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REFLECTIONS ON ECOLOGICAL AWARENESS A SYSTEMIC AND ECOLOGICAL VIEW OF LIFE

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Summary

This article reflects on the need to develop ecological awareness at this moment in human history and proposes doing so from the perspective of Theory U, taking a systemic view. Theory U is a social innovation methodology created by Professor Otto Scharmer at the MIT Sloan School of Management, which proposes a profound change in people and organizations to face the challenges of today's world from a systemic and ecological perspective. The ideas of Fritjof Capra, Humberto Maturana, and Otto Scharmer are reviewed, who have contributed visions and tools for understanding life as a self-generating, cognitive, and reflective process that is related to the environment. The evolution of the concept of ecological awareness throughout history and its link to sustainable development and the objectives of the United Nations 2030 agenda are also analyzed. Finally, it reviews some initiatives and organizations that are working in Venezuela to promote the transformation of ecological and social consciousness through Theory U.

Keywords: ecological awareness, systemic thinking, Theory U, Sustainable Development Goals.

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1. Introduction

Any discussion of ecological awareness inevitably involves reviewing the systemic and ecological view of life proposed by Fritjof Capra (1975), a doctor of theoretical physics who has worked as a researcher, extending his postulates to biology and ecology and emphasizing the need to achieve a new systemic understanding of the universe. Similarly, Maturana's (1972) postulates with his theory of autopoiesis define life as a particular pattern of organization, a self-generated network with self-defined limits. What we call life contains a permanent creative metabolic action that recreates itself in a dynamic order in which the cellular components alone do not generate creative action and need interaction between them.

In relation to systemic thinking and the state of the world, according to Scharmer (2018), creator of Theory U, man's interference in natural processes has brought us to the brink of destruction. This unconscious intervention has produced complex and systemic problems that need to be addressed in a systemic way. It is impossible to continue to uphold the idea of economic growth based on finite natural resources.

The importance of reflecting on ecological awareness requires reviewing the contributions on the subject, considering the views expressed by the aforementioned authors, with a view to fulfilling the 17 United Nations Sustainable Development Goals (SDGs), which have the 20/30 global agenda, answering the following question: How can ecological awareness be developed from the perspective of Theory U?

2. Contents

a. Considerations on Ecological Awareness.

The topic of ecological awareness has its roots in different eras, authors, and researchers. To reflect on ecological awareness in the current moment, we analyze the ideas of Fritjof Capra (1975) and Humberto Maturana (1972) to connect with the current ecological vision proposed by Otto Scharmer (2018) based on his Theory U approach, linking it to the fulfillment of the United Nations 2030 Agenda.

Fritjof Capra (1996), an Austrian theoretical physicist, has written about ecology and complex systems. His systemic and ecological vision of life is based on the idea that all living beings are interconnected and form part of a larger system. From his systemic perspective, life organizes itself in a generative and creative way. The world is a chain of connections based on cooperation rather than competition, which is mobilized on the basis of patterns, relationships, and contexts. Humanity's problems are interconnected, which requires leaders capable of connecting the dots, understanding complexity as part of the system's identity.

For Capra, the mind and consciousness are not elements but processes, and they are not separate categories. From his systemic view, cognition occurs without necessarily involving the brain. "Cognition involves the entire process of life, including perception, emotion, and behavior, and does not even necessarily require a brain and nervous system." Capra (1996). Consciousness, then, is a type of cognition in which the action of the brain and nervous system is implicit. Reflective consciousness is a concept of the self determined by language, the ability to build tools, and organized social relationships. Our behavior as human beings should not interfere with nature's intrinsic ability to sustain life.

There are parallel ideas between quantum physics and Eastern spirituality explained in Capra's book: The Tao of Physics (1975). Ecology is the bridge between science and spirituality. Physics explains the world from the outside, and spirituality explains it from the inside. Spirituality is cosmic unity that produces awe and humility, and religiosity attempts to explain the spiritual experience according to historical and cultural context.

For Capra, biological systems exchange molecules in networks of chemical reactions, and social systems exchange ideas and information in communication networks. Biological networks generate a material boundary that imposes restrictions on the chemistry within it; social networks create a cultural boundary that imposes restrictions on the behavior of their members.

Capra asserts that power, as empowerment, is the ability to create networks of meaning, and that power conflicts are generated by the clash between self-interest and community interests. Sustainable communities must build their agreements while respecting nature's intrinsic capacity to sustain life. Leaders of systemic processes use internal forces that function as informal networks to manage change processes, combining them with formal structures: rules, regulations, and distribution of power.

