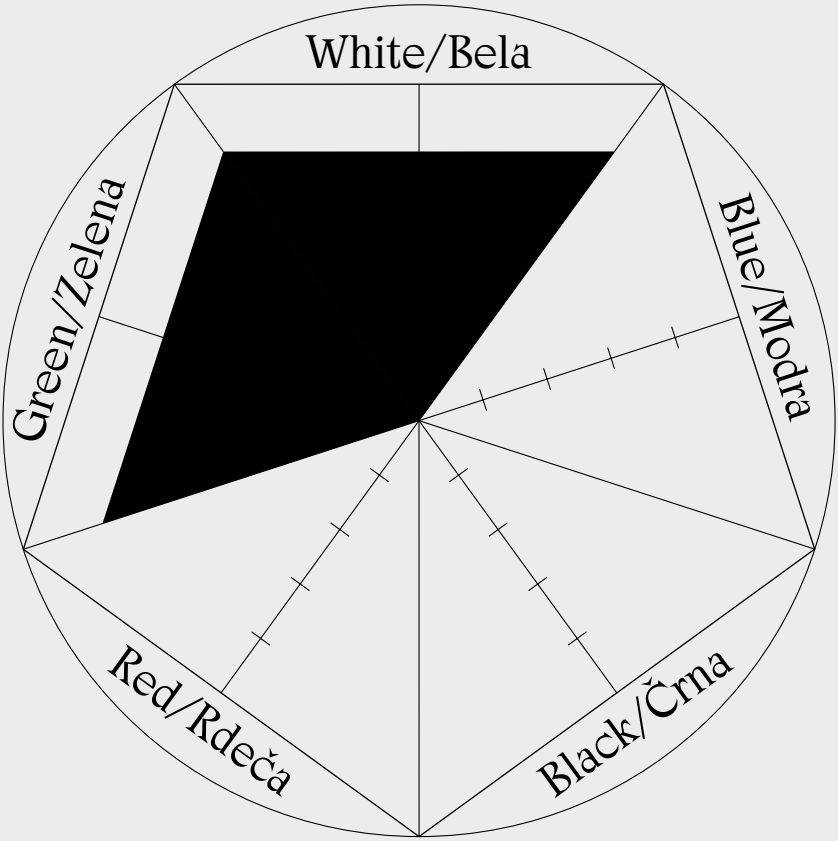
CASE STUDY

6

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE

social design, community, safety, participation

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nature as a model, in tune with nature, regeneration, ecology

BELA

družbeno oblikovanje, skupnost, varnost, participacija

MODRA

ČRNA

RDEČA

ZELENA

zgledovanje po naravi, sonaravno, regeneracija, ekologija

Case Study 6

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CONCEIVING A NEW DESIGN APPROACH FOR THE REGENERATION OF THE NATURAL ENVIRONMENT AND HUMAN NATURE

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In most cases, design still relies on approaches and methods aimed at finding solutions that promote consumption. This typology of design contributes to environmental degradation and deepens social inequalities. Addressing these problems requires new design strategies that have the well-being of the environment and society as their primary objective. The goal of the thesis was to conceive a design approach that would support a better understanding and addressing of current socio-environmental challenges.

STARTING POINT

Broken (human) nature[1]

The impact of human activity on the planet's ecosystem is so drastic that it is altering the geological composition of the planet (Bagley 2013) and leading to largely irreversible consequences, which are emerging at an alarming rate (Carrington 2016). The predominant political-economic system creates existing values and ideologies, which result in destructive behaviour, and is therefore at the core of the problem (Salecl 2011, 9–10). As Lašič Jurković and Repenšek explain, a number of data indicate that the

① The concept was developed to submit an application for the XXII Milan Triennial, themed *Broken Nature: Design Takes on Human Survival*. Part of the text was previously published in a book released in conjunction with the exhibition bearing the same title as the triennial edition. Tamara Lašič Jurković in Valentina Repenšek, Obnavljanje zlomljene (človeške) narave, as cited in: *Misliti pogoje našega časa* (ed. Barbara Predan), Ljubljana 2019, pp. 133–141.

system creates the deceptive illusion of constant growth as a prerequisite for the population's well-being and satisfaction (Raworth 2017, 26), while disregarding the fact that this is unattainable on a finite planet (Monbiot, 2020). This is why, according to the authors, there is a need for alternatives that will set new goals and support new values, thereby promoting different behaviours.

