behaviors, including those for which some relationship to plants has now become essential. Aromatic and medicinal plants planted within the installation offered pedagogical, practical, nutritive, and emotional benefits. A naturopathic doctor invited visitors to discover the properties of plants that accented the workspaces, to make them aware of all the benefits of their presence, as well as their use, notably in herbal teas and cocktails. In 2020, at the very same Fair, RF Studio and its BU created experimental design fiction project *Design ça tourne*[7]: What if the living space of tomorrow were shared and vibrantly alive? A vegetable garden was envisioned on the roof, to maximize food self-sufficiency. The kitchen, at the heart of this space, was a living zone in itself. While a hydroponic (eco)system allowed for a well-balanced, healthy growing space in its midst, resource management through artificial intelligence allowed for optimal calibration, through zero waste and provisioning, of financial, caloric, and carbon footprints.

7. Over the 5 days of the fair, five experienced actors s(t)imulated each day, within settings representing everyday life and within the rooms of an imaginary co-living space, to provoke reflection on the future, as an exercise in design fiction. Short docu-fictional films, which are currently being edited, will be released within the coming months, inviting specialists and the fair community to question or discuss shifts in their market.

Free access services and amenities proposed on *The Agora* project during Maison&Objet, September 2018



The resilient kitchen developped for the prospective project *Design ça tourne (Design and action)*, Maison&Objet Fair, January 2020

Design can foster the development of this sensitivity to living things. But this challenge, both useful and necessary for all the reasons we've mentioned, cannot conceal the end goal of preserving the biosphere and natural ecosystems, which will not survive through the use of biophilia alone. Reconnecting to our natural environment, awakening to our ecosystems and our interdependence with plants, animals, the cycles and seasons, are all major, essential steps in then being able to act differently. Recreating connections and emotion, banishing fear and preconceptions, and experiencing the joy of understanding and respecting the elements that surround us will, we sincerely hope, allow the coming generations to view their relationship with other living beings in a different way and get more actively involved to intensify or refine it, making choices that today would seem, at worst, impossible, or, at best, heroic.

After biophilia and the creation of material or sensory artifacts that foster a reconnection of city dwellers with the natural environment, it is appropriate to move on to expanding systems and ecosystems that concretely rebalance the power relationship between humans and other earth-dwelling species. As part of this undertaking, which is simultaneously socially conscious, economically viable, and ecologically essential, design fits in with all agents of change. Convincing examples do exist. Founded in 2010 by designer Guilhem Chéron and two associates, *La Ruche qui dit oui* (*The Hive that says yes*) was envisioned as a platform to foster contacts between farmers and consumers, using a digital approach and a sales concept that was truly unique, though in the same vein as local produce markets. In addition to the eminently virtuous local circuit that this system promotes, face-to-face and digital relationships among different protagonists, customers, vegetable growers, and livestock farmers, create a more human-centered, more just, and more transparent transaction. When an ecosystem offers an alternate mode of consumption that respects the environment, incorporating the factors of enjoyment and social values, it is actually simpler for users to accept less consistent delivery arrangements and respect seasonal or fair-price factors for certain foods that are locally produced…

