

Covid-19 and the emergency of new economies for the design of a new world

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ABSTRACT

The Covid-19 pandemic situation has proven the fragilities of current human lifestyles. The previously established patterns, as they were formerly, generated work and income based on production and consumption through a predominately linear type of economy demonstrated to be unsustainable. The necessity of social isolation has undermined the structures supporting this model. In this context, this article aims to resume the emergency for finding new ways of thinking and acting in the economy exploring emerging views. A comparative framework was constructed as a result, based on four models of new economies. It has arisen from the end of the XX century to the beginning of the XXI in the literature. Design evolution is also related to the circular, distributed, creative, and regenerative economy as an agent for change. In conclusion, the authors reported on strategies and actions created during the pandemic to collaborate on views posed by the new economies and design culture that are continually being transformed in the eminence of contributing to a new material immaterial world.

Keywords: Circular Economy, Creative Economy, Design Culture, Distributed Economy, Regenerative Economy, World Pandemic.

INTRODUCTION

The reduction of production and consumption from social isolation due to the Covid-19 pandemic shows the unsustainability of current economic systems. Businesses could not convert their operational methods to become more flexible, and large-scale industries reduced their work shifts and salaries or put massive layoffs into effect. The National Industry Confederation (CNI) in Brazil stated that 76% of the industrial sector was reduced or paralyzed due to the pandemic (Costa, 2020). 77% of business owners have identified a reduced supply of raw materials and inputs for production due to the logistic structure's disorganization as well as the decreased demand. Furthermore, the Brazilian Micro and Small Company Support Service (SEBRAE) performed a study stating that at least 600 thousand micro and small businesses have closed, and 9 million employees have been laid off by the beginning of April 2020 (Brotero, 2020). If, on the one hand, the stagnation of economic activities can be responsible for the seriously impaired Brazilian condition, on the other hand, a series of environmental gains worldwide have been seen.

Data from the São Paulo State Environmental Company (CETESB) has pointed out that the pollutant index released directly into the air decreased 50% during the first week of the

mandatory quarantine in São Paulo (BBC, 2020). Countries like China, Italy, the United Kingdom, Germany, and many others, have experienced decreases at about 40% in carbon dioxide levels, thereby improving the air quality and reducing the risk of asthma, heart attacks, and pulmonary diseases (Watts, 2020).

It demonstrates there is a false sense of control by the human being regarding nature. In an anthropized view, it is difficult for the human being to see itself as a part of an ecosystem, where living beings and also microscopic beings belong. All organisms belong to the world ecosystem; however, it has been dominated by human beings (Paital, 2020). The fast spread of the Covid-19 disease revealed the physical-biological dimension of the world, making it necessary to extrapolate sanitation practices, ranging from personal hygiene to disinfecting entire cities and all possible objects that may be touched (Doremalen *et al.*, 2020). All this even forced us to see how society protects itself against its attack through strategic visions of human wars. Still, it is not prepared to fight against humanitarian crises. This one is specifically caused by a microscopic agent.

Also, renewal exceeds natural environments. Several businesses were reinvented, adapting to digital, and adopting new models to face the economic crisis. The 2nd edition of the study "The impact of the coronavirus pandemic on small businesses" showed that 31% of small businesses in Brazil had changed their operation method, mainly adopting deliveries, online transaction methods, and home office (Sebrae, 2020).

These facts lead us to a dichotomy: those who accept this new reality, adapting to it, and creating new relations to other pre-existing economic systems, in contrast to those who deny these changes and continuing the way things worked previously to the pandemic (Rapaccini, Saccani, Kowalkowski, Paiola, & Adrodegari, 2020). In this context, this study takes direction in Manzini's view from two decades ago, which pointed a transition to a desirable path towards a sustainable society in the ways they operate (Manzini, 1999). This author say it is necessary to learn to live and live well, learning how to compete while decreasing the production and consumption of goods. Thus, we present the author's point of view that converges with our thoughts:

And if a change takes place, what before appeared as impossible can emerge as a new possibility and, eventually, become the new standard. [...]In fact, "the new", when it is really new, usually appears in a point of the horizon different from the one everybody is looking to .