The main cause of the behaviour causing broken nature—as the organisers of the XXII Milan Triennial called the environmental crisis—is broken human nature. Human nature can be understood as permanent, and the way it is influenced determines how it is reflected in an individual's actions and their impact on others/their environment. It is therefore a biological predisposition influenced by external factors that we co-create (Fry 2012, 92). These factors, once natural, are today man-made, i.e. artificial—both in terms of the physical environment and the social construct (Dilnot 2014, 188–189).

The planetary ecosystem is inherently efficient and self-sufficient. Humans are part of this system and dependent on it; this is not intrinsically problematic, although issues arise when human interference in the environment exceeds the planet's capacity for self-renewal (Dryzek 2018, 40–41). As Tony Fry argues in his work *Becoming Human by Design*, the steady growth of the artificial environment started causing interference during the Enlightenment. During this period, also known as the Age of Reason, man became aware of humanity's potential and—driven by the desire to dominate nature—began to over-exploit it in the pursuit of advantage. With the rise of the Enlightenment and the constant drive to surpass the limits of one's own capacities, a new centre became established as the focal point of the coming era: man (Fry 2012, 22).

Today, the values of the predominant capitalist system, such as individualism, competitiveness and anthropocentrism, exert a marked impact on some of the natural human qualities needed for survival; anthropocentrism suppresses our empathy, and individualism contradicts our natural tendency to form communities, while competitiveness further fosters fear and human selfishness. Or, as Lašič Jurković and Repenšek also point out: we act contrary to our nature, which results in destructive actions and attitudes towards the environment.

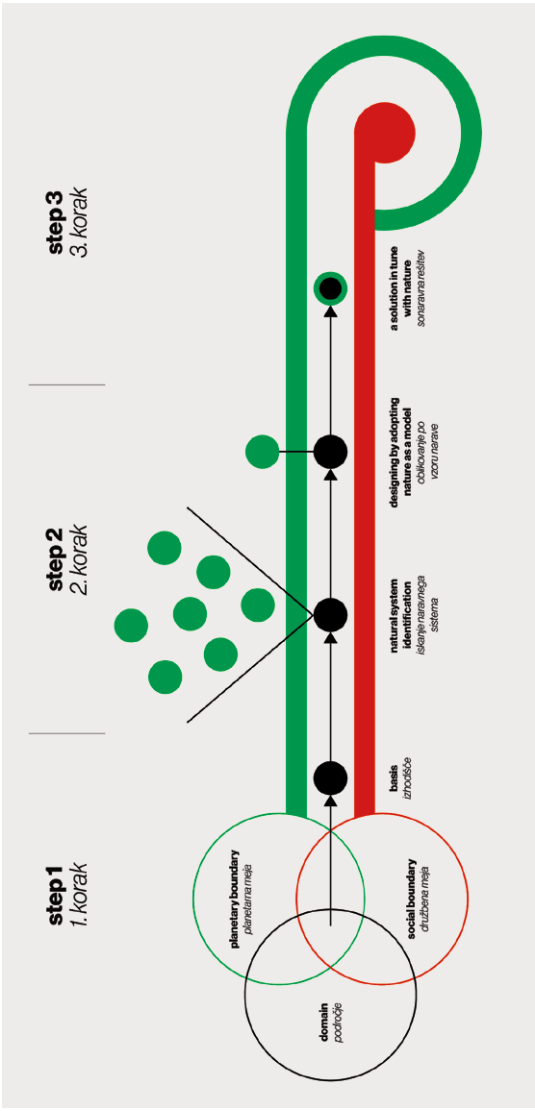

FIG. 19

Tamara Lašič Jurković and Valentina Repenšek, scheme of the design approach for the regeneration of the natural environment and human nature, 2020.