With regard to the ecological dimension of life, Capra cites James Lovelock and Lynn Margulis (1996), who consider planet Earth to be a complex living system that is self-generating and self-regulating. Sustainable human communities are those in which their members, with nature's inherent ability to sustain life, propose to live sustainably in harmony with the environment. Living systems are open and autopoietic, acting cognitively in relation to the environment. Planetary metabolism transforms organic substances into living organisms, and

death is the active process of transformation into organic matter, so life does not stop, but rather transforms. Human survival will require ecological literacy.

It is worth mentioning the Chilean researcher Humberto Maturana (1972) and his theory of autopoiesis, which defines life as a pattern of organization in the form of a self-generating network that generates its own limits. Life arises from creative metabolic action that recreates and orders itself, so cellular components alone do not generate creative action. The essential characteristic of life at the biological level stems from metabolic processes that connect in the form of relational networks.

The environment produces structural changes, but the living system has the ability to decide whether or not to accept the change according to its own organization, causing learning to occur. Therefore, every living system is a learning system. Life is not just cellular mutation; it is the creative association of molecular sequences in physical and chemical events. Maturana (1972) states that cognition is structural coupling and that every structural change is an act of cognition; therefore, "to live is to know." On a planetary scale, life creates its ideal environmental conditions through autopoiesis; the planet is a living system that is constantly creating the right environment to sustain itself.

In his book The Biology of Loving and Knowing (1984), from his perspective as a biologist, he defines love as a biological phenomenon in which human beings are intrinsically loving and love is a way of living in society, so loving is the foundation of social life. In this way, living beings relate to each other and social systems are generated.

b. Systemic thinking and the current state of the world.

While Maturana believes that the planet recreates itself as a living system in order to sustain itself, MIT Business School professor Otto Schermer (2018) argues that human interference in natural processes has brought humanity to the brink of destruction. This unconscious intervention has produced complex, systemic problems that need to be addressed in a systemic way. He argues that it is impossible to continue to sustain the idea of economic growth based on finite natural resources. The culture of consumerism and waste is depleting the planet's natural resources. Quantitative growth measured in Gross Domestic Product does not measure people's quality of life. Instead, qualitative h growth aims to improve quality of life and analyzes indicators such as poverty, literacy, equity, the environment, etc. Globalization has widened the gap between rich and poor; the rich are getting richer at the expense of the poor, and the poor are getting poorer. It reiterates the need to review current global capitalism and values civil society organizations that study sustainable and systemic solutions for humanity.

According to its postulates, ecological awareness and systemic thinking need to be urgently addressed globally in order to overcome the three great divides: ecological, social,

and spiritual. To address these profound challenges, new platforms and new capacities are needed to update our mental and social operating system from ego-system consciousness to ecosystem consciousness. He believes that sustainable agriculture is emerging as a regenerative and unifying strategy, and that it is necessary to replace the production of food, goods, and services based on fossil fuels by considering agroecology as a productive activity in harmony with the environment.

In his article Vertical Literacy: Reimagining the University of the 21st Century (2018), Scharmer comments on the climate strike by high school students of *Fridays For Future (FFF), in which*, during the week of March 15 alone, there were 1.6 million strikers in 125 countries. This environmental movement to reduce carbon emissions was started by Swedish teenager Greta Thunberg in late 2018. He also comments on the rise of the Green Party in Germany among young voters. The Greens are the only party that supports climate action, immigration, and social justice, and are now a popular party gaining strength in other European countries. With the emergence of global disruption caused by the Coronavirus pandemic, in his article Lessons from the Coronavirus (2020), he argues that the pandemic deepened the state of global disruption, but reduced CO2 emissions. The virus forced us to become aware of our own behavior and its impact on the system, demonstrated the power of global interconnection, and made clear our fragility as humanity. At the same time, the timely response of governments and public awareness were key to managing the pandemic. He concludes by saying that, in the face of global challenges such as the COVID-2020 pandemic, we can choose to transform consciousness, reinvent society, and activate social fields through the creation of schools of consciousness transformation. From his social innovation methodology called Theory U, Scharmer (2007) argues that systemic impact can be generated to develop ecological consciousness and overcome disruption.