Seeing the new that is challenging the dominant paradigm, the author confirms it is necessary to look towards a different direction. That fact can show that change is possible, creating tension between the old and new paradigm.

The text "Prometheus of the Every Day" by Manzini & Cullars (1992) already warned about the necessity for changing the way we think and act about things and the relations we define among them, the people, and the world itself. These authors counselled and said:

To say that this is the world in which we must intervene does not mean accepting it as it is. It means understanding how it appears, how it is made up, and the problems that threaten it; regardless of what we want to achieve, this is the "material" with which we must work (Manzini & Cullars, 1992, p. 6).

Besides this publication, Manzini introduced other views in this article, promoting a link between new economies, design culture, and the "make see" of the Covid-19 pandemic. "Make see" is a capacity that supports strategic action by making the field of the possible visible (Zurlo, 2010).

This article fits this vision, pointing how the strategic actions created in the pandemic can collaborate in changing ways of thinking and acting on four concepts of new economies, namely the circular, distributed, creative, and regenerative economy. We analysed strategy changes forced by the pandemic and constructed a comparative framework on the four mentioned economies and their relations to the new design approaches. To this, we consider design evolves as a response to the constant demand for new ways of designing drivers, organizational strategies, and ways of living more collaboratively and sustainably in their multiple relations with the world.

1. THE "MAKE SEE" OF NEW ECONOMIES IN A PANDEMIC

Much of these new economic concepts became noticeable as necessary actions of change due to the emergence of the Covid-19 pandemic. These actions are tangential to new manners of thinking and acting with the world and the relations established within it, among things, people, and the environment. In this section, we will first discuss the circular economy, then the distributed or bioeconomy, the creative economy, and, finally, the regenerative economy, a concept that is becoming evident during the pandemic.

1.1. Circular Economy

demonstrates that actions considered pillars of the circular economy are not new but have been commonplace since the Industrial Revolution. Nevertheless, the circular economy concept is still fragmented: there is no profound discussion on its foundations, frontiers, limitations, and methodology . Despite this, the Cradle to Cradle Products Institute® (C2C) has contributed significantly to the cradle to cradle theory by proposing the circular economy concept based on the design process to think of solutions for the entire production chain. They range from materials to products, by two cycles, a biologist, and another technician .

The lockdown imposed by the pandemic severely affected the closed cycles, pillars of the circular economy. It has been difficult for eight out of ten industries to purchase inputs and raw materials and distribute products, even though the national borders are open for shipping cargo. Another vital aspect is the recycling processes, strongly affected by the pandemic. The report of illustrates these issues on recycling cooperatives: from 800 thousand to 1 million recycling scrap pickers in Brazil who were forced to a standstill in their activities. One of the interviewed scrap pickers revealed the cooperative reality she works: material that has been screened is also on hold. There are at least 15 tons of material ready for sale, but the circular economy wheel is stagnated. This scenario conducted us to converge on the idea that governments are recognizing the need for national-level circular economy policies in many aspects .

1.2. Distributed Economy

This type of economy is also related to the idea of cyclical processes. However, it has proven to be a more resilient model since it allowed the maintenance of production and consumption. The constitution of the distributed economy is a modular and multipliable concept. Each production module, unit, or location is its node linked to other nodes based on the necessities . In this case, the power comes from the community and the local potentialities. It differs from a centralized economic system or even a system

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decentralization, that still maintains a vertical direction of power and demands from top to bottom. The distributed economy requires the simultaneous development of local production and distribution models, considered as a bio-economy, avoiding long-distance shipments, contrary to a scaled economy, whereas, in a distributed economy, the goods are produced locally, with value, in closed circuits and networks .