Tamara Lašič Jurković in Valentina Repenšek, shema oblikovalskega pristopa za regeneracijo naravnega okolja in človeške narave, 2020.

FIG. 20

Tamara Lašič Jurković and Valentina Repenšek, prototype of a chair renewed in accordance with the REsense principle, 2018. Photo: Aleš Rosa

Tamara Lašič Jurković in Valentina Repenšek, prototip stola, prenovljenega po principu REsense, 2018. Foto: Aleš Rosa.

The consequences of a system based on endless growth

The capitalist system is essentially based on the exploitation of the planetary ecosystem. As such, it presumes infinite growth on a planet that is not growing, which results in accelerated environmental degradation. In 2019, the date when humanity's resource consumption for the year exceeded the planet's ability to regenerate those resources was July 29 (Global Footprint Network 2019). Our consumption of resources is accelerating every year. Rituparna Sengupta writes:

> The estimated level of resources and ecosystem services required to support human activities today is just over 1.7 Earths, fast moving to becoming 2 Earths by 2030.

In his work, *The Politics of the Earth*, John S. Dryzek furthermore points out that for several centuries it seemed that unconstrained economic growth was the natural order of things, and social survival in finite systems was simply not conceptualised. Around 1970, the issue became increasingly apparent with accelerated population growth; this trend increased the awareness that combined with economic growth, population explosion was going to exhaust stocks of energy, cropland, clean water, minerals and the assimilative capacity of the atmosphere and oceans (2018, 40–41).

Dryzek illustrates this by drawing attention to the essay *The Tragedy of the Commons*, in which Garrett Hardin, based on the example of the common land, explains the simple logic governing the village commons:

> Facing a decision about whether or not to put an extra cow on the village commons, each rational self-interested peasant will recognize that the benefits of the extra cow accrue to himself alone, whereas the costs (stress upon the commons) are shared with the other villagers. Thus all villagers will quickly put more cows on the commons, which will in turn be destroyed. Hardin was using the commons of a medieval village as a metaphor for all kinds of environmental resources [...]. So each decision maker deciding whether or not to catch an additional netful of fish, or dump an additional ton of sewage, or cut down a tree, or drive an extra mile in Los Angeles,

> or get that malfunctioning catalytic converter fixed, is facing essentially the same decision: private benefit and the public interest point in opposite directions. […]. Of course, all this is only tragic if the commons is finite—that is, if there are limits. If there are no limits, we can populate, grow, and consume at will. (Dryzek 2018, 40)

In this regard, Lašič Jurković and Repenšek recognise the concept of the nine planetary boundaries—developed in 2009 by a group of 28 internationally renowned scientists led by Johan Rockström (Stockholm Resilience Centre 2015)—as an important step in outlining the environmental issues. It was designed to provide a better understanding of our planet's capacities, with the aim of enabling decision-makers and other key social stakeholders to more efficiently catalyse the changes that are essential for our survival as a species. This concept defines nine planetary boundaries, each representing a vital life support system for sustaining life on earth, that together define "a safe operating space for humanity". Boundaries act as a warning, indicating that their crossing will endanger human species, while also serving as a tool for decision-makers to identify the safe operating space for humanity (Dryzek 2018, 47).

But as Lašič Jurković and Repenšek point out, it is wrong to assume that environmental issues can be addressed without considering the social dimension. They describe the interconnection of both aspects by employing the concept of the doughnut economy, in which Kate Raworth (2017) combines the nine planetary boundaries with eleven social domains. The diagram, which resembles a doughnut, clearly presents the reciprocity and interdependence of environmental and social aspects. While planetary boundaries concern overshoot values, social boundaries are, on the contrary, associated with shortfalls. The transgression of any planetary boundary has a direct or indirect impact on people's lives. Therefore, environmental problems cannot be addressed without taking into account social problems.