Theory U is a methodology that seeks to create profound change in individuals and organizations so that they can face the challenges of today's world. This theory is based on the idea that real change begins with profound personal transformation and that this can be achieved through a process of reflective learning. It offers a technique for the personal development of change agents capable of visualizing the emerging future and connecting with their environment. It bases its statements on authors such as: Fritjof Capra (1982), with his systemic view of life; Humberto Maturana (1984), referring to the biology of loving and knowing; Francisco Varela (1987), with his approach to individual awareness; Kurt Lewin (191), with his approaches to the social field, Joseph Jaworski (2011), with his insights on mindfulness, Ed Schein (1985), in the field of human development in organizations, and Peter Senge (1990), with the theme of systemic thinking in organizations.

The methodology called Theory U as a learning experience in today's world involves five stages of individual and collective reflective practical experiences: 1) Co-initiation: in which an intention to begin the journey is generated. 2) Co-feeling: in which exercises in observation, perception, visualization, deep empathic and generative listening, and reflection are carried out. 3) Full presence: in which concentration and focus on the present are practiced. 4) Co-creation:

in which exploratory prototypes are initiated to impact the environment. 5) Co-evolution: in which the new is incorporated into the ecosystem. The U *School for Transformation* https://www.u-school.org/ welcomes all global initiatives spread across more than 150 countries that are training agents of change for the transformation of ecological, social, and spiritual consciousness through Theory U. This concert of change agent leaders is joined by various organizations and universities interconnected with the purpose of training agents of change and transformation of consciousness, aligning their objectives with the sustainable development goals of the United Nations 2030 agenda.

c. Ecological perspective on sustainable development

Analyzing ecological awareness from the perspective of sustainable development in order to converge towards strategies in action and looking back, we can see how, towards the end of the 19th century, humanity began to become aware of the conservation of renewable natural resources and living species, supported by Darwin's perspective on evolution and natural selection, through which species evolve and adapt to their environment. For Darwin, the conservation of renewable natural resources and living species is important to ensure that natural resources are available for future generations. Later, between 1940 and 1950, concern about air and water pollution on the planet began to emerge, and by then, countries were becoming aware of the effects of pollution on health and the environment. Between 1945 and 1960, as a consequence of World War II, humanity began to develop a moral conscience in different aspects of life and understood that life on the planet has limits.

It was through the activities of the Club of Rome (1974), a think tank that brought together scientists, economists, officials, and businesspeople from countries concerned about the complex problems facing the world, especially those related to the environment and sustainable development, that progress was made in developing an ecological consciousness with greater significance for humanity. This organization addressed issues related to energy, food, the environment, conservation and balance of renewable resources, and a culture of peace, among other topics.

Subsequently, at the Rio Conference (1992), it evolved towards action strategies, achieving an international agreement between countries on the issue of the environment and development. And in 1994, global alignment was achieved on the issue of mitigating and generating solutions for climate change with the UN Convention on Climate Change, in which 197 countries participated.

At the beginning of the 21st century, at the 2000 Millennium Summit, the UN defined the eight Millennium Development Goals (MDGs), setting out a series of targets and commitments to reduce poverty and improve the living conditions of people around the world by 2015, covering issues such as education, health, gender equality, international cooperation, and Goal

7 (Affordable and clean energy) was directly related to climate change. In 2015, the results corresponding to the achievement of the goals formulated in 2000 were reviewed and the 20-30 global agenda was created, expanding its sustainable development goals to 17, of which 7 are related to environmental awareness. These 17 UN SDGs detail the goals of the four perspectives of the 20/30 global agenda: economic progress, reduction of inequalities, sustainability of life on the planet, and governance of societies.

In line with the SDGs, the ESG (Environmental, Social, and Governance) Agenda creates a series of sustainable development conditions that are increasingly required of economic agents around the world who want to access international financing. At the same time, the European Union has given legal force to the goal of achieving a climate-neutral EU by 2050 and has set a target of reducing its CO2 emissions by at least 55% by 2030.

d. Environmental awareness in Venezuela and Agenda 2030.

Reflecting on ecological awareness in Venezuela, Werner Corrales (2021), a Venezuelan academic specializing in development issues, proposes motivating Venezuelan leaders to join the Environmental, Social, and Governance (ESG) Agenda to leverage the new style of development and comply with the 2030 Agenda. He proposes identifying and taking advantage of international financing opportunities by linking infrastructure programs with programs for decarbonization, reduction of environmental impacts, and improvement of living conditions in the habitats of the most vulnerable populations.