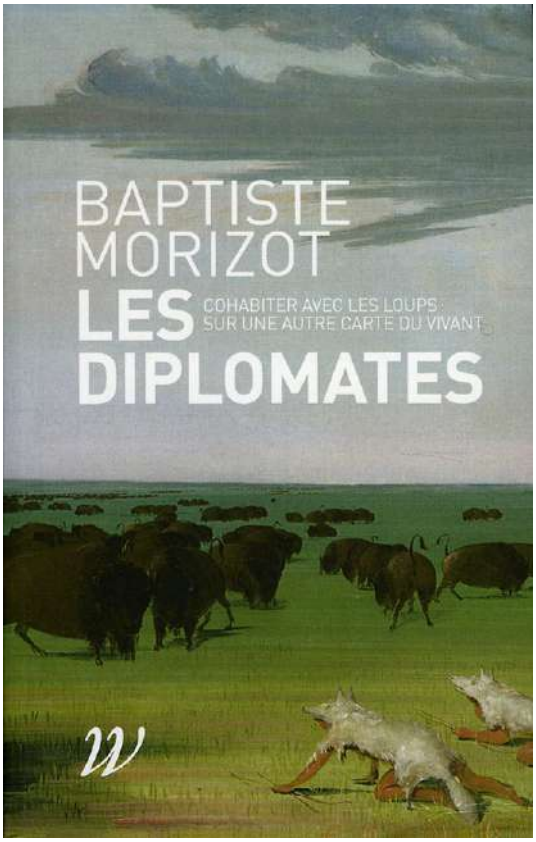
It's this same conclusion that led the studio to get involved in the *Nu !* project four years ago, in start-up mode. This connected fridge project, which promotes a zero-waste philosophy in corporate food service, as well as the implementation of a sustainable product and delivery chain, reconciles the biosphere with our food.

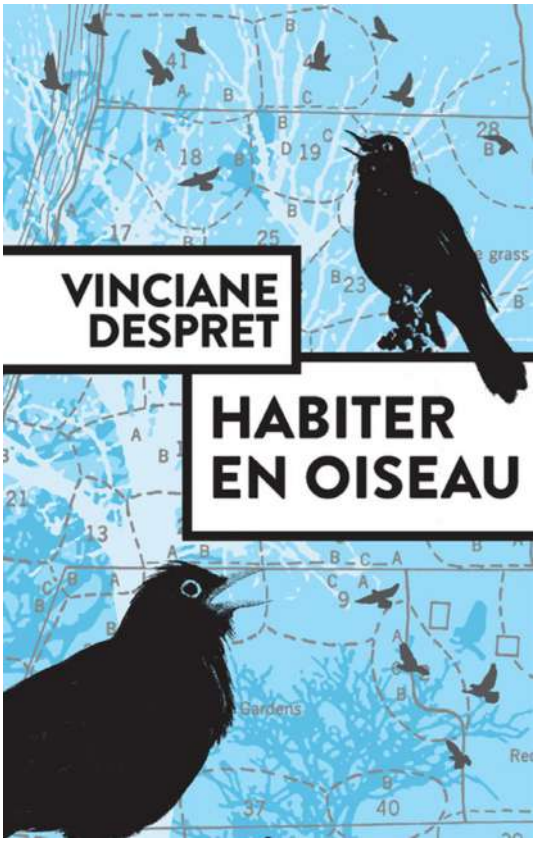
Nu! connected fridge project, which promotes a zero-waste philosophy in corporate food service.

Once again, it's not about creating an object or a single-use product, but rather of connecting several virtuous elements that, once they are linked together in one service, have a positive impact on our everyday lives, while significantly limiting our environmental footprint.

In addition to the food and raw material sectors, other, more forward-looking sectors are, in our view, ripe for design to contribute to.

One of the major challenges of tomorrow, as much to ensure the permanence of biodiversity as to the continued generation of our planet, will be a better understanding of "other" living beings, through communication, through interest in language and the modes of expression of animal or plant species. The modern era has minimized their importance and their value, and has rendered us deaf to them. Animal calls and birdsong are "dead languages" that we need to relearn and try to interpret. We need to translate them so we can understand and be sensitive to them, in order to, in the end, integrate their ways of being and their needs. But we also need to translate their languages in order to negotiate and find common ground. This is the approach taken by many philosophers, such as Vinciane Despret and Baptiste Morizot. The latter, considered by some as the philosopher of wolves, chooses tracking as a way of learning about a certain way of life. His observations have taught him that the true strength of living beings lies in their ability to adapt to their environment. *Canis dirus* disappeared 10,000 years ago from the American continent because it was too powerful: this super-predator so dominated its environment that its unencumbered reproduction rapidly made it deplete its environment. *Canis lupus* was better suited to this environment, even though it was somewhat weaker, because it was more connected to those around it.
Vinciane Despret, philosopher of birds, shows us how birds, through their song and flight, negotiate territories, food collection, and nests among different species: it's a regular "chirp-chirp" parliament.