It is at this point that, according to Lašič Jurković and Repenšek, the field of design becomes relevant. It, however, too often operates influenced by the current economic and political system, pursuing the aim of uncritical production of marketable products or, in the case of design studies, marketable human resources. In the field of design, success is still too often measured in terms of the apparent satisfaction of the user, which ensures continuous consumption and thus the perpetuation of the existing system. Too many design degree programmes are still based on training that is focused on understanding consumer preferences and constantly

creating something newer, better, more appealing and more convincing. The never-ending design process—just like the system in which it operates—disregards the long-term negative effects of its activities.

In contrast to what has been described so far, Lašič Jurković and Repenšek recognise in the doughnut a compass that could guide designers in identifying the issues that need to be addressed and the starting point from which to undertake regeneration in order to restore the lost balance. They furthermore argue that it could also provide a benchmark for evaluating our actions (not only in the field of design), as it points to the impact that our actions exert on the environment as well as on the individual and society.

RESPONSE TO THE IDENTIFIED ISSUES

A design approach for creating a balance between the natural environment and society

Design is essentially an activity of creating the artificial in which designers not only decide what to create but also have the ability to foresee, to some extent, the consequences of their own work. Therefore, according to Lašič Jurković and Repenšek, designers should focus even more on creating the right conditions for our survival. The future of producing what is today usually referred to as the artificial, i.e. the future of the process known as "design", should become natural and sustainable. Or, as Rachel Carson emphasised as early as the 1960s in her book *Silent Spring*, interventions in the natural environment should be guided by natural principles. Humans should be aware that the natural environment is highly diverse and has built-in defence mechanisms to establish balance and control the relationships between living things (Carson 1962).

Over millions of years of evolution, nature developed tried and tested systems, which demonstrate balanced functioning. These natural systems (e.g. mycorrhiza, pollination, evapotranspiration, symbiosis), which are completely sustainable, self-sufficient and functional, can serve as models for human designs. It is important to note that the proposed approach goes beyond the mere imitation of natural processes; instead, it builds on transposing the insights concerning the functioning of natural processes and mechanisms that govern the establishment and maintenance

of balance, as this is the only method to ensure long-term, functional results. This is particularly true of all those areas where environmental and social boundaries are already significantly overshot, therefore they require regenerative solutions.

The authors stress that regenerative design implies much more than a sustainable approach. The latter, in fact, merely maintains the current status by not causing further damage, whereas regenerative design entails a holistic view of living systems and requires active engagement with the natural environment within ecosystems (Wahl 2017).

While regenerative design concentrates especially on ecosystems, the challenges of the inner, social segment of the "doughnut" are addressed by the so-called social design. Nynke Tromp and Paul Hekkert (2019) in their book *Designing for Society* write that the role of social design is to help mankind, or, in other words, to serve the common good. "It requires a shift away from thinking about *what* to design, and towards the *value* the design will achieve – and how it will achieve that." (Tromp 2019, 24). The authors of *Designing for Society* also argue that a better society requires a redefinition of relationships, the establishment of new ties and a transformed understanding of both the natural environment and human activities within it—that is to say, it requires a change in the behaviour of individuals. Design has the power to create the infrastructure and conditions necessary for the realisation of our newly formed beliefs, values and attitudes (Tromp 2019).

However, according to Jurković and Repenšek, it is necessary to be aware that designers cannot achieve this in isolation and independently from others. On the contrary, in the context of designing for society, a participatory approach is essential; it is characterised by the inclusion of people who will potentially be affected by the project's outcome in the design process. As Ezio Manzini underlines, it is necessary to accept that design experts are co-creators of a broad design process that they can trigger, support, but not control. In this way, they can become effective agents of change, contributing to its realisation through their activity (2015, 67).