To illustrate this, we present the "*Salvador da Páscoa*" (Easter Savior) platform and the "*Lá da Rua*" (There in the Street) network. The first is a non-profit entity, whose purpose was to connect chocolate consumers to local confectioners. The intention was to help micro and small businesses going through hard times . The second initiative is from Fortaleza, Ceará State. The objective is valorizing micro-business owners' work and narrow their relations to customers while promoting alternatives for enabling donations for people who are in socially vulnerable status . In turn, that initiative is supported by the Covid Solutions Community, a platform that provides support for leveraging innovative projects for fighting the crisis of Covid-19 .

1.3. Creative Economy

The creative economy is a proposal in which the other two presented concepts can say, 'drink from the source.' However, the difference is the human creative capacity is for leading complex processes for changes and adding value through perception and interpretation. Both human creativity and added value are fundamental guidelines for the premise that everything is more than the sum of its parts. In other words, it seems to recognize that interpretations generated by perception make everything more complex . Thus, the creative economy is the attempt to understand the world's complexity so that creativity, innovation, and risks become determining factors by establishing competitiveness, social and environmental demands, and the notion of value .

After the creative economy arose in the United Kingdom in 1997, based on the idea of creative industries linked to specific professions and intellectual property, it was disseminated by Rifkin (2001) and Howkins (2001), and its importance is becoming recognized throughout the world . In general, the creative economy is the "sum of production and the commerce of goods and services providing knowledge and creativity, or in other words, the symbolic and intangible contents as a cutting-edge difference" . Also, creative industries are linked to cities' economic restructuring, fostering urban regeneration, development, and creating jobs . Finally, it can be a manner of evaluating the scenarios of rapid changes and designing for uncertainties.

Since companies and people needed to reinvent their ways and means to remain economically active during social isolation, it progressed to social distancing. The creative economy has been essential at these times. In this context, we highlight the following examples:

- In the production of products: General Motors, Embraer, and SENAI began producing pulmonary ventilators in their factories . Another example is face shields production for health professionals, due to a partnership between Creative Industry Laboratory – FabLab – from University of Sinos River Valley (UNISINOS), and Brothers in Arms 3D Printing group .

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- In the field of entertainment, culture, and public administration: #CulturaEmCasa project, an initiative of the São Paulo Ministry of Culture and Economy, made more than 160 multimedia content options available, including online exhibits from many museums .
- In education: professors worldwide had to reinvent to transform classroom classes to e-learning, thereby accelerating the digital transformation process foreseen throughout the XXI century in one day. The UNISINOS suspended its classes for only one day, and the next day returned totally in digital mode.

1.4. Regenerative Economy

The verb regenerate originates from the Latin word *regenerare*, which means reproduction and revive . In this context, this emerging term conveys the idea of an economy based on a second meaning. A business must allow the regeneration of environments that have been degraded or produced vulnerable societies, as well as its profits.

The concept then seeks to act on well-known stated problems, defining them through their complexity and adopting an ecosystem view. However, there is no clarity about what it exactly means. For example, Diez, Marangé & Levrat (2017) proposed a regenerative paradigm based on a circular economy. That point of view differs from Galvão (2017), who refers to the regenerative economy as "a philosophy that proposes to employ economic powers to help heal the afflictions of the planet. It goes way beyond preaching to businesses to respect natural limits. The objective is to foster economically feasible ideas to help solve the existing problem". This approach is also endorsed by Kate Raworth, author of *The Doughnut Economics*, considering the regenerative economy as transforming the present-day economy, degenerative in itself .