Les diplomates, Baptiste Morizot, Wildproject 2016 and *Habiter en oiseau*, Vinciane Despret, Actes Sud, 2019

Designers have long been involved in the field of human/plant/animal relations, even though this practice remains rare. Artifacts have been created to allow for relationships to be established, such as apps installed on our smartphones to identify leaves or flowers, recognize the song of a certain bird, or allow us to dwell in a certain landscape, better understand weather patterns, or identify the names of mountains. We're still a long way off from communicating and cohabiting through language, but we can see that, gradually, digital technology tends to forge links that were previously inaccessible to most people. And, as with all technological advances, legal and ethical questions will follow, as well as a need to clarify the rules of coexistence. Seeking new ways to coexist with other forms of life leads to some regulation of our relations, notably legislatively, which is also evolving. All non-human living beings used to be considered by law, using the same old Cartesian logic, as objects. Yet, only an "animate" thing may suffer harm.

In France, Marie-Angèle Hermitte has been observing the evolution of laws governing living beings[8]. The environmental awakening, just like the recognition of characteristics previously considered only human, has gradually advanced the rights of certain animals or elements considered natural. This transition from object to subject, which seems to be happening gradually, is referred to by Marie-Angèle Hermitte as "substantial personification":

"I speak of substantial personification when I notice that non-humans are gaining recognition, legally speaking, of attributes and ways of being, feeling, seeing, or being seen that have long been reserved for human beings. (...) It's through regulations being applied to animals that we will attempt to understand the evolution in legal concepts concerning the personification of living beings."

8. https://www.cairn.info/revue-annales-2011-1-page-173.htm

Whanganui river in New-Zeland

As natural elements are properly living entities, they are subject to harm, and thus have a say in such matters. Here, we can recall the Whanganui river, or Te Awa Tupua in Maori, which was recognized by the New Zealand Parliament on Wednesday, March 15, 2017 as a living entity with its own legal identity, including all attenant rights and responsibilities. We may also refer to the Constitution of Ecuador, which expressly makes nature a legal person, summonable before the courts. And finally, we may also think of the Bolivian natural commons, which are also recognized in their Constitution.

These initial efforts are opening up immense possibilities, a true Copernican revolution, and an imaginary vision to build on; new forms of coexistence may be established due to the capacity of different living beings to interact and negotiate. From this unprecedented understanding, tolerance and compassion may emerge, and, from there, a desire to mutually preserve the wellbeing of the other, once one is satisfied with them as well. In that sense, design will soon be able to create artifacts that facilitate this interaction and these real or virtual spaces for encounters, negotiations, and learning. But design will also have to stand in solidarity with all economic, industrial or technological initiatives that will follow this trend, which is much desired by consumers.

Advertising for Seagram whisky

Never underestimate the power of imaginary visions. Let's take another look back in time, with the collection of ads for Seagram whisky[9] and other illustrations included with consumables early in the 20th century. The brighter tomorrows presented at that time were those where engineering was triumphant and design took control of nature for agricultural production, but also for more leisurely pursuits, such as hobbies or decorating. Designers of the time predicted uses that matched this vision of the future: their predictive scope was impressively realistic. The image presenting the dropping of artificial snow from an airplane could have appeared in our newspapers a few months ago, while certain illustrations showing urban agriculture depicted, a century earlier, projects that are under development today.

