Fundamentals of Human Ecology as a Paradigm for a More Sustainable Economy

Just as the disintegration of rationality and emotions generates psychiatric pathologies, the disintegration of the human and the professional turns organisations and societies into platforms of mass destruction. Nuria Chinchilla's keen integrative vision sheds a splendid light on how to build a social ecosystem that facilitates a full life for each person.
—Álvaro González Alorda
Co-founder and Managing Partner of emêrgap,
Professor at Headspring Executive Development

I celebrate how Nuria and Pilar draw on human ecology to remind us that the health of our ecosystem is intrinsically linked to our own health as human beings. By approaching regeneration from this holistic perspective, we can aspire to a more oxygenated and oxygenating society, where family and businesses also play a vital role in positive transformation.
—María Eugenia Brizuela de Ávila
Director Corporate Sustainability at HSBC for Latin America, former Minister of Foreign Affairs of El Salvador

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By

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FOREWORD

We all tend to analyse reality from the perspective of our own personal viewpoint, mediated by our feelings, our education, our knowledge and our position in the world.

The approach to the integration of the person, the family and work from the world of business has often suffered from a certain narrow vision that has made it incapable of contemplating the person in all his or her complexity. My commitment to the training of families for more than 30 years has placed me in a vantage point from which I could observe how often the analyses, speculations, proposals and measures coming from the business world were aimed at improving the conditions of the person in the work environment.

But the human being is not only a *homo faber*. As Karl Jaspers taught, to be man is to become man, and this process of existential self-configuration takes place in the entire sphere of his existence.

The use of ecology to apply it to the human being may have seemed at some point to be an ingenious analogy with no real scientific route beyond the relationship between man and the environment.

However, Nuria Chinchilla and Pilar García-Lombardía have understood the strength and appropriateness of an approach that, far from reducing human beings to just another datum of nature, can return them to the ontological heights from which they were created and from which they should never have descended. To put it in his own words: back to being the leader and the agent of change that builds a cohesive society and a sustainable economy.

Ecology is *the science that studies living beings as inhabitants of an environment and the relationships they maintain with each other and with the environment itself* (according to the R.A.L.E. dictionary definition), and the human being is, par excellence, the living being that relates, and the only one that does so in freedom, i.e. with the capacity to choose and do good. His environment is not only a space and a time in which he inhabits, but an ethos that he can choose and share or repudiate and disintegrate.

This condition shakes the foundations of classical ecology, which moves in the mechanistic terrain of nature and physical laws and imposes a very different perspective on this science. Ecology applied to the human person claims an anthropo-logical bias that introduces the margin of insecurity inherent to everything human.

As Carlos Cardona pointed out[1], one of the great falsifying binomials of reality is that of truth understood as certainty. 'There are many things that are true and of which I have no certainty, accuracy of adequacy in my concept. And at the same time, it is not uncommon to have certainty (subjective, of course, because certainty is always subjective) of something false. An example: not knowing if there is someone behind that door is not the same as knowing that there is no one there'.

Nuria and Pilar's relentless and documented diagnosis of society reveals the truth they are seeking, which does not come from an aprioristic, ideological and prejudiced understanding, but from the data and evidence of a well-worked and well-founded bibliographical apparatus. After all, a diagnosis is never pessimistic or optimistic. It is either accurate or it is not. And an accurate diagnosis is the guarantee of a cure, in medicine and in any other field of human knowledge.

Facing the challenge of formulating (reformulating) the foundations of a science is undoubtedly an audacity and an intellectual challenge of the first order. Time will tell how far it will go. It is not for me to make predictions, but I can say that the foundations are secure. Nuria and Pilar have had the prudence and wisdom to place the person at the centre, as the basilar element that supports the whole edifice of this human ecology. It is not for me to advance the concrete proposal of the book, which emerges in the final pages in a natural and almost obligatory way from its reading. But I can also affirm that its pages manage to condense the wisdom of many others and channel it appropriately into a virtuous spiral that ascends from the individual, in the family and through the company towards a society and a culture that are authentically human, in the most personal sense of the term. And who is a person if not the one who is capable of loving.

It only remains for me to thank Nuria and Pilar for having given me the honour of writing the prologue to their book and for having given me the

[1] Cardona, Carlos. *Ética del quehacer educativo*, Ediciones Rialp, S.A., Madrid, 1990, p. 31.

opportunity to participate in something as unusual as the foundations of a science.

—Javier Vidal-Quadras Trías de Bes
Lawyer
Secretary General of the IFFD,
a federation with consultative status at the UN

INTRODUCTION

In 2006, Al Gore[2] set out his thesis on climate change in the documentary film An Inconvenient Truth. Filmmaker Davis Guggenheim filmed the then US Vice President and presidential candidate for the White House in a series of lectures, in which he warned of the dangers of Global Warming and urged immediate action to counteract the destructive environmental effects, starting with a shift from coal to clean electricity.

The documentary left an indelible mark on global consciousness from its release, making it clear that a vast majority of companies and citizens had been blind for many decades to the environmental impact of their actions and omissions. The film went beyond the screen, sparking a public debate on the urgency of tackling global warming. Gore, with his compelling presentation of scientific data and alarming projections, catalysed global action. He inspired individuals, governments and organisations to take action to mitigate climate change, awakening a collective awareness of the shared responsibility to protect our planet for future generations.

But, while this is true, even more relevant is the blindness we continued to suffer from regarding the impact of business and political decisions on what we have been calling human and *social pollution*. This concept synthesises the footprint of managers who make decisions as if employees were mechanical cogs in a wheel, without considering how they return to their families after endless working days, and the footprint of political leaders who make decisions without taking into account the real impact on citizens. In a way, we can see how toxic emissions are also produced in society, in the form of ideologies, management styles, etc., which pose as great a risk to the human ecosystem as they do to the environment.

Political and business institutions do not exist in a vacuum; they are intrinsically intertwined with the society they serve. Political and business decisions shape the socio-economic environment in which we live and directly affect people's quality of life and the health of the planet and society, with a direct impact on sustainability. For example, government policies that favour environmental deregulation for the sake of economic

[2] GUGGENHEIM, D. (2008): "An inconvenient truth"

growth can lead to the degradation of natural resources and the exacerbation of social inequality. Similarly, business practices that prioritise short-term profits over long-term sustainability can generate negative externalities that fall disproportionately on marginalised communities and the environment.

The first two decades of the 21st century have highlighted the vulnerability of the human ecosystem, with catastrophic events that are difficult to forget. The tsunami in Japan (2011), which triggered the Fukushima crisis, Hurricane Sandy (2012), one of the most destructive hurricanes ever to hit the Atlantic, and Katrina (2005), joined the European sovereign debt crisis (2010-12) in painting a bleak picture of destruction, desolation and poverty around the world. And the worst was yet to come.

Natural catastrophes and global financial crises were joined in 2019 by the COVID pandemic, an event for which no one was prepared. Without going into the health or economic considerations, which have been amply documented and analysed, this global health crisis produced an emotional pain in society as a whole that will be difficult to forget.

In an increasingly interconnected world, where the impacts of political and business decisions reverberate through social and environmental structures, human ecology emerges as an indispensable approach to understanding and addressing sustainability challenges. Planet Earth is a global village that must confront the uncomfortable truth of social pollution and its long-term unsustainability: individuals largely dehumanised and polluted by a value-free society. In this book we explore the fundamentals of human ecology and its relevance as a paradigm for a sustainable economy. We delve into the complex web of interdependencies between political and business institutions and society and analyse how the adoption of certain policies or the introduction of toxic ideologies can erode the human ecosystem. In short, the aim is to highlight the importance and urgency, both economic and social, of caring for the human ecology as a sine qua non condition for safeguarding our common home and its inhabitants.

Just as there was a time when we ignored the impact of our industries on the environment, many political and business leaders today ignore their contribution to the destruction of the human ecology. They pollute their own organisations and society with practices, ideologies, and policies that damage and dehumanise them, when they do not allow their employees to fulfil their roles as members of a family and a community. This is one of the theses that underlies the argument we present. Pollution and the deterioration of the human ecosystem generate adverse consequences for

individuals and families, generating a negative cycle that feeds back on itself: people affected by the toxicity of the environment are less able to generate healthy links in the community and in the family, which produces even more discomfort that, in turn, leads to lower productivity and greater labour and social conflict, illnesses, etc. Human ecology provides precisely this component of interrelation between all the elements of the system, which is also dynamic.

In this study we want to highlight the interrelation of five elements: the cultural environment, society, the company, the family and the human person. They are all part of a whole - an ecosystem - which can be harmonious or unbalanced, and which depends to a large extent on the actions of individual human beings. The human ecosystem, like any ecosystem, is made up of individuals, their interactions with each other, and their interaction with the physical environment. Its balance and sustainability depend on the quality of these interactions and the ability to respond promptly to the emergence of toxic elements. Economic or other crises can serve as catharsis (in biology, spontaneous or provoked expulsion of substances harmful to the organism) for the expulsion of toxic elements that have penetrated the human ecosystem.

The adoption of certain policies or the promotion of toxic ideologies can trigger a cascade of detrimental effects that undermine the health and resilience of the human ecosystem. A clear example is environmental deregulation driven by corporate interests, which can lead to air and water pollution, the destruction of fragile ecosystems, and an increase in diseases related to exposure to toxic chemicals. This environmental erosion not only threatens biodiversity and climate stability, but also undermines the health and well-being of the human communities that depend on these natural resources for their livelihoods. Similarly, the spread of ideologies that perpetuate social and economic inequality can generate tensions and conflicts within society. The disproportionate concentration of power and wealth in the hands of a privileged elite can fuel the marginalisation and exclusion of vulnerable groups, which in turn weakens the social fabric and hampers the ability of communities to work together to find sustainable solutions.

In the face of this cascade of perverse effects and erosion of the human ecosystem, steps must be taken to reverse the cycle and promote a positive, virtuous circle of protection and empowerment of the human ecosystem. This will undoubtedly produce a balanced and enriching ecosystem, which are essential conditions for progress towards economic, environmental and

social sustainability. The first step is to build a resilient society, something that many voices have called for in the wake of the COVID health crisis.

A resilient society is one that has the capacity to adapt to adverse situations, whether natural or human-induced. It is a society that absorbs impacts and recovers quickly, transforming itself from these events.

Society is aware of the pollution of rivers, seas and air, of the holes in the ozone layer, of abuses in fishing or in the felling of forests, or of the destruction of coastlines caused by excessive housing construction. There is an awareness of the excess of waste, the product of exaggerated consumption that causes effects that end up having a negative impact on human beings, on their relationships and, therefore, on their quality of life. However, it is difficult to admit that the human ecosystem in which we live is also polluted. This pollution reduces our resilience, our capacity to cope, as a society, with the threats of any kind that will inevitably occur.

Finally, we close this introduction with an idea that may go unnoticed because it is obvious, but which is the cornerstone of our argument. Society is made up of people, individuals. Once again, the ecological perspective helps us to focus both on the collective (society, company) and the unique and unrepeatable individual. It will therefore be necessary to devote a few pages to understanding some of the fundamentals of the behaviour of the protagonist of this ecosystem, the human being.

CHAPTER 1

ECOSYSTEMS AND ECOLOGICAL BALANCE

In this chapter we will explore the concept of the ecosystem and the important role that ecological balance plays within the framework of human ecology. Profound comprehension of these principles is imperative for effectively navigating the multifaceted challenges confronting modern society.

The term ecosystem refers to a complex system composed of dynamic interactions between living things and their physical environment. From a human ecology perspective, we recognise that humans are an integral part of the ecosystems they inhabit, and that our actions have a significant impact on the health and resilience of these systems. But we are also aware that our own ecosystem, the human ecosystem, has its own logic, rules and risks. It is therefore imperative to understand how our activities affect the structure and functioning of our own ecosystem, as well as our ability to maintain a sustainable ecological balance. In the same way that the pollution of the sea by an oil spill generates a cascade of reactions throughout the marine ecosystem, the emergence of toxic ideologies or paradigms in the human ecosystem can and does have a huge impact on society, the economy, families and, of course, individuals, breaking the fragile ecological balance.

The concept of ecological balance refers to the ability of an ecosystem to maintain a stable and healthy dynamic over time. This implies a delicate balance between the different biotic (living organisms) and abiotic (non-living factors) components of an ecosystem, as well as between the processes of production and consumption of resources. From the perspective of human ecology, we understand that the preservation of ecological balance is essential to ensure our own survival and well-being, as well as that of all life forms on our planet.

1.1. Ecosystems and environmental ecology

Ecology is the science that studies the relationships of living things with each other and with their environment. Behind this simple definition lies an

extremely complex object of study. The levels of analysis in ecology encompass:

1. Organisms: Focuses on individuals and how they adapt to their environment.

2. Populations: Examines groups of organisms of the same species and their dynamics.

3. Communities: Analyses the interactions between different populations in an ecosystem.

4. Ecosystems: Considers the relationship between the biotic and abiotic components of an area.

5. Biosphere: Studies the global interaction between all terrestrial ecosystems.

An ecosystem is a natural system formed by a set of interdependent living organisms that form a community and coexist in a physical environment in which they interact. Ecosystems are never totally homogeneous. Biological diversity makes them more stable and resilient, because a greater number of species can absorb and reduce the effects of environmental changes.

The introduction of new elements into an ecosystem can have detrimental effects. In some cases, it can lead to the collapse and death of many of the species it contains. The drying up of the Aral Sea, the largest inland body of water on the planet, as a result of the introduction of diversion mechanisms in the rivers that fed it and global warming, is certainly one of the clearest, most painful and most recent examples of ecosystem collapse.

However, some studies show that heavily damaged ecosystems can recover if the source of pollution ceases, and society engages in their clean-up and restoration. An example might be the recovery of ecosystems damaged by contamination of the water that supplies them. In such a case, the recovery process involves purification and cleaning of the water - removal of the pollutant -, reforestation of the damaged habitat, etc. The difference between a collapse and a slow recovery depends on two factors: the toxicity of the introduced element and the resilience of the original ecosystem.

Risks that threaten the balance and sustainability of an ecosystem can be external or internal. Let us look at some examples of the first type. If we look at the human ecosystem, at the beginning of this millennium, mankind

had already exceeded the carrying capacity of the planet by 20 percent[3]. As mentioned, ecological balance includes the right ratio between available resources and their consumption, so it is easy to deduce that we are facing a clear breach of this balance. A sustainable economy would have to change this trend, knowing that the limits are arable land used for agricultural production, urban land used for urban, industrial and transport infrastructures, and the necessary absorption land area to neutralizate the emissions of pollutants[4].

Technological innovation and markets can alleviate some problems, but they will only be of real help to sustainability if they are used for the long-term common good, and here regulation will always be necessary, but not sufficient. According to the authors of the Meadows[5] report, this is the *Sustainability Revolution*, comparable only to the Agricultural Revolution at the end of the Neolithic and the Industrial Revolution of the last two centuries. Sustainability is the cornerstone of progress. It is a global and transversal concept that serves as a gear and coordination and requires a real change of mentality.

In addition to resource depletion, the human ecosystem is threatened, as is well known, by global warming. The UN warns that global warming cannot exceed 1.5 degrees Celsius. If the temperature increase is not limited to 1.5 degrees Celsius, the effects of global warming will be "long-lasting or irreversible"[6]. According to the latest UN research, thanks to international treaties, the ozone layer is recovering. The infamous hole in the stratosphere "is recovering at a rate of 1-3% per decade[7] since 2000", and could be completely closed by 2060[8], if recovery continues at the current rate.

In an ecosystem, no organism lives in complete isolation from its environment, but interacts with each other. Relationships between the various species can be of different types, such as mutualism (mutual benefit), predation (one feeds on the other) or parasitism (using the other,

[3] ÍNDICE DE POBLACIÓN, http://www.un.org/es/sections/issues-depth/population/index.html
[4] MEADOWS, D. y RANDERS, J. (2006): "Los Límites del Crecimiento 30 años Después", Círculo de Lectores.
[5] INFORME MEADOWS, http://www.donellameadows.org/wp-content/userfiles/Limits-to-Growth-digital-scan-version.pdf
[6] https://ethic.es/2018/10/onu-calentamiento-global-1-5-grados/
[7] http://conf.montreal-protocol.org/meeting/mop/mop30/presession/Background-Documents/SAP-2018-Assessment-ES-October2018.pdf
[8] https://ethic.es/2018/11/capa-de-ozono-recupera-onu/

living off it). For their survival there must be a balance, since the ecosystem is always in motion, in an unstable way. This interdependence and permanent interconnection between the elements of an ecosystem can also be a source of threats, which, in this case, will be internal. In the human ecosystem, for example, the deterioration of the links between individuals can lead to the weakening of the support network of people, giving rise to situations of abandonment, illness, etc. This deterioration is particularly serious, as we shall see, in the case of family ties, as these are the deepest and the family is also the cradle of the primary socialisation of the new members of the human ecosystem.

In every ecosystem there are *keystone species*, that is, key species that have a disproportionate effect on their environment and play a critical role in maintaining the structure of an ecological community. They are keystone species that must be safeguarded, for example, an oak tree (which shelters birds, grows mushrooms under its shade...), or a coral, which creates a reef. They generate multiple vital interactions in a food web; many more than other species. These interactions occur with more or less intensity, depending on how much one species uses the other. For example, the shelter an oak tree provides for a bird to nest in makes the interaction between the two very intense: it is vital. The bird needs it for its survival and uses the oak tree to do so. Both interactions and their intensity are of vital importance to an ecosystem. If the keystone species are not cared for, the network falls apart: interactions decrease and so does their intensity.

What conclusions can we draw from analysing our society, understood as an ecosystem, from this perspective? Human ecology is a field of study that focuses on the interactions of people with each other and with the environment. It is multidisciplinary and shares areas of analysis with other disciplines such as social psychology, sociology, demography, and urban planning, among others.

Until now, studies have analysed the way in which human beings adapt their genetics, physiology, behaviour, and culture to the physical and social environment, as well as the relationships in time and space between the human species and the other components and processes of the ecosystems of which it forms part. However, they have paid little attention to the impact of their own actions on themselves as individuals and on their own human ecosystem for its sustainability.

1.2. Ecosystem and human ecology: the person

How does human ecology approach the study of human beings and complex social relations? The approach of human ecology studies differs according to the paradigm of the human being[9]. A first group of studies, the so-called *technocratic anthropocentrism*, considers the human being as independent of nature. This is *homo faber*, a despotic being with respect to nature. From this paradigm, human beings are valued in their role as producers of goods, as human resources or as consumers. It is based on a latent anthropological pessimism: there is a distrust of the solutions that people can provide, and an extreme confidence that science, technology, and strategy, by themselves, will solve the problems of human beings and their environment. Systems are perceived as the only way to regulate and optimise society, business, and the environment. These studies focus on the functioning of systems, the properties of their components, the processes and relationships involved.

A second group of studies is *biologism*, which approaches the human being as a more developed animal than the rest. It does not distinguish the substantial difference between humans and animals, basing all human functions on biology and genetics. One of its most radical movements is deep ecology, which advocates equality between animals and humans, extolling wildlife as a model for humanisation. Nature is constituted as the master of the human being. At its extreme, it leads to naturalistic esotericism, physical narcissism and a search for psychological and emotional well-being, which it confuses with spiritual well-being.

The third group of studies is made up of the current of *personalistic ecologism*, which sees the human being as interdependent with the environment[10]. They are the most qualified of the animal species and therefore have a responsibility to care for and protect them. He is aware that his actions affect others and that he in turn is affected by them, leaving a footprint that impacts on the present and is inherited by future generations. He therefore sees the importance of preserving the environment in which he lives, both culturally and environmentally.

Personalistic ecology argues that human ecology should approach the study of the human ecosystem by addressing the satisfaction of basic global human needs (not only physical or psychological), so that its components have an adequate substrate in which they can take root and develop. The

[9] BALLESTEROS, J. (1995): *Ecologismo personalista*. Tecnós, Madrid.
[10] BALLESTEROS, J. (1995): *Op.cit.*

individuals that make up this ecosystem must develop their capacity to relate to others, so that the density and resilience of their ecosystem is increased, the quality of life is raised, human activities that develop the ecosystem are encouraged and those that unbalance and destroy it are limited.

The first two paradigms, the technocratic or mechanistic and the biologistic or psychologistic, are based on an incomplete conception of the human being that does not respond to or take into consideration the transcendent reality of the person, beyond his or her mere biological existence. The concept of personhood implies the capacity to think, feel, act and relate to the surrounding world in a conscious and reflective manner. The person is also imbued with a moral and ethical dimension, being responsible for his or her actions and decisions, and learning from them.

The study of the human ecosystem must necessarily begin with an understanding of its main element, the person, and then study their behaviour, their interactions and the logic of the ecosystem itself. People are free systems that learn. Social psychology postulates that learning takes place primarily at the social level. The person and the environment do not function as independent units, but determine each other, reciprocally. The experiences generated by behaviour also determine, in part, what a person can do and what he or she becomes, which, in turn, affects his or her subsequent behaviour[11].

From an anthropological perspective, stating that the person is a free system that learns implies considering that learning takes place after every action or, what is almost the same thing, after every decision. Human beings change with every decision they make, and this is the basis of learning. The idea that a person changes with every decision they make is based on the concept that our choices and actions have a direct impact on our personal development and the shaping of our identity. This concept recognises that every decision, however small it may seem, shapes our experience and contributes to our growth and evolution as individuals. However, because we are free, this contribution is not always positive, but negative learning can occur, i.e. we may identify as effective and successful a decision, and its corresponding action, that in the medium and long term is not sustainable.

[11] BANDURA, A. (1977): *Social learning theory*. Englewod Cliffs, J. J.: Prentice-Hall.

Every time we face a decision, we are at a crossroads that presents us with different options and possibilities. The choice we make at that moment determines not only our immediate course of action, but also how we perceive ourselves, how we interact with others and how we adapt to our environment. These decisions can be influenced by a variety of factors, such as our beliefs, values, past experiences and personal goals.

In addition, each decision can have a cumulative effect over time. The choices we make today can lay the foundation for future decisions and behaviours, creating a pattern or trajectory in our lives. This means that we are constantly changing and growing, and that our present actions have the potential to transform our lives and our identity in the future. For better or for worse.

Another source of human learning is through the influence of example[12]. There is abundant research showing how people reproduce actions, attitudes and emotional responses exhibited by role models[13] (*vicarious learning*). This seems to be the best explanation for the rapid transfer of behaviour. Cultivation theory, developed in the late 1970s within the vicarious learning paradigm, addresses the question of the influence of the media on the beliefs and behaviours of individuals. Today we could extend these developments to social networks. Basically, it is postulated that the observation of different behaviours and attitudes in the media and social networks produces in the individual not an automatic imitation, but a cognitive distortion, to the point of confusing social and human reality with what appears in the media. This circumstance represents a serious risk and a field of opportunities, depending on the behaviours offered[14].

Human freedom and capacity for self-transcendence, i.e. the unique ability to go beyond oneself, transcend one's limitations and reach higher levels of understanding, growth, and action, leads to the individual being able to regulate and control one's behaviour. Research shows[15] that a person is affected as much by the external consequences of their behaviour as by the internal ones. In other words, a person's behaviour is influenced by both external factors (the social and cultural environment, external rewards and

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[12] BANDURA, A. (1976): "Social learning theory". In J. T. Spence, R. C. Carson, & J. W. Thibaut (Eds.), *Behavioral approaches to therapy*. Morristown, J. J.: General Learning Press, pp. 1-46.
[13] BANDURA, A. y WALTERS (1963); BANDURA (1969); FLANDERS (1968).
[14] TRIGLIA, A. (2016): "La Teoría de Cultivo: ¿cómo nos influye la pantalla?" Portal Psicología y Mente.
[15] BANDURA, A., *Op.cit*.

punishments) and internal factors (one's own beliefs, values and emotions). This implies that human behaviour is the result of a complex interaction between internal and external factors, both of which have a significant impact on how a person acts and behaves.

Human ecology is, as discussed above, a multidisciplinary area of knowledge, intrinsically related to a wide range of human sciences, and therefore brings indisputable value to the understanding of human and social reality as well as the conditions for its sustainability, in parallel to how ecology contributes and provides guidelines for environmental sustainability.

The *black swans* of the first two decades of the 21st century - the European sovereign debt crisis, the financial crisis, natural disasters, pandemics - highlighted the vulnerability of the human ecosystem and the arrogance of pure rationalism and scientism. It opened the door to new strategies for understanding reality, including human ecology, with the aim of safeguarding the conditions required for the sustainability of our ecosystem. These conditions are what will allow both the human being as a whole[16] and the environment to develop.

External changes in the environment make adaptive capacity crucial, but often make it difficult to learn from previous experience. However, when people's beliefs and values are aligned with organisational principles, this not only facilitates adaptation, but also increases opportunities for improvement, both at the individual level and in the wider organisational context. Integral human development and care for the environment are intrinsically interconnected. Promoting responsible behaviour and sustainable development is essential to ensure a prosperous future for both people and planet.

1.3. Culture as the core of the human ecosystem

The dimension of the human being as a social being gives a crucial role to culture as an integrating element of the environment. Culture is an invisible but powerful fabric that envelops and shapes human experience at all levels, from the individual to the collective. In the vast human ecosystem, culture plays a fundamental role, acting as a bridge between people and their environment, influencing their perception, behaviour and development. This intricate web of ideas, values, beliefs, and knowledge plays an important role in the evolution and adaptation of societies. Culture is an

[16] MELÉ, D., CASTELLÁ, J.M. (Eds.) (2010): *El desarrollo humano integral*, Iter.

intrinsic and indispensable component of the human ecosystem. It acts as a system of knowledge, a lens through which we perceive the world, a set of norms that regulate our behaviour and a source of identity and social cohesion. Recognising and valuing the importance of culture in the human ecosystem is essential to promote cultural diversity, foster intercultural understanding and build more just and sustainable societies.

First, culture acts as a shared knowledge system that enables individuals to understand and make sense of their environment. Through culture, people acquire skills, values, beliefs and norms that guide their interaction with the world around them. This cultural knowledge is transmitted from generation to generation, both explicitly, through formal education, and implicitly, through observation and imitation within the community. Thus, culture serves as an adaptive mechanism that enables human groups to cope with environmental and social challenges over time.

In addition, culture influences the way people perceive and value their natural environment. Each society develops its own worldview, which includes conceptions of the relationship between humans and nature. These worldviews can range from cultures that revere and protect nature to those that exploit it without restraint. This cultural diversity in the perception of the environment has significant implications for the conservation and management of natural resources, as well as for the mitigation of climate change and biodiversity loss.

On the other hand, culture also plays a crucial role in shaping the social and political structures that govern human interaction. Social institutions, such as the family, religion, the economy and the legal system, are imbued with cultural norms and values that regulate individual and collective behaviour. These social structures act as filters through which human action is channelled, determining who has access to resources and power within society.

In addition, culture facilitates social cohesion and collective identity by providing a sense of belonging and shared community. Rituals, ceremonies and artistic expressions are cultural manifestations that reinforce social bonds and strengthen the sense of cultural identity. In an increasingly globalised world, where geographical borders are blurring and cultures are intertwining, the preservation and promotion of cultural diversity becomes an ethical and political imperative.

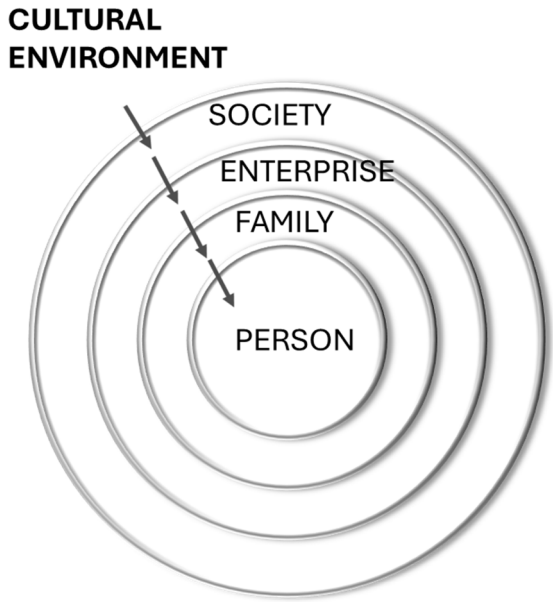

Fig. 1. Representation of the human ecosystem and the influence of the cultural environment

Ideas, ideologies, and values are promoted and transmitted through the different organisations that shape society. From sports associations to religious, professional or community communities, human beings naturally seek to organise themselves and establish relationships of belonging to different collectives, sharing goals and values.

1.4. Human ecosystem: organisations, ties and interactions

An organisation is a "group of people whose efforts - actions - are coordinated to achieve a result or objective that is in the interest of all of them"[17]. It is crucial for an organisation to exist that the people in it have a common purpose and a way of coordinating their actions.

[17] PEREZ LÓPEZ, J.A. (1993): Fundamentos de la Dirección de Empresas", Rialp, p. 15.

The organisation and the individual learn from each other[18]. Both psychology and organisational theory show evidence of the existence of two distinct realities: attitude and behaviour. Both are affected by the individual's dispositions, perceptions, and instrumentalities[19]. For this reason, both have to be taken into account when trying to predict the influence of context on behaviour. Thus, for example, while sanctions undoubtedly promote some specific types of behaviour and discourage others, some mechanisms or elements of governance, such as surveillance and orders, show time and again effects contrary to their intended goals. On the other hand, fear leads to covering up mistakes, and persistence in doing so can lead to failure to see them[20].

Becoming aware of one's own theory and changing it is a very costly process, because it requires questioning the theories of action that have formed the framework for one's decisions[21]. The fact that humans are intelligent and free dislocates any mathematical or predictive calculations that might be made, so any comparison with the purely animal world will be limited. Taking models from the natural sciences without an in-depth knowledge of the particularities of the human being leads to failure. That occurs when the profound differences between them have not been taken into account, nor has it been appreciated that the human being is the key species on which all the others depend.

The characterisation of the person as a key element of this human ecosystem and of organisations is completed with the consideration of the links and interactions that occur both between individuals and between them and the organisations in which they are integrated, including the most generic of these: society. These interactions have their own specific value, superior and different to that of the individuals and organisations themselves. Other disciplines have conceptualised this value as human capital, relational capital and social capital.

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[18] MARCH, J. G. (1991): *Op. cit.*

[19] KENDRICK, D. T. and FUNDER, D. C. (1988): "Profiting from controversy: Lessons from the person-situation debate", *American Psychologist, 43*(1), pp. 23-34.

[20] ARGYRIS, C. (1977): "Double-loop learning in organizations", *Harvard Business Review*, September-October, pp. 115-125. p. 117.

[21] ARGYRIS, C. (1976): "Single-Loop and Double-Loop Models in Research on Decision Making" *Administrative Science Quarterly 21*, pp. 363-376.

Human capital refers to the value that a person contributes to the economy or society based on his or her skills, knowledge, and experience[22].. From an economic perspective, human capital is considered an important factor of production alongside physical capital and financial capital, which depends not only on the quantity, but also on the quality, education and performance of the people involved in the production process. It is created through the acquisition of skills and the development of capabilities[23].. An important factor in the development of human capital are the social relations within the family and the community[24].

Nahapiet and Ghoshal introduce the concept of relational capital in the organisational context[25]. They argue that relational capital, along with structural capital and human capital, is an important source of competitive advantage for organisations. Relational capital refers to the resources and benefits derived from interpersonal relationships within a social network or an organisation. This concept is based on the idea that strong, positive personal relationships can generate tangible and intangible benefits, such as emotional support, access to privileged information, opportunities for collaboration, social influence and help in times of need. These connections can be especially valuable in work, business, academic and community settings, where trust and reciprocity can lead to greater success and well-being.

The term *social capital* emerged in *community studies* and highlights the great importance of a network of strong personal relationships for the survival and well-functioning of a city. These relationships develop over time and provide the necessary basis for trust, cooperation, and collective action to take place within them[26].

Authors agree on the importance of social capital, and many sciences have adopted this concept (human capital, companies, nations, teams,

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[22] BECKER, G. (1964): *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, NBER.
[23] COLEMAN, J. S. (1988): "Social Capital in the Creation of Human Capital", *American Journal of Sociology, 94*, pp. S95-S120. (p. S100)
[24] COLEMAN, J. S. (1988): "Social Capital in the Creation of Human Capital", *The American Journal of Sociology, 94*, pp. S95-S120.
[25] NAHAPIET, J. y GHOSHAL, S. (1998): "Social Capital, Intellectual Capital, and the Organizational Advantage", Academy of Management Review, Vol. 23, No. 2.
[26] JACOBS, J. (1965): *The death and life of great American cities*. London: Penguin Books.

communities...)[27]. However, they do not agree either on its definition or on whether it is a public or private good.

Nahapiet and Ghoshal[28] define it as the sum of current and potential resources that make up the network of relationships that an individual or social unit possesses. According to these authors, social capital has three dimensions:

1. Structural dimension: made up of the properties of the social system and the network of relationships. These properties are density, connectivity and hierarchy. All of them have an impact on the flexibility dimension of social capital.

2. Relational dimension: composed of the type of personal relationships that people have developed with each other over time and influence their behaviour. They satisfy human needs such as sociability, approval and prestige. Key facets of this dimension are trust and trustworthiness, norms and sanctions, obligations and expectations, and identity. It increases individuals' identification with the group[29], and increases willingness to share information, learning and knowledge creation.

3. Cognitive dimension: made up for the resources that provide shared representations, interpretations, and systems of meanings. They are of particular importance for intellectual capital. They include shared language and codes.

Adler and Kwon[30] point out that goodwill is at the heart of the concept of social capital which has its effect on solidarity. Coleman speaks of the importance of continuity in social relationships. Stable and long-lasting

[27] ZHENG, W. (2010): "A Social Capital Perspective of Innovation from Individuals to Nations: Where is Empirical Literature Directing Us?" *International Journal of Management Review,* Journal Compilation, (2008) Blackwell Publishing Ltd, MA, USA, and British Academy of Management. Published by Blackwell Publishing Ltd., pp.151-183.

[28] NAHAPIET, J. y GHOSHAL, S. (1998): "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review 23*, Nº 2, pp. 242-266.

[29] MERTON, R.K. (1968): *Social Theory and Social Structure,* The Free Press, p.188.

[30] ADLER, P. S. y KWON, S. (2002): "Social capital: prospects for a new concept", *Academy of Management Review*, 27(1), pp. 17-40.

relationships are key features of the network, associated with high levels of trust and norms of cooperation.

The quality of ties is related to quantity of time, emotional intensity, intimacy and reciprocity. Strong ties imply intense interactions, capable of engendering mutual trust, willingness to collaborate, social cohesion and a collective identity[31].

The presence of social capital increases the effectiveness of actions, as ties provide channels for the transmission of information, increases the transfer of knowledge[32] due to increased trust, decreases the likelihood of opportunism, and reduces the need for costly control processes[33]. Because of the stability that results, creativity and innovation are facilitated, learning is encouraged, cooperation and value creation are fostered. The presence of trust ensures communication and dialogue, increases diversity and enhances the potential of a system to cope with complexity[34]. In this sense, smart cities are often referred to as *smart cities*, focusing on technology and forgetting the social capital that could turn them into *wise cities*.

The development of social capital is significantly affected by the factors that shape the evolution of social relations: time, interaction, interdependence, and *closure*[35]. Time is important for the development of social capital because all forms of social capital depend on the stability and continuity of the social structure. Misztal[36] suggests that the resurgence of interest in trust can be explained by the erosion of interdependence and social solidarity. Moreover, social relationships are generally reinforced through interaction, but die if they are not maintained. Interaction is thus the precondition for

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[31] ZHENG, W. (2010): "A Social Capital Perspective of Innovation from Individuals to Nations: Where is Empirical Literature Directing Us?" *International Journal of Management Review,* Journal Compilation, (2008) Blackwell Publishing Ltd, MA, USA, and British Academy of Management. Published by Blackwell Publishing Ltd., pp.151-183. p. 166.

[32] KANG, M. y KIM, Y. (2010): "A Multilevel View on Interpersonal Knowledge Transfer", *Journal of the American Society for information Science and Technology*, 61(3), pp. 483-494.

[33] PUTNAM, R. D. (1993): "The prosperous community: Social capital and public life, *American Prospect,* 13, pp. 35-42.

[34] LUHMANN, L. (1979): *Trust and Power*, Wiley.

[35] NAHAPIET, J. y GHOSHAL, S. (1998): "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review 23*, Nº 2, pp. 242-266. Pp. 256-257.

[36] MISZTAL, B.A. (1996): *Trust in Modern Societies*. Cambridge: Polity Press.

the development and maintenance of dense social capital[37]. Strong communities, the archetype of dense social capital systems, have separating identities and a sense of sociological boundaries that distinguish members from non-members[38].

Coleman[39] stresses the importance of social capital in the family and in society for the creation of the next generation's human capital. He measures family human capital by the education of parents, as they provide a cognitive environment for the child that is conducive to learning. He also points out that family social capital is the time and effort that parents devote to the child's intellectual issues, as well as the relationship between family members. The physical absence of adults can be described as a structural deficiency in the family's social capital. The single-parent family stands out as the most prominent element of structural deficiency in itself.

Social, human, and relational capital are very valuable resources of the human ecosystem, something like water or oxygen for the natural ecosystem. Moreover, they are vulnerable resources, exposed to poisoning. Their deterioration is often at the root of major economic, political, and social crises and they are both cause and effect of individual malaise and illness.

1.5. Decapitalisation of the human ecosystem

Research in fields such as education, urban poverty, unemployment, crime and drug abuse control, and even health, has found that good outcomes occur in civically engaged communities. The importance of social bonds within each group has also been demonstrated. All of this shows the vital importance of social networks for good economic performance[40].. But what happens if this social, human, and relational capital begins to degrade? Can a culture contain toxic elements that poison and collapse the human ecosystem, like the effect of polluted water in a natural ecosystem?

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[37] NAHAPIET, J. y GHOSHAL, S. (1998): "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review 23*, Nº 2, pp. 242-266. Pp. 256-257.

[38] ETZIONI, A. (1996): "The responsive community: A communitarian perspective", *American Sociological Review, 61*, pp. 1-11.

[39] COLEMAN, J. S. (1988): "Social Capital in the Creation of Human Capital", *The American Journal of Sociology, 94*, pp. S95-S120, p. S110.

[40] PUTNAM, R. D. (1995): "Bowling alone: America´s declining social capital", *Journal of Democracy 6,* pp. 65-78.

Social decapitalisation, i.e. the erosion of social capital, has very negative effects on human and relational capital, generating a negative feedback loop that can endanger the balance of the human ecosystem, increasing its vulnerability and reducing its resilience. Culture, if infiltrated by toxic ideas or ideologies, can have a significant negative impact on the sustainability of the human ecosystem. When beliefs or practices that promote over-exploitation of natural resources, discrimination, violence, inequality or extreme individualism are perpetuated, they have harmful effects on both the environment and human communities.

For example, if a culture embraces the idea that progress can only be achieved through uncontrolled exploitation of natural resources, this can lead to overexploitation of ecosystems, loss of biodiversity and depletion of resources, which in turn threatens the long-term stability and sustainability of society.

Similarly, ideologies that promote the supremacy of certain ethnic, religious, or social groups over others can result in inter-group conflict, marginalisation and exclusion, undermining social cohesion and weakening the ability of communities to work together towards common conservation and sustainable development goals.

Rampant consumerism, the pursuit of wealth accumulation as the sole indicator of success or exacerbated individualism are some of these trends that act as toxic elements, capable of eroding and destroying the human ecosystem as well as the natural environment.

It is important to note that these toxic ideas or ideologies do not arise in a vacuum but are produced because of a number of factors, such as history, economics, politics and the media. Addressing the negative impact of culture on the sustainability of the human ecosystem therefore requires a holistic approach that examines and challenges the power structures and dominant narratives that perpetuate these harmful ideas.

Promoting a culture of respect, equity, solidarity, and environmental responsibility is fundamental to building more sustainable and resilient societies. This involves fostering education, intercultural dialogue, citizen participation and the development of policies that promote social and environmental justice. Ultimately, cultural transformation towards more sustainable values and practices is essential to ensure a healthy and prosperous future for present and future generations.