An example related to this concept in the pandemic is the partnership signed by WEG S.A, an electric equipment manufacturer in Santa Catarina, Brazil, and the German company LEISTUNG, a manufacturer of Medical-Hospital equipment. The technology transfer agreement signed between them enabled WEG S.A. to produce locally artificial respirators for treating Covid-19 patients . We see it as regenerative action since it diverges from the company's core business and fosters the recovery of social well-being in that region. Another example is the Noknox Company that produces condominium technology systems. The company created the "Vizinho do Bem" (Good Neighbor) app , a collaborative network to supply elderly quarantined and other people who need help during the pandemic. Through this platform, users can choose to help or ask for help, and by mapping the location, the platform connects people who are willing to help people to those who need help. It seems to be a way of acting to regain human compassion. Both examples converge to the objective of fostering economically feasible ideas to help solve existing problems and view the regenerative economy for solving problems beyond company boundaries.

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2. RELATION BETWEEN NEW ECONOMICS AND DESIGN CULTURE

Based on these new approaches' conceptual understanding, we present a comparative framework between these new economies in Table 1. Here, we discuss their directions, implications, and relations with the design culture, which considers new ways to think and act on the world. Manzini & Cullars (1992) have already signaled design as a way to understand the complexity and work within the constraints of the planet, by starting to

adopt a new attitude, a new ethic of action . That change in design approach demands a profound shift in the design culture configured by designers' respective cultures and the communities they operate. The dialog is derived by multiple players, more from the physical and virtual universes (blogs, books, conferences, universities, and others) on design and the meaning of its processes .

Table 1. Relations between new economies and the evolution of the design culture (Authors, 2021).

Economies	Direction	Implications	Design Evolution
Circular	Promotion of closed material and energy cycles.	The improved harnessing of natural resources and decreased emissions of pollution in the production chain and post-consumption	From industrial design to ecodesign and strategic design for sustainability (Manzini & Cullars, 1992; Manzini, 1999; Meroni, 2008).
Distributed	Distributed networks, bioproduction, and increased resilience	Reduced shipping distances, profiting from local potentialities	Design for sustainability and social innovation (Manzini, 2008).
Creative	Human creativity, design for uncertainties, and restructuring cities	Empowering cultural and technological production, improving services and personal development	Diffuse design; specialist design; and co-design (Manzini 2016).
Regenerative	Socioenvironmental problem-solving complexes make them live again	Social development and integral revitalization of society and the environment	Emergent design; autonomous design; and regenerative culture design (Manzini, 2016; Escobar, 2018; Wahl, 2019).

From the industrial revolution up to the XX century, design has assumed a simplistic approach: a process focused on designing objects, whereas all the attributes were preplanned. However, in the XXI century, the design process started to affect several factors: the difficulty to foresee and designate players during the project; behaviors that are impossible to plan. Then, the turnaround was the discovery of losing control in facing the world's complexity – Manzini views the introduction of "Design for Services" from .

Based on Maturana & Varella's (1980; 1993) view, Manzini (2016) considers two types of worlds, the physical-biological and the sociocultural, in the entire design process. The first is "where human beings live and artifacts are produced and function" (p.55); the second is "where human beings interact through language, and things assume meaning" (p.55). In the view of Manzini (1999), thinking about new products and new consumptions means we are still acting as in the old world, where the dominant paradigm is the production of goods and consumption. For this narrative of 1999, Manzini pointed out the attempt for strategic design to act on the constraints of the planet, introducing the idea of integrated development for a Product Service System (PSS). In this system, short-term strategies for sustainability are advances related to the concept of making something today for today, but anticipating tomorrow, bringing the future to the present. From the long-term strategic point-of-view, these are the most direct and immediate ways of change (disruptive) that demand a great deal of incentive and are challenging. These are to take the present to the future, making something new for tomorrow. , in an almost ten-year analysis, since the very beginning of strategic design, confirms that there has been an evolution in design centered on the user for design focused on the community. The author further explains that the entire strategic design is a PSS design, but not all PSSs are strategic designs – this makes a system evolve and they are not just simple development. Within this context, "design for sustainability is the strategic design capable of putting into effect promising local discontinuations, contributing to effective systemic changes" . Here the author had already started to coin his idea of social innovation.