↪ Homo sapiens, it turns out, is the most cooperative species on the planet, outperforming ants, hyenas, and even the naked mole-rat when it comes to living alongside those who are beyond our next of kin. [...] [A]long with our propensity to trade, we are also drawn to give, share, and reciprocate. That may be because cooperation enhances our own group's chances of survival. (Raworth 2017, 104)

As Lašič Jurković and Repenšek further point out, the designer has to sow the seeds that change behaviour and build a better community—in other words, help to regenerate our human nature. Co-design, participatory design and other practices that empower individuals and the community are therefore in line with human nature, while at the same time fostering and regenerating it. Such "seeds" enable the establishment of new relationships and strengthening of the social fabric, and thus contribute to building an alternative to the currently predominant capitalist system.

In the master's thesis, the authors, drawing on these observations, developed a new design approach to regenerate the natural environment and human nature, which can serve as a means for designers to comprehend the complexities of the climate and societal crisis, stimulate research into the workings of the planetary ecosystem and provide guidance for maintaining the balance between the natural environment and society. The authors organised the devised process into three steps. The first two steps involve new tools—the doughnut and adopting nature as a model—while the third step is based on established design methods. (FIG. 19)

The aim of the first step is to define the planetary and social boundaries and the scope of the design. The foundation is laid by understanding the individual planetary and social boundaries and their interrelatedness. In practice, this means that we primarily select the boundaries and the domain to be addressed by the project (if there is the possibility of independent choice), while in the case of a commission with a predefined scope, the choice should align with the project's desired impact. The selection of planetary boundaries is followed by the identification of connections with social boundaries, i.e. the focus shifts to recognising the boundaries that influence each other. Once all three interconnected components are selected, step 1 is complete. The selected boundaries are consistently considered also in the following phases of the development of the project and are used as reference for a continuous evaluation of the evolving project.

The key aspect of step 2 is that natural processes and systems guide project planning. As the authors explain, this step begins with identifying examples of nature's inner workings—these include relationships within ecosystems, principles, natural laws, characteristics of organisms, etc.—that will provide a model to be translated into designs. It is important to explore these examples in depth, trying to comprehend the underlying logic governing them. This, in turn, informs the selection of the example from the ones examined, whose logic can be applied during the development of a specific project in order to achieve effective and sustainable solutions.

Step 3 is adaptable to various types of projects and follows the phases of established design approaches. It includes research, synthesis, ideation (by applying the logic of natural systems), planning, prototyping, implementation, testing and evaluation. The particularity of this step is that it requires constant monitoring of the project's alignment with both the selected planetary and societal boundaries. Due to the consideration of social boundaries, it is crucial that this phase of the design process incorporate the understanding of stakeholders and end-users needs and preferences by adopting a range of inclusive methods.

The approach for the regeneration of the natural environment and human nature thus combines the following parameters:

- ↪ the concept of the doughnut, allowing designers to direct their work towards tackling socio-environmental issues
- ↪ regenerative and social design as tools for addressing these issues
- ↪ relying on natural systems as models which provide designers with environmentally sound examples of functioning

The process especially appeals to designers who have an affinity for environmentally and socially responsible design but have been lacking appropriate tools to put its principles into action. This approach is innovative because it integrates existing concepts, studies and principles into a cohesive and practical holistic framework.

Lašič Jurković and Repenšek tested the conceived design approach by applying it to a design project. As the focus of the practical component of the thesis they selected the furniture industry, a field that with shifting trends and reliance on inexpensive materials has become increasingly oriented towards fast consumption. Moreover, during the course of their research, the authors found that the furniture industry has an intense impact on three planetary and three social boundaries. Therefore, to address the issue under consideration, they selected as a model a natural process that enables the survival of a species through changes in behaviour. The authors conceptualised a furniture renewal service that utilises waste material while also fostering the creation of emotional value and long-term user relationships, thereby extending the lifespan of the products. **FIG. 20**

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