

Regenerative design and organizational change

*Design regenerativo e mudança
organizacional*



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SUMMARY

The current, unsustainable developmental model, which arose from a modern, mechanistic perspective, has led us into a socio-environmental crisis. In this model, organizations operate without facing their systemic problems, and instead, they amplify the effects. The present paper criticizes this perspective and the modes of design that stem from it. It presents the concept of regenerative design and alternative ways to organize design that can lead to necessary organizational changes. Principles and movements for regenerative design are presented here which are based on an ecological, complex, integral, and process-based worldview.

KEYWORDS

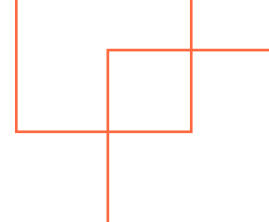
Regenerative Organizations; Sustainability; Regenerative Design

RESUMO

O atual e insustentável modelo de desenvolvimento, que surgiu de uma perspectiva moderna e mecanicista, nos levou a crises socioambientais. Nesse modelo, as organizações operam sem enfrentar os problemas sistêmicos e, ao contrário, amplificam os seus efeitos. O presente artigo critica essa perspectiva e os modos de design que dela decorrem. Apresenta o conceito de design regenerativo e formas alternativas de fazer design que podem levar a mudanças organizacionais necessárias. Apresentamos aqui princípios e movimentos para o design regenerativo, baseados em uma visão de mundo ecológica, complexa, integral e processual.

PALAVRAS-CHAVE

Organizações Regenerativas; Sustentabilidade; Design Regenerativo



1 INTROCUCTION

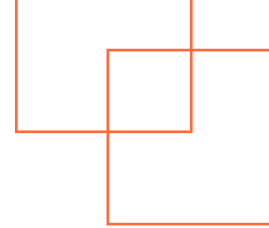
As a society, we are having problems facing various systemic crises, including the ecological, economic, social, and those in public health. The actions of public, private, and community institutions seem insufficient to free us from a dystopian trajectory which might terminate in the collapse of both human and non-human life-sustaining ecosystems. Not only are these actions insufficient, they also appear to amplify our unsustainable ways of living. One wonders if, in these organizations, there exists a deliberate intention to thwart the achievement of objectives that favor the common good and sustainability. At the same time, it is possible that the root of all this ineffective and inefficient action can be attributed to a profound ignorance of the modes of thought that led us to such harmful theories and behaviors in the first place, culminating in recurrent crises which only tend to get worse.

Despite good intentions, the problems we face in the Anthropocene are the result of countless forces anchored in a certain worldview that work broadly and silently. Perhaps our greatest enemy is the profound misunderstanding and ignorance of how our reality actually operates. What's more, as a society, we have adopted an incomplete and distorted view of reality for centuries which has led us to assumptions and metaphors today that hinder more than they help in solving systemic problems and our unsustainable processes.

The mechanistic worldview was born from the good intention to emancipate us through the evolution of rationality and the scientific process. To free ourselves from the shackles of powerful religious institutions, we separated the domains of the intangible and the tangible. This disjunction, as Morin warns us (2005), has spread and extended into the roots of everything we think and do.

We separate mind from matter, humanity from nature, feminine from masculine, inner phenomena from outer and observable phenomena, subjective from objective, art from science, and, more recently, left brain from right brain, and we can go on separating and labeling, putting concepts in boxes, creating categories, and reducing the world into ever finer slices. While dualities are useful and important tools for thinking, a reductionist approach which separates and isolates only makes us more myopic and incapable of dealing with the complexity of life.

Most of the time, and especially within organizations, human beings are unaware of the worldview and paradigms that shape the way they see



and take decisions/actions. We commonly assume that things are as they are and that certain assumptions about the world, and about the context of our works, can be adopted without reflection. An obvious example of this is how the machine metaphor has greatly influenced the operation of organizations, and especially so since the Industrial Revolution. Today, practices are adopted, considered traditional and even “natural”, which are inspired and copied from the ways in which machines work. However, organizations are not, or should not be, machines, especially when we are aware of the transformations that are required of us to avoid the collapse of life on Earth.