What are areas for future action today that will allow designers to refresh this speculative exercise and, thus, reinvent systems and uses that are more in tune with a potentially desirable relationship with the environment and the biosphere? Certains possible pathways are already taking shape, notably in Miyazaki's Japanese manga, such as *Princess Mononoké* or *Nausicaä the Valley of Wind*, where some humans (as opposed to others) manage to communicate with other living beings in their living environments and negotiate the conditions for living together...Spores are thus indicators of the health of an ecosystem they live in; they are messengers of the spirit of the forest. A Hollywood film, *Avatar* from James Cameron, though delivering rather Manichean, warlike rhetoric by focusing on humans and their essential role in the evolution of biodiversity, also constructs a world named Pandora where all living beings, from species with the most highly developed brains, all the way down to plants, form a self-regulating ecosystem and, in doing so, preserve their continued existence. It's through empathy, through experiencing the other, that human Jake Sully becomes aware of this balance and is converted to it in a ritual infused with human-like religious rites. This experience of the other is facilitated by technoscience, the development of an avatar through genetic engineering, and a virtual reality chamber.

9. A series of ads in the press. Each of these ads presented future uses as envisioned by "*men who are think about the world of tomorrow*", men who know how to savor a finely aged whisky. Credit: Agence martienne.

Woodsprites on Pandora - seeds of the Tree of souls - *Avatar* directed by James Cameron, 2009

A contemporary movement in science-fiction writing, Afrofuturism, also offers truly interesting future pathways for environmental matters. Tade Thompson, in the *Rosewater* saga, imagines that extraterrestrials land on Earth in the form of an ectoplasm. After landing in London and being blown to bits, the ectoplasm migrates to Nigeria, and takes root in Rosewater, near Lagos. An impenetrable dome arises there. As a magical organism, it heals incurable diseases, produces free energy, and protects an internal ecosystem in total harmony. Outside the dome, exploration is conducted through the *xenosphere*, a network of invisible mushrooms that scans the planet by connecting itself to all living beings. Conquest does not happen by force, but rather by hybridization. Some humans, the receptors, have access to this parallel network and can communicate with and through it.

It's easy to see how, from a vision of the future and above-ground space, new terrestrial trajectories can emerge and turn the tables on nature viewed as an object, so as to envision, instead, relational modalities with other living beings. Design can thus truly fulfill its role.

"From the pocket of her caftan, she took out a heavy medallion, which she put around her neck. The metal seemed dark and sinister against her skin. 'What is it?', I asked her. She did not remove her mask to answer me. She placed the com wires around her neck and gave me the earphones. Her voice reached me, weak and metallic. 'A translator disk,' she explained. 'I thought you were up on all the latest gadgets (...) 'Hello!,' Siri then went on to say. The translation of her call emerged from the medallion like a stertorous, high-pitched birdsong, coming quickly, borderline ultrasonic. 'Hello!', she repeated.
Several minutes passed before the first dolphins arrived. (...) There was a new moment of silence, then our earphones were filled with buzzing, while the sea reverberated with high-pitched whistles, like hoots."
Dan Simmons, *The cycle of Hyperion*

This excerpt from the universe-building novel by Dan Simmons shows us how technology may allow for a more advanced relationship and enhanced understanding with non-human living beings, in this case, dolphins. The translator/medallion is undoubtedly cartoonish, but it nevertheless sketches out a trajectory for the design of new artifacts, new spaces, and new uses, which designers must make their own: How can they facilitate, through objects and services, communication with other living beings and negotiations with them?

Ideas for radio stories

The fantastical tale could be about a character who, in the years 2050 to 2060, talks about their personal and professional life over the past 30 years. As a student in 2020, he talks about his influences, the key events that marked his youth, and his studies, which led him to specialize in the law of living things, a brand-new field that would take off in the following decades. Through this journey, which the author will be able to freely invent, spaces, tools, and situations (collectively defined among the author, designers, and experts), will anchor the story in reality and open the way for new areas in the field of design: what would be the chosen communications interfaces between humans and other living beings, how would our habits and uses have evolved due to these new relationships, what would be new spaces of representation for living beings (courts, embassies, agoras?), would it require redesigning our cities, supermarkets, or holiday destinations, in light of a new relationship with our environment? What would be the impact on education, on food and nutrition, or on health? Would this improved knowledge of the biosphere make relationships among humans more just and equitable? Such are the many questions that this fantastical story will undoubtedly attempt to elucidate, and which design will try to formalize.