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Just one innovation is capable of promoting changes in patterns until they are established. Since the concept of social innovation, there have been "changes in the way individuals or communities act to resolve their problems or create new opportunities" (Manzini, 2008, p. 61). In design for social innovation, the process for development is generally generated horizontally instead of vertically and demands emergences from bottom to top instead of from top to bottom. This way of thinking and acting relates directly to the distributed economy concept, also considered by Manzini as a social economy.

Thus, the author introduces new design culture changes; it is a dialogical mode of acting that transformed the design process into co-design, involving several players. The participants are diffuse and specialist designers. In this process, the designer, as he or she is a professional who understands the specific design culture, is included as a special design, analyzing, reflecting, interpreting, and creating knowledge, views, and criticisms, which are implemented as variable proposals. The other participants, who fit into the concept of diffused design, still, according to the author, are endowed with natural human abilities of acute senses, creativity, and practical sense that in the dialogical process contribute to the creation of proposals. Design thinking and acting are strongly related to contemporary organizations to promote the creative economy.

It is a social learning process, so all things made and thought through the conventional manner in the XX century need to be reinvented; that is an emerging design culture, according to Manzini (2016). This author considers, the focus of design has shifted away from "objects" (meaning products, services, and systems) and toward "ways of thinking and doing" (meaning methods, tools, approaches, and, as we will see, design cultures)" (p.53). This type of emerging design is the last type of economy addressed; as regenerative is also possible. Two other design designations can contribute; autonomous design by the sociologist Arturo Escobar (2018) and regenerative culture design by the biologist and doctor in natural design, in his work "autonomous and emerging design," pointed: the majority of designers around the world wish to involve more profound issues of the emergency crises. One example of this is the situation caused by Covid-19, where design actions have been mobilized worldwide, as well as this respective international call for papers. Brazil, the Brazilian House Museum (MCB), jointly with a research study group "FAU Design in Action" from USP, launched the "International Challenge Sowing Design for Emergency Ideas." It is for the "objective of engaging designers to propose shared solutions in an open platform that can be implemented by entrepreneurs in any country". Finally, Wahl (2019), in a certain way, confirms the views defined by Escobar and Manzini in his publication "Designing Regenerative Cultures. "The regenerative concept goes beyond sustainability for the author: presently, today's actions are for tomorrow. Thus, in regenerative design, as defined by Wahl (2019), the attempt recognizes damages from the past for regenerating the future. The search for a holistic view, an ecosystem regarding the problem for designing collaborative communities, thereby seeking a relational, social, and historical perspective: the formation of regenerative cultures.

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3. CONCLUSION

The Covid-19 pandemic has brought to the surface the challenge of design to 'make live,' as it refers to the concept of a regenerative economy and the regenerative culture design. The natural recovery of the environment during the lockdown, the meaning of community and

belonging to one's location, and human compassion and solidarity brought about a re-flourishing to a great number of designers and specialists. There is a feeling of encouragement for designing a better future they had been developing until then. Thus, this article points towards a regenerative economy and a transforming design culture.

The circularity of matter and energy, which plays an essential role in conserving the environment, is not enough to solve the world's complex problems. However, the practice of a circular economy, aligned to the strengthening proposed by networks from the distributed economy and innovative solutions arising from a creative economy (many times disruptive), can practice what has been offered as a regenerative economy. It means thought on the maintenance of the quality of life on the earth (present), and at the same time, it seeks to act on the complexity of past problems, seeking a new world (future).

Finally, in a world of uncertainty, while society revisits its paradigms, all sorts of organizations must review strategies. The same goes for design. In the emerging culture of design, the way of thinking and acting is now multidimensional. The search is for action in the complexity of problems, emphasizing the well-being and life in all its forms, regenerating ecosystems, and assuring the planet's sustainability.

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