Similarly, the Orinoco Group, https://grupoorinoco.org/, a Venezuelan organization focused on the study of public policies for energy and the environment within the framework of sustainable development, promotes the improvement of urban and rural environmental management. It proposes guidelines for environmental management for successful municipal administration, since municipal environmental awareness is built through citizen participation that is consensual, timely, and organized.

In the field of civil society organizations, the Venezuela Híkola Social Innovation Laboratory, in partnership with universities and other civil society organizations, has trained more than 600 leaders and agents of change for the transformation of consciousness in Venezuela through the program: Leading from the Emerging Future based on Professor Scharmer's Theory U, motivating the creation of social innovation prototypes to overcome ecological, social, and spiritual disruption.

3. Conclusions

Theory U is a methodology that proposes a profound change in people and organizations so that they can face the challenges of today's world from a systemic and ecological perspective, transforming levels of individual and collective consciousness through practices designed for reflection. Theory U is based on the idea that real change begins with a profound personal transformation and that this can be achieved through a process of reflective learning.

Ecological awareness is a relevant and urgent issue for the sustainable development of humanity. Assuming ecological awareness is an attitude of reflection, concern, and care for the environment and the problems that affect it. This concept has evolved throughout history, and since the beginning of this century, concern for the issue has been linked more deeply and with real action to the sustainable development of countries. From different perspectives and disciplines, visions and methodologies have been proposed to address the environmental, social, and spiritual problems affecting the planet and the inhabitants of all species. Theory U is one of them. Its proposal seeks to generate a profound change in people and organizations so that they can face the challenges of today's world with a systemic and ecological view of life.

This theory is based on the idea that real change begins with a profound personal transformation and that this can be achieved through a process of reflective learning. It offers a technique for the personal development of change agents capable of visualizing the emerging future and connecting with the environment based on practices of observation, listening, and connection with an open mind, open will, and openness to action and change that is activated in a global network of change agents spread across and interconnected in more than 150 countries.

Theory U aligns with the sustainable development goals of the United Nations 2030 Agenda and proposes to train agents of change and transformation of ecological consciousness in different fields and contexts. In the case of Venezuela, some initiatives and organizations that are working in this direction and could serve as inspiration and reference for other countries and regions are presented.

Capra and Maturana's ideas allow us to understand life from a systemic and ecological perspective, in which living beings organize themselves in an autopoietic way, interacting with their environment in a structurally coupled manner. This view explains that the mind and consciousness are processes that emerge from the dynamics of life. Thus, cognition involves the entire process of life, including perception, emotion, and behavior. Language, love, and spirituality are biological phenomena that express the capacity of human beings to live in society and create networks of meaning. Ecological awareness involves recognizing our interconnection with other living systems and respecting nature's intrinsic capacity to sustain life. Otto Scharmer, with his Theory U, draws inspiration from these ideas to propose a profound change in people and organizations that will enable them to face the challenges of today's world with a systemic and ecological view of life.

Humanity has understood the importance of conserving biodiversity and ecosystems for sustainable development and human well-being. UN conventions have established goals and commitments to reduce biodiversity loss, combat climate change, prevent land degradation and pollution, and promote the sustainable use of natural resources. However, the challenges are enormous, and collective and urgent action is required to reverse negative trends and protect the planet's natural heritage. Ecological awareness implies assuming our individual and collective responsibility for caring for life in all its forms and manifestations.

Professor Corrales proposes that Venezuelan leaders engage with the environmental, social, and governance (ESG) agenda to leverage a new style of sustainable development and comply with the 2030 agenda. To this end, he suggests identifying and taking advantage of international financing opportunities by linking infrastructure programs with programs for decarbonization, reduction of environmental impacts, and improvement of living conditions in the habitats of the most vulnerable populations. Professor Corrales is also actively involved in Venezuelan civil society, promoting democracy, peace, and development in his country. His professional career as an international consultant and former minister of development, trade, and economic planning gives him extensive experience and credibility in the field of sustainable development.

From civil society organizations in Venezuela, the systemic network of change and innovation is beginning to become visible amid the country's painful systemic disruption. It is necessary to inspire conscious leadership to contribute to the reconstruction of the social fabric in Venezuela, which inevitably also involves the development of ecological awareness. Now more than ever, there is a need to grow this network of systemic transformation of consciousness. Therefore, the topic addressed is highly relevant to the current context, as it raises the need to develop ecological awareness from the perspective of Theory U as a way to contribute to sustainable development and the solution of environmental problems that threaten life on the planet, opening up possibilities for the emerging future for Venezuela and the world.

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