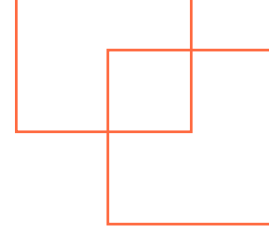
Practices and strategies arising from mechanistic thinking tend to lead organizations to bureaucracy and insensitivity. This prevents them from being able to adapt and transform themselves not only in order to survive, but also to contribute to the common good. Machines are closed systems that operate in pursuit of goals but are unaware of ecosystemic relationships. Machines are not programmed to co-evolve with the systems to which they are subjected, they are programmed to be profitable, that is, to operate from an economic logic that prioritizes financial return.

Within the mechanistic worldview, there is also the Cartesian paradigm which separates mind from matter and places humanity above nature. Organizations are, in general, profoundly anthropocentric, even when benevolent towards socio-environmental causes, and they work to maintain the status quo and humanity’s supposed right to exploit environmental resources for subsistence and economic growth.

Among the values that motivate organizations, we can identify an unhealthy imbalance in which those oriented towards self-assertion (competition, domination, quantity, expansion) predominate to the detriment of values oriented towards integration (cooperation, partnership, quality, conservation) (CAPRA, 2006).

In the following section we will present the results of a bibliographic review in search of clues to design modes which are alternative to those following a Cartesian paradigm. For this work, publications that examine regenerative approaches for organizations were selected, focusing on the goals of metadesign. We also present principles and movements that can foster regenerative design processes.

2 DESIGN IMPLICATIONS OF THE MECHANISTIC PERSPECTIVE

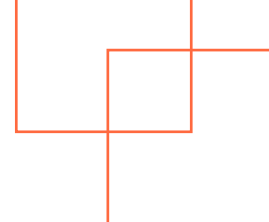


The effects of design arising from mechanistic thinking and its values are many, starting with the subject/object separation as well as that of mind/matter. In the mainstream approach to design, subjectivity is set aside, and especially the subjectivity of designers themselves. This leads to situations where results/ends are pursued at any cost. As long as objectives are achieved, it matters little if the design practice and its decisions disregard individual and collective subjectivity. The result is that processes are adopted that are not participatory or emancipatory and which neglect the wholeness of the individual as a human. Another obvious result is the anthropocentrism of our design models, in which human-centered objectives alone are regarded based on the notion that human beings are superior to nature. As a result, impacts to the ecosystem are barely considered while the expectations of a certain group of human beings are met. Normally, the interests of these individuals are disproportionately focused on the economic sphere and framed in terms of financial return on their investments.

Another perspective that Cartesian thought emphasizes is the consideration of matter as more important, and holds that reality can only be understood if divided and studied in its constituent parts. This type of thinking is very common among organizations in which professionals are highly specialized and organized into teams that are mostly concerned with their narrow scope. The organization is understood as a machine, a gear, and in this understanding human beings are objectified such that they are predictable and their productivity is maximized. Teams and their designs usually cannot envision the overall organization they operate within and seek only to achieve certain goals regarding the construction and maintenance of what is assigned to them.

This leads to organizational hierarchies, which is another result of this model. As in the Cartesian view in which everything can be categorized and placed in an allegedly natural hierarchy, it is common that people in organizations obey the projected and/or developed hierarchies. Due to a certain manipulation, professionals only act on what they are assigned, and they remain predictable executors of decisions that descend from higher levels. This undoubtedly further excludes the domain of subjectivity from design processes.

In addition to regard for hierarchies, this perspective tends to focus attention on things instead of looking at the processes and relationships of a living, integrated system. As a result, strategic design initiatives are primarily concerned with changes of organizational structures and their products.

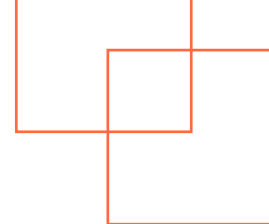


There is also an emphasis on prescriptive planning methods as pre-existing plans are often developed from the top down. It is a navigation method (CHIA; HOLT, 2009) that knows in advance where an organization wants to go and how to get there, and orients it through the creation and use of representational maps. This is a problem primarily because it normally separates “brains” from “hands”, that is, it separates creatives from executors, increasingly alienating professionals from individual, organizational and ecosystemic purposes. Second, in a complex and volatile context, it is very difficult to obtain good results with exclusively prescriptive methods due to a possibly incorrect representation of the maps and paths to be taken towards objectives since any context can be uncertain and changing.

With regard to sustainable practices, strategies, and design processes in organizations, certain problems and missing elements are quite evident. Although there is a concern for sustainability in current practice, this is the mainstream sustainability approach, which, in a Cartesian sense, is at a remove from the essence of ecological thinking and instead focuses on products and process technologies that offer a relatively small impact on the environment. Also, technologies for measuring their impact focus only on predetermined and limited goals.

In the field of design, many professionals undertake a variety of attempts towards complex thinking, but one that is still only based on a rationalist and objectivist perspective. Specifically, they analyze the system in question to make changes to it without considering individual or collective subjectivities.

It is not by chance that the paradigm and discourse of regenerative sustainability emerges in the background, together with the subjectivities, self-knowledge, and self-transformation of the individual. This is achieved in opposition to mainstream sustainability, which sometimes seeks the macro transformation of socio-technical systems, and sometimes the production of “green” products and inputs, but takes little notice of human emancipation or micropolitics. In regenerative sustainability we see the emergence of theoretical-methodological proposals in the field of design, but these are still quite embryonic in academics as they generally deal with the subject very broadly and without describing methodologies or tools. This implies that, for a designer who wants to develop a design, or metadesign process, at a strategic level or for the creation of products and services, there is a lack of more didactic and easily actionable methodological guidelines.



3 REGENERATION

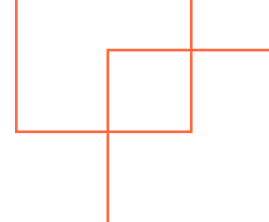
The concept of regeneration in the field of design arose from the intention of using natural processes for human purposes (LYLE, 1994). From this, it was expanded to encompass a body of work aimed at the co-evolution of the system as a whole (REED, 2007).

Regeneration as a proposal for a new direction for designers has its roots in architecture and urban planning, and currently its most widespread application is in the planning and creation of sustainable settlements and communities.

The term is widely used, but with different meanings, and three main semantic fields can be identified that are drawn from it: 'Restoration', 'Recursion', and 'Renaissance' (GARCIA; FRANZATO, 2021). Restoration refers to something degraded that is returned to its previous conditions, and here the clear objective is to recuperate a weakened organism. Recursion refers to something that happens again and again, and here we find a direct relationship with the concept of autopoiesis and circularity: systems that use their own functions to rebuild and sustain themselves. Finally, Renaissance refers to something that gains new life. The Latin form of regeneration, *regenerare*, means to bring to light again, a rebirth. This we understand as transformation and evolution of something to higher levels of diversity, complexity, and expression, and where there is also a harmonious resignification and infusion of new aspirations and possibilities. Which is to say, this is not a change that simply replaces the former version, but a transformation that allows for an elegant evolution that maintains and honors its immanent essence.

4 REGENERATION FOR ORGANIZATIONS

The design community that embraces the concept of regeneration and seeks to integrate it into their own methodological practices, towards regenerative design, often focuses its work on local territorial contexts, standing at the intersection between the fields of sustainable design and territorial design. Certain authors also offer regeneration proposals for organizations and businesses, while distancing themselves from viewpoints centered on territorial design. We have selected references that, even though they deal with regeneration as a secondary theme, were based on a worldview and epistemology that is more oriented towards ecological and process-based thinking. In general, publications about regeneration for organizations focus mostly on cultural and

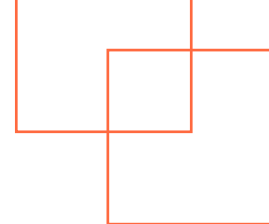


leadership aspects, which is understandable given their propositions for a paradigm shift and orientation towards an ecological worldview.

Carol Sanford, an author who spent decades researching the area of Regenerative Development, published a series of books that direct activities in the context of regenerative leadership and that offer clues for operationalizing strategies and orienting top business management. The author's work, in addition to its evident foundation in living systems, is also influenced by John Bennett's work on Systematics (for understanding systemic dynamics and qualities), as well as David Bohm's theoretical contributions (in understanding implicate and explicate order). Since the first publications in 2011, Sanford's work has addressed issues of subjectivity and collectivity as fundamental aspects of regenerative work.

Sanford (2011) proposes five groups of stakeholders that should be considered for collaborative and systemic work: customers, co-creators, the Earth, communities, and investors. She proposes a change from the "triple bottom line" to the "quintessential top line" which contributes to the development of deep responsibility in all areas and relationships at work. Sanford's proposal is based on the development processes, both of the organization and of the subjects who participate in them. The author seeks to foster a change in the way things are seen and perceived, and proposes moving away from a way of thinking based on static things to one that is based on processes. Also, as an initial proposal based on living systems, she suggests thinking about adding value and not about extracting value (SANFORD, 2011).

Hardman (2012), Hutchins, and Storm (2019) all propose "assessments" that present a way of evaluating various aspects of an organization engaging with the pillars of Regenerative Leadership that is based, respectively, on an integral vision that considers both subjective and objective aspects and a logic of life. The authors also present "toolkits", however, at first glance, the tools demonstrate little difference from what we already know. It is possible to infer that these authors believe that such tools, employed in a new way of seeing, thinking, and being, can lead to different results. Some articles already address strategies for Regenerative Businesses (HAHN; TAMPE, 2021; CALDERA et. al., 2022). Hahn and Tampe (2021) introduce this in the form of a scale to position businesses as well as principles, criteria, and strategies for evaluating and/or guiding organizations that wish to move towards regeneration. For this, they use several references, including those authored by members of Regeneration. From the description of the principles titled "Aspiration level



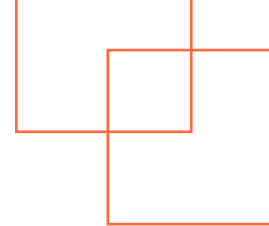
based on systems” and “Adaptive management approach”, these reflect on practical applications for regenerative business strategies. Regarding management, these point to the need to formulate local and distributed business strategies as opposed to homogenized global strategies, and to work on leadership challenges by cultivating a reflective climate in organizations such that they can diverge from established strategies.

Robinson and Moraes Robinson (2014) offer the “Holonomics” approach to organizational and cultural transformation which draws on a form of systems thinking to help leaders understand their organizations by way of their interactions (2014, 2017). Otto Scharmer suggests a detailed “framework” (Theory U) to deal with the future and the emergence of the new. Scharmer (2019) assumes that, normally, in organizations, leaders and professionals operate from an unknown place he calls a blind spot. That is, they are unaware of the motivations that lead them to do things. The author also adds that, for a long time, the literature on management and strategy only focused on results and processes, while things that leaders do have instead proved to be very important in considering the “inner condition” from which everything begins.

The Regenesys group (MANG; HAGGARD, 2016) offers a methodological proposal that goes from identifying the place of the project by way of its nesting, or “Holarchies and Holons”, to a development process that involves going through the four sources of a specific conceptual framework of regenerative thinking: local potential, regenerative capabilities, vocation of the place, and mutual coevolution. The group carries out many projects directly linked to the area of territorial development, which makes its tools more applicable to a context in which the relationship with the territory/place is more evident and easier to diagnose and perceive. The authors outline principles of regenerative work that should guide it and they define three lines of action: the work of developing oneself, the work of developing the capabilities of the community or the team, and the work that serves the evolution of the whole. They address, like Sanford, the most subjective aspect of subjects and communities. Unlike Sanford, however, they present fewer techniques to achieve this.

It is also important to mention Daniel Wahl (2006, 2020) who makes a powerful contribution to regenerative design, but who was not selected for this review because he makes a more philosophical, fundamental, and broader contribution that focuses less on frameworks for direct application in organizations.

In the work of the authors included here, it was possible to identify points of convergence, such as an orientation towards ecological and



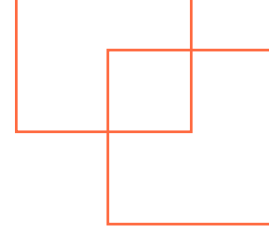
integral thinking by using theories based on process philosophy and, mainly, on phenomenology which has as a principle the observation and understanding of patterns of phenomena. These advocate a type of thinking that goes first to the source by working Upstream, and only then directs itself to more practical implications by working Downstream. We find important contributions here but there is still a lack of, and so an opportunity for, theoretical-methodological developments that, for example, dialogue more with the already established field of Design for Sustainability, the contributions of which also work in the direction of complex thinking.

It is evident that these researchers seek to think in terms of transformation and movement as opposed to static things. We also found opportunities for processes and practices that avoid generalization, and that seek action based on the singular quality of each organization and its ecosystem. Also, we found actions emerging based on understanding an organization's developmental trajectory and its potential by using a great deal of observation from an inner condition that is more sensitive, more intuitive, and not purely rational. This would open a space for the indirect development of an organization through action within the scope of individual and collective subjectivities, and in a way that is more adaptive and flexible.

Based on these identified convergences, we can adopt another design attitude based on care, attention, and understanding patterns and processes within the integrality of the organization in its ecosystem so that an awareness of the required role of individuals, groups, and organizations emerges. With this we can intervene in the systems in question to develop capabilities and process-based dynamics. It is a mode that seeks to recognize the context and find the best path while it is being traversed.

5 PRELUDE TO AN APPROACH TO REGENERATIVE DESIGN PROCESSES

Below we present principles and movements for regenerative design processes based on an articulation elaborated by the authors of this article between the concepts of regeneration and the three ecologies of philosopher Félix Guattari. According to Garcia and Franzato (2022), in his essay "The Three Ecologies" Guattari points to the paradox between continuous technical-scientific development, which is potentially capable of solving the problems we face, versus the inability of social

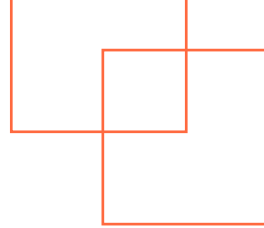


forces and subjective formations to appropriate these means and make them operational (GUATTARI, 2009, p. 12). Guattari's Ecosophy is an ethical-political proposition of the three ecologies: human subjectivity, social, and environmental (GUATTARI, 2009). This reflects not only on environmental concerns, but also on social relations and the production of subjectivities. It regards understanding the environment in which one lives and problematizing the relationship that one maintains with it. In addition to using Ecosophy as a basis for orienting design action towards regenerative sustainability, this proposition initiates a dialogue between Regenerative Design and the contributions of Design for Sustainability for which Strategic Design was a precursor to understanding the need for a profound redesign of our value systems beyond just incremental changes at the level of products.

It should be noted that this proposition for regenerative design processes is open to interpretation, appropriation, and development. It should not be regarded as finished, but instead in the making. Above all, it should not be considered a prescription. This proposition regards designing from an ecosystemic perspective and with a view to catalyzing a coevolutionary movement between a system/organization and its environment. It is important to mention that we do not need a "degenerate" condition and that the process will always focus on the evolutionary potential of the system/organization in question and its place.

For the design movements and processes, it is necessary to adopt openness, dialogicity, and autonomy in a multidisciplinary and diverse team in order to perceive and catalyze an appropriate action of subjects and organization in relation to their place. Further, that this occurs in relation to the ecosystem in which the process is inserted. That is, such processes seek ecosystemic operations in concordance with Guattari's three ecologies for the regeneration of ecosystemic relations, which means with their biotic and abiotic elements. This emphasizes the work of subjectivation and self-transformation, and both employs and seeks commoning toward a shared common good as well as an ecopedagogy.

Below we present the interdependent and mutually reinforcing principles of regenerative practice as they encourage an appropriate consideration of the context in its integrality (by integrality we mean, in its different dimensions as a whole). These are set in a framework based on the meanings of regeneration and the three ecologies. Moreover, they are clues that can support the metadesign and the design, that is, they can be drivers of attitudes, mapping processes, and prospective



scenarios.

Principles of Regenerative Practice	References
Caring and enabling the emergence of integral health;	WAHL (2006), GUATTARI (2009).
Promoting autonomy in reciprocal relationships and circular flows;	MORIN (2011,2015,2016), CAPRA (2014, 2021), MATURANA, VARELA (1995), FRANZATO (2020, 2017).
Seeking co-evolution by resignifying and developing valuable relationships with the ecosystem;	MORIN (2011, 2015, 2016, 2017), CAPRA (2014, 2016, 2021), MANG; REED (2012), MAURI (1996), ZURLO (2010), FRANZATO et al. (2015).
Self-transformation from an ecosystemic vision;	GUATTARI (2009), FOUCAULT (2019), MORIN (2017), MANG; HAGGARD (2016).
Developing commoning through eco dialogicity;	ESCOBAR (2016), MERONI (2008), CAPRA (2006, 2014, 2016, 2021).
Developing ecological knowledge of interexistence.	CAPRA (2006, 2014, 2016, 2021), WAHL (2020), MANG; HAGGARD (2016).

Chart 1 - Principles of Regenerative Practice. Source: the authors

The proposed design movements arise from the understanding, mapping, prospecting, and development of ecosystemic relations present in a given place. It is important to highlight a posture that emphasizes a reorientation to the understanding of the relationship of a system/organization within its place/territory, to identify its needs and potentials, and to then create effects of meaning through understanding of the appropriate action at the various scales/holons (in both supra- and sub-systems) and in the three ecologies (subjectivity, social, and environment). In this way, we take a less self-centered approach and instead one that is more focused on ecosystemic dynamics and integrality for the prospecting of scenarios and developing interventions

and capabilities that can catalyze change in a desirable direction.

Below is a synthesis of the movements (Figure 1) that facilitate comprehension of the proposed design practice. It is a mapping of the singularity of the organization and its place. It is both a mapping and a prospecting of its vocation in its role of adding value to the supra- and sub-systems, and of catalyzing the identification of capabilities and interventions that must be reinforced or developed so that the organization can realize its singular means and purpose. Such movements answer key questions that promote reflection and that contribute to comprehending the local singularity and its potential.

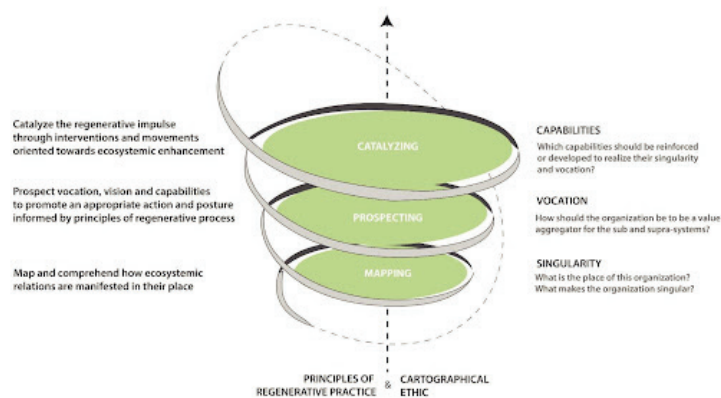
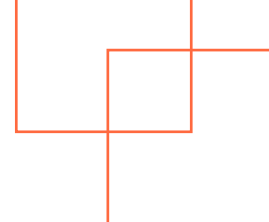


Figure 1 – Movements for regenerative design processes. Source: The authors

When starting a project, we must bear in mind that our objective is to adopt a different design posture, a more sensitive, intuitive posture that works in a more holistic way, that is, a way that seeks to understand the whole more than its isolated elements. It is necessary to consider that we are also more than observers, we are participants in an immanent plan in which we can map and intervene, putting the body into action with its various affects and percepts that lie beyond the intellect. To assess ecosystemic relations, we need a cartographic ethics that allows necessary processes to be mapped to capture emerging qualities and meanings.

According to Costa (2020), cartography is more than a possible research method, and can be understood as an ethical-political inspiration as proposed by Deleuze and Guattari (1995) that seeks to complement and strengthen qualitative research. Guattari and Deleuze call us to look more at processes and relationships than at structures. In cartography, we



can follow processes from the analysis of their immanent lines (COSTA; AMORIM, 2019). Lines are articulations that are tangled together, and the great challenge is to untangle them, an action that Deleuze (1996) calls mapping. We settle on these lines, traversing unknown territories, drawing maps.

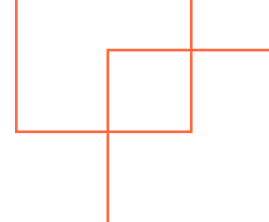
This mapping takes place through perceiving and recording in different languages, such as texts and/or visual creations, that synthesize qualitative and process-based dynamics of the system/organization. To begin to understand its singularity, nothing is better than going back to the place it occupies to understand the biotic and abiotic relationships that make up the context (MANG; HAGGARD, 2016). This will help in understanding an organization as a system that inhabits other larger systems and has smaller systems within it (BENNE, 2005). Understanding the singularity of the organization and its place involves accessing different layers that it is composed of, and at their levels of subjectivity as well as social and environmental relations, in order to know how to respond to what makes them unique, both due to their history and their perceived patterns.

For movements, the use of techniques such as surveys, in-depth interviews, and workshops with talking circles are suggested which encourage active and horizontal participation with the local community as well as the formation of a multidisciplinary and diverse team.

While mapping, we went from understanding the singularity of the organization to understanding its potential, that is, its potential role in adding value to supra- and sub-systems. By understanding ecosystemic relationships, we began to ask ourselves which ones need to be developed and improved. Mapping the vocation involves understanding and discerning how the organization and the subjects can contribute to a greater whole, especially considering the self-transformation required by this task.

In the prospecting movement, issues related to the principles of regenerative practice become even more relevant. Once the system is mapped and understood in its integrality, this is the moment to imagine and design scenarios, roles, and capacities for ecosystemic regeneration. It is about defining which qualities need to be developed, which results are desirable, and what the community's dreams are. Prospecting the organization's vocation and capabilities means opening a dialogue between its singularity and its potential, and always in relation to subjectivities, social relations, and the environment.

For the prospecting movement, narratives can be used to synthesize what is most relevant in everything that was conceived, shared, and



discussed (MANZINI; JÉGOU, 2003; HINDRICHSON; FRANZATO, 2012). Getting people to tell a story about the past, present, and futures can help create a sense of common purpose. From here on, the movement is one of catalyzation, that is, when interventions are elaborated that, being created today, will be able to catalyze changes and processes towards the prospected scenarios. The end of these movements is to restore conditions for the emergence of the health of the system, and more: to allow it to be reborn in a new order of complexity and meaning that stems from an autonomous, self-managed production (ESCOBAR, 2016).

6 CONCLUSION: OF THE NEED FOR A MORE REGENERATIVE SUSTAINABILITY

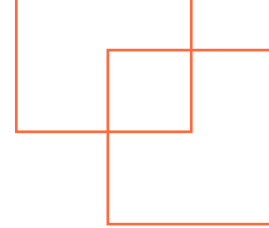
Guiding our way of seeing, thinking, and being towards ecological thinking involves adopting a different worldview and ontology, one that is able to inform us about reality through a lens that is consistent with the very nature of the systems in which we are involved.

We believe that theories of living and integral systems form an extremely important framework that offers ways of apprehending and acting on our contexts. Individuals and the organization itself need to operate while seeking a balance between their self-regeneration and the regeneration of the whole, thus achieving a sustainable enhancement.

There are numerous convergences and development opportunities among the concepts of regeneration that are used by us for design purposes (GARCIA; FRANZATO, 2021; GARCIA; FREIRE; FRANZATO, 2022). There are also convergences and development opportunities among those of philosophies and theories oriented toward an ecological, complex, integral, and process-based worldview. By being integral, we understand that a living system also includes the subjective/inner aspect of individuals and collectivities, and not just the domain of what is more objectively/easily observable.

It is important to adopt a different, more systemic thinking that focuses on the most fundamental aspects of life, which is its autopoietic process, meaning self-producing and self-sustaining. Given this, we can stop centering our thinking and observation on static things and instead orient ourselves toward processes.

We should consider that the lens of process philosophy can lead us to a variety of propositions for design processes in organizations. What is more, these constitute other propositions arising from thinking about



living systems, such as: integrality, autopoiesis, holarchies, cooperation, and diversity, among others (SAHTOURIS, 1998; CAPRA; LUISI, 2014).

For ecosystemic regeneration, individuals and organizations need to operate from an informed awareness of interexistence and coevolution among holarchies. They need to recognize themselves as a whole, or holon, and recognize the holons of which they are a part and on which they depend for self-regeneration. Therefore, theoretical-methodological approaches oriented towards an ecological worldview can help organizations to be regenerative. And metaphors and theories of living and integral systems can help in metadesign development.

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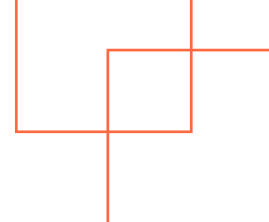
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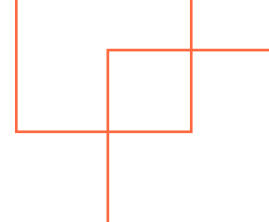
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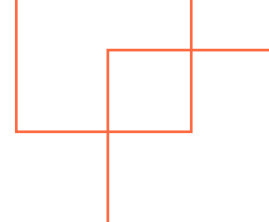
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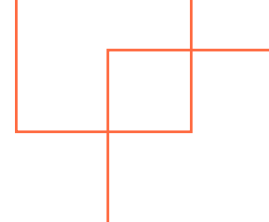
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