HARMONIC INNOVATION

Super Smart Society 5.0 and Technological Humanism

by

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Introduction

About Harmonic Innovation

by *Francesco Cicione*

On December 24, 1968, on Christmas Eve, the crew of Apollo 8 was orbiting the Moon.

It was the first time in the history of mankind that a man left Earth's orbit.

It was the first time in the history of mankind that a man came so close to another planet.

Not only from a symbolic point of view, that moment represented the culmination of a journey marked by rapid and growing scientific discoveries and unprecedented technological innovations: for many it represented the triumph of human ingenuity and its praiseworthy destiny and progress.

However, for a singular contrapasso, the commander Frank Borman, the pilot of the command module James Lovell and the pilot of the lunar module William Anders, in those few hours so full of meaning and universal symbolism (literally) felt the need to send a message to humanity that, apparently, told a different story.

"We are approaching the lunar sunrise, and for all the people of Earth, the crew of Apollo 8 has a message we want to send."

Then the three astronauts took turns reading the first 10 verses of the first chapter of Genesis, the one describing Creation.

When they finished, the last astronaut concluded, "*And on behalf of the Apollo 8 crew, we want to wish you: Good evening, good luck, and Merry Christmas! And may God bless you all on the good Earth.”*

Beyond the controversies and polemics that ensued and the different cultural positions regarding this initiative, we cannot but draw a fundamental lesson from it: Man always pushes himself beyond his limits and, after doing so, he always needs to recover the meaning of his constant progress.

There are different ways and paths by which all this happens: what is certain (and important) is that it happens punctually, whether it is the result of *kairos* or *chronos*.

No matter how much Man, every man, repeatedly tries to stifle this ontological need of his own being, it always resurfaces overbearingly.

No matter how much Man, every man, tries to emancipate himself from the roots of meaning written in his own natural code, they always reassert themselves as insuperable.

No matter how much Man, every man, pursues the illusory dream of absolute freedom, the historical evidence of a fundamental and insuperable regulatory norm always returns.

Several thinkers have reflected on this topic.
Kant did so, reminding us how necessary and indispensable it is to recover a careful look at the "*kingdom of ends*" illustrated in the "*Critique of Pure Reason*", bringing out the existence of a "*world in itself*" that is conquered by obeying absolute categorical imperatives, universal, necessary and justified in themselves.

Pascal did so, reminding us of the importance of the "*secret and transcendent presence in events that allows us to go beyond mere factuality*", warning us of the risks that could arise if we were to neglect this necessary dimension, that is, getting to the point of wondering "*who put man in this corner of the universe, what he has to do, or what will become of him when he die."*

Heidegger did so, reminding us that "*what is truly disturbing is not that the world turns into a complete domain of technique. By far more disturbing is that Man is not at all prepared for this radical change in the world. By far more disturbing is that we are not yet able to achieve, through a thinking thought, an adequate confrontation with what is really emerging in our epoch*".

Leibniz did it, overcoming (and resolving) Descartes and Locke as well as the dualism between *thought* and *matter*, between *res cogitans* and *res extensa*, he speaks of the presence in things (animate and inanimate) of an *entelechy*, a center of truth and autonomous force, a fundamental law that, if recognized, can direct every event towards a basic authenticity, without which, instead, everything contributes to entropy and not to the harmony of the Cosmos: "*There is thus a perfect harmony between the perceptions of the monad and the movements of the bodies, a harmony predetermined from the beginning between the system of efficient causes and that of final causes; and it is in this that the agreement and physical union of soul and body consist, without the one being able to change the laws of the other."*

Therefore, the vertigo of the infinite possible finds its stabilizing balance in the search for meaning.

After all, this is the very heart of the new concept of Harmonic Innovation besides the message and function it aims to exercise within the public international debate: recognizing that technique is not enough and can never be enough on its own.

It is for this reason that a large group of intellectuals has decided to engage in the reflection and development of this line of research.

In this first multi-voice insight on the concept of Harmonic Innovation, it is worth getting back to the starting point by proposing in full what has already been written together with Luca De Biase, with the aim of proposing a first, concise and sketchy formulation of this new paradigm.

> *"What is Harmonic Innovation then?*
>
> *Let us try to outline it, to represent it, to introduce it, to define it in its most general terms.*
>
> *It is, however, an initial, deliberately general and unsystematized (in some passages provocatively superficial, sketchy, messy and popularized) contribution of the initial perimeter of this new domain.*

Let's start by saying that Harmonic Innovation is first of all "sense", "integration" and "community": we will have to come back later to these aspects to specify them in their operative, methodological and organizational declinations.

Harmonic Innovation is "noble and kind."

And, then again, Harmonic Innovation is:

- ***Ethical** (unblemished, terse, inoffensive, good-loving, beneficent, free, untainted, holy)*
- ***Intelligent** (subtle, sharp, Man-friendly, stable, secure, useful, new)*
- ***Generative** (performing, emanation of creative power, at once unique and multiple)*
- ***Pervasive** (penetrating, mobile, agile, multidisciplinary)*
- ***Sustainable** (circular, reflection of longstanding balance)*

Harmonic Innovation believes in innovation as a tool to contribute to the perennial mystery of "creation" which is always renewing itself and always evolving, nourished by its own inner "truth" whispered by the "spirit" of each time.

Harmonic Innovation believes in innovation that, after having questioned reason, is willing to open up to a greater light, inspired by a sapiential approach constantly aimed at pursuing the encounter between immanence and transcendence, between finitude and infinity, between present and eternity, between technological research and moral research, in the constant evaluation of the ethical implications of each intervention.

Harmonic Innovation believes in innovation that does not reject the logic of dual thoughts that always help us when, faced with the immense scope of certain questions, we must at the same time affirm and contradict, simplify and complicate, understand and get lost, so that from the infinite possibilities of meaning a glimpse, an intuition, a spark of "truth" can arise.

Harmonious Innovation believes in innovation that is willing to confront the concept of "limit" and, more so, that is willing to assume the concept of "limit" as pivotal to the development of a consistent, effective and sound theory and practice of innovation.

Harmonic Innovation believes in innovation as a tool for the promotion of an integral anthropology of Man (and humanity) and interprets acceleration and "open innovation" activities as tangible means to promote inclusive, generative, cohesive and harmonious economic, social, cultural and environmental impacts.

Harmonic Innovation believes in innovation that assumes technological capital as an instrumental element for the enhancement of environmental resources, social resources and human resources, for the satisfaction of emerging and unexpressed needs, the affirmation of the culture of sustainability and the overcoming of the many contemporary inequalities, in accordance with the provisions of the "UN 2030" Agenda, the "Green New Deal" and "Next Generation EU" Programs of the European Commission, the Encyclical "Laudato sii" of Pope Francis and the Social Magisterium of the Catholic Church.

Harmonic Innovation believes in an innovation capable of combining "thought" and "action", in a continuous effort of "trespassing" and multidisciplinary aimed at the synthesis between "science" and "wisdom", between "technique" and "spirit", between "hard" and "soft science", between technological and computational domains and social, economic and humanistic perimeters.

Harmonious Innovation believes that innovation is "being", not "doing", because doing innovation means "being" new living nature, it means "being" the "truth" of oneself, constantly striving for the fulfillment of what one is in power and what one is not yet in action.

Harmonic Innovation believes in the centrality of "Man" as the "subject" of every innovation process, since thinking of a new world and humanity without a renewed "Man" reconciled with his own "truth", is an exercise of sterile utopia or sentimental and romantic manifestation of good intentions.

Harmonic Innovation believes in social and business communities organized according to collaborative, participatory and horizontal models of "open organization", based on principles of competence, quality, responsibility, sharing, result orientation, transparency and legality, constantly aiming at the enhancement and communion of talents and the full release of personal and collective potential.

Harmonic Innovation believes in work as a "vocation and civil duty", oriented to the construction of the common good and to the fulfillment of an inalienable moral obligation, enhancing, in this perspective, the need for everyone to be constantly engaged in paths of professional and moral growth.

Harmonic Innovation believes in the primacy of "being" over "doing" and "having", and in this perspective it regards professional commitment not in a logic of profit and economic dividends maximization, but aimed at the construction of shared value and beauty, in the generation of measurable social and economic impacts.

Harmonic Innovation believes in the promotion of the culture of sustainability and impact finance in the perspective of an active commitment to the reduction of inequalities and social injustice, the protection of common goods, the preservation of social peace and peace among peoples, social inclusion, the dissemination of knowledge, the cultural growth of new generations.

Harmonious Innovation embraces the perspective of the Super Smart Society 5.0 and technological humanism, re-actualizing the vision and method of the classical "paideia" as well as the virtuous Renaissance integration between liberal arts, humanistic crafts and philosophical/theological culture.

Harmonic Innovation is an "evolutionary", "integrative" and "synchronic" approach to the culture of "open innovation" (which in turn overcomes the typical approach of "closed innovation").

The concept of Harmonic Innovation stands, therefore, as a new stage in the evolution of thinking around the dynamics that change the world. It serves to question which innovations, among the new, are the ones that matter. It helps to discern, in the great transformations, what improves the state of things and what risks worsening it. It allows us to design the ways through which innovation can generate a real, positive impact.

In order to understand how Harmonic Innovation can help society to give itself a direction and to pursue a project of progress, it is necessary first of all to clear the field of buzzwords and preconceptions. Even the best words, when they are repeated too much, perhaps by people who do not have the merit of seeking consistency between what they say and what they do, unfortunately wear out. Only junk never wears out; on the contrary, it accumulates and grows larger in the chatter of those who do not know what they are talking about, but they talk about it anyway. Innovation is Harmonic first of all if it is witnessed rather than affirmed. Of course, nobody is perfect. And least of all the writer. But a minimum of commitment to get closer to the value of the concreteness of results as well as to that of the storytelling of promises would not be a bad idea.

Apart from all this, though, if we look back at the history of serious attempts to innovate, there are at least two other forms of innovation. Traditional innovation, in the industrial world, takes place in the confines of company laboratories and meeting rooms, it is done to prevail in market competition, it is situated in the history of winning company groups and is guided by their strategy. Open innovation, on the other hand, emerges from the collaboration of many subjects who work together to design it, exploiting the strength of the network and following a common working method. Harmonic innovation, instead, is the result of a chorus of talents that, each with its own capabilities, together generate a result with "sense" for the community they serve.

Harmonic Innovation is connected to the "meaning" of things and actions. It enables action that has direction. It generates a common good which is defined by a wisdom rich in experience and thought. It leads toward happiness, peace, union, the good of all. Learning how to develop innovation that makes "sense" generates a different discernment, a new selective dynamic, with incentives linked to the totality of humans. Unlike forms of selection based on market competition, it does not assume that the best possible allocation of resources will necessarily emerge from the struggle for supremacy among firms. Unlike forms of selection based on technology, it does not assume that the new version is necessarily better than the previous one. Rather, the idea of improvement to which harmonic innovation contributes must precede and enable the action of the chorus of talents collaborating to build the common good.

Every project contains the values of those who define it. How do you build a better world if you don't know what "better" means? The new is not necessarily better. But what is fairer, preferable, in short, what is better? Of course, one can answer that this judgment depends on different points of view. And these should be respected. One can also answer that it is the choices that reveal people's preferences. And quantitative analysis of what people do is certainly important. But can these criteria be said to be enough to decide what is best?

Apart from the relativity of preferences, there are still phenomena that are good for everyone. After all, people's preferences are certainly not completely free, but are rather expressed only around the alternatives that the supply presents to their eyes. Therefore, the values of those who design the supply deeply influence people's choices. However, we cannot fail to see that there is something that is better, despite supply and demand. Something that well addresses climate change is good for everyone. The quality of the environment, of social relations, of cultural life is good for everyone. This quality that is good for everyone cannot be read in people's immediate reactions to proposals for consumption or time allocation: this quality that is good for everyone can be read through the eyes of a long-term wisdom and deep cultural dimension. It is not the result of a conflictual confrontation between contrasting worldviews. It is also the result of a chorus of values and talents that work together for the common good, at least in cases where this is so clear as to leave no room for ambiguity: biodiversity, peace, equality, respect, education, are values that, if pursued, are good for everyone.

How do you take action for Harmonic Innovation? You invest in education that maieutically frees people's creative energy. You generate processes of synthesis and integration. You select actions that produce value for the good of all, inspiring common discernment from a multidisciplinary perspective. And it is recognized when it is adopted by the community.

"When truly brothers, men don't sing in unison but in harmony," wrote Wystan Auden.

If we want to sum this up in one formula we could say that at the heart of the issue there is only one problem to be solved: the reconstruction between "*authenticity*" and "*end*" of innovation, of every technological, environmental and socio-economic innovation.

In "*La tendenza fondamentale del nostro tempo*" [*The fundamental trend of our time*] Emanuele Severino has clearly highlighted how our age, marked by the "*domination of technique (and profit)*", has intensified and brought to its extreme consequences the recurring "*will to power*" that from Plato onwards has dominated and influenced Western culture to the point of transforming "*technique (and profit)*", as well as their indefinite growth into an absolutized and self-referential "*end*", rather than a simple "*means*".

In this framework, any "*authenticity*" is diluted and a confused and relativized configuration of Humanity and its History ensues.

It is not by chance that the "absolutizing partnership" between "*technique*" and "*profit*" has given shape to a society pervaded by deep imbalances.

On this subject, this is what we wrote together with Luca De Biase:

"And it has been capitalism that has ruled for the last forty years, certainly not the market.

Even if the latter has managed to build an important niche for itself in the dimension of innovation, at times escaping the domination of capitalism. The market we are talking

about is not the static Walrasian one, that of neoliberalism. It is the Schumpeterian market in which the entrepreneur, the innovator, does not limit himself to doing all he can to gain a market share in a system of supply and demand for existing products, but creates new markets by inventing new goods and services that are adopted.

The market of neoliberalism fails to account for the structural changes introduced by innovation. The economic cycle assumes that the system remains the same and simply behaves in a more or less expansive way. Nonetheless, over the last thirty years, a dynamic of accelerated technological innovation has come into play, setting the stage for structural change such as to make it difficult to compare the performance of the economy from one cycle to another. We talk about a paradigm shift to explain the amount of contextual differences that exist between the world before the web and the world after the web, with amazing acceleration after internet access has become mobile thanks to the introduction of the iPhone. And what we have ahead of us is even bigger, with the digitization of science itself, which then can imagine creating new markets in nanotechnology, biotechnology, neuroscience, the most advanced forms of computer science, from artificial intelligence to robotics, from sensor science to big data. This marketplace of innovations creates monopoly moments for the big innovators. From those moments, innovators can start working to defend positions or move on to innovate. At that point, the distance between the stories made great by the Schumpeterian market and capitalism becomes blurred. For when the actions of innovators are welded to the big finance that supports their scalability, the innovative soul fatally dissolves into capitalist practice."

Hence the proposal of a new paradigm of innovation, the Harmonic Innovation, is a broad proposal aimed at defining a new (and harmonic) idea of society, economy and future consistent with the new direction of the big challenges of transition (digital, green, social and environmental).

One could say (and actually it is so) that Harmonic Innovation is the natural development of the concept of Open Innovation.

Or better still, that Harmonic Innovation is the Open Innovation that confronts itself with the ethical and social impacts of its activities and integrates them into its own identity as essential elements.

Harmonic Innovation is therefore an unavoidable proposal, which takes into account the new political, cultural, social and economic global framework of reference which is definitely aimed at enhancing the concept of "making innovation" as a tool for the creation of a better world (*for a better world*).

The proposal of Harmonic Innovation should come along with us at least for the next twenty years, since today, to keep on talking always about Open Innovation only, is so reductive and insufficient.

This is a possibilist and interdisciplinary effort.

It is not by chance that this first moment of collective reflection on the subject sees the contribution of social scientists and humanists prevail over the contributions coming from the technological sciences.

It seems a paradox but actually it is not: our intention is to break down and recompose the alphabet and grammar of innovation from the heart of a renewed, generative, cohesive, inclusive and sustainable humanism.

This is Harmonic Innovation, the frontier of a different and necessary future.

Harmonic Ethics. A sapiential theological look on Harmonic Innovation.

by *Nicola Rotundo*

1. Preliminary remarks

Dealing with the topic of *harmony* from the theological point of view and from the specific standpoint of *ethics* is rather sensitive. We are currently living in a time of advanced *secularism* and *scientism* that prevents, or at least hinders, the acceptance of *Revelation* as an authentic source of knowledge. However, a theology that wants to call itself truly such has Revelation as its source and therefore the Sacred Scripture (not separated from Tradition and the Magisterium). In this regard, the ancient Fathers of the Church recalled how the *Scriptures* need to be read, in order to be truly understood, in the Spirit in which and by whom they were written. Only in this way will it be possible for them to disclose to their readers the *treasure* of life and wisdom that dwells in them and to reveal to man all the mysteries they contain[1].
I use the word mysteries in the plural because it is clear that Scripture, being a "*letter*" that God addresses to his creature (Chrysostom), conceals not only the transcendent secrets of man's Creator, but also the transcendent secrets of man and of creation itself. For this reason, the great Antiochian Doctor declared its knowledge absolutely necessary, not only for monks but also for people living in the world, concluding that "*to believe that the reading of the Scriptures is superfluous is much worse than not reading them*"[2].

As a theologian, I cannot exempt myself from proceeding in this way, and I cannot develop a reflection on *harmonious ethics* without considering the primary source of theology: *Revelation* in general and the *Scriptures in* particular. The *epistemological paradigm* of my science demands it of me. And it is for this reason that by reading some of his "pages" according to this hermeneutic principle - "*Sacra Scriptura eodem Spiritu quo scripta est etiam legenda et interpretanda sit*" (*Dei Verbum*, § 12) - I will try to show how the term *harmonic ethics* should be understood, in the light of the Sacred Scriptures.

Clearly, this will be a *reading with a Christological* and *pneumatological* approach.

On the first aspect, the *Christological* one, I quote the teaching of the Apostle Paul who recalls that the apex of this *revelation* is Christ whom not only "the mystery of God" is concentrated and unveiled in, but in whom "*all the treasures of wisdom and knowledge were hidden* [*omnes thesauri sapientiae et scientiae absconditi/πάντες* οἱ θησαυροὶ τῆς σοφίας ⌜καὶ γνώσεως ἀπόκρυφοι]" (*Col* 2:3).

That "all", let no one be scandalized, should be understood in the light of the semantic origin of the Greek word πᾶς (i.e. all things and every thing, the totality) and therefore makes it necessary also for science, without foregoing what it already possesses in terms of experimental knowledge, to be open to this prospect for transcendence that it could not possess otherwise, without

[1] In his Commentary on the Gospel of Matthew, the great Doctor of the Church, St. John Chrysostom, expresses this view, advocating knowledge of the Scriptures as a beneficial exercise not only for monks but also for ordinary people, see JOHN CHRYSOSTOM, *Omelie sul vangelo di Matteo/1* (Testi patristici) [*Homilies on the Gospel of Matthew 1* (Patristic Texts)], Città Nuova, Rome 2003, 51-64, in part 62-64.

[2] *Idem*, 62.

opening itself to revelation[3]. There is a difference between *science* and *wisdom*. *Science* is acquired through study. Not so *wisdom*. *Wisdom* is a gift that descends from above (see *Proverbs,* 2:1-10; *Wisdom*, 6-9; *Sirach*, 1ff.). I quote only one verse: "*All wisdom is from the Lord and remains with him forever*" (*Sir* 1:1).

On the second aspect, the *pneumatological one*, the ancient Fathers of the Church taught that "reading the Scriptures 'in the Spirit' - serves to - obtain 'spiritual intelligence'"[4]. From this *spiritual intelligence* springs for man the acquisition of a knowledge of creation itself according to its *mystery essence*. This *spiritual intelligence* or *sapiential knowledge* is light that gives light to all other knowledge. John Paul II spoke of it in 1989: "*Moreover, sapiential knowledge gives us a special capacity to judge human things according to God's standard, in God's light. Enlightened by this gift, the Christian knows how to see inside the realities of the world: no one is better able than he is to appreciate the authentic values of creation, looking at them with God's own eyes*" (*Angelus*, April 9, 1989).

The *light of wisdom* that emanates from *revelation* does not compete with the light emanating from experimental knowledge, provided that it is cultivated with the highest intellectual (and moral) honesty, that is, in the acceptance of their own epistemological limitation that does not enable these sciences to draw undue deductions about transcendent truths and realities, to which instead, almost by nature, they should open their *prospects*[5]. By accepting this *limit,* these sciences are not impoverished, nor is their *status* as sciences violated. On the contrary, they create the conditions for other *sciences/knowledge to* offer them the *Wisdom* par excellence, the *creative* and *ordering* Wisdom, that is, the *uncreated light* that has placed and arranged everything in creation according to an end, with measure and limit. The author of the sacred *book of Wisdom* is aware that the people of Israel were being guided in their history by the wise God, whose "*all-powerful hand*, *which had brought the world into being drawing it from formless matter*" has "*arranged all things by measure and number and weight*" (*Wis* 11:17, 20).

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[3] On the scope of this "*all treasures*" (*omnes thesauri/πάντες* οἱ θησαυροὶ) the words of the medieval doctor Thomas Aquinas are still relevant: "Now, everything that can be known of God belongs to wisdom, and God knows abundantly everything in himself. Moreover, everything that can be known about creatures he knows in himself in a supereminent way. Now all that is found in the wisdom of God is also found in his one Word, for by one act of the intellect he knows all things, for in him knowledge is neither in power nor in the form of a habit. And therefore in this Word *"all treasures are hidden..."*. But he adds "*are hidden,*" because it happens in two ways that some thing is hidden from me, namely because of the weakness of my intelligence or because of a veil that is opposed," *Super Col.* c. 2, l. I, §§ 81-82 [ST. THOMAS AQUINAS, *Letter to the Colossians*, in ID., *Commentary on the* Corpus Paulinum], vol. 4, Ed. Studio Domenicano, Bologna 2007, 561-716, here 627.

[4] I. DE LA POTTERIE, *La Lettura della Sacra Scrittura "nello Spirito"*, in *Communio* [*The Reading of the Sacred Scripture "in the Spirit"*, in *Communio*, no. 87 (1986) 26]. Saint Jerome maintained the absolute necessity of the assistance of the Holy Spirit in order to penetrate the caskets of the Word fixed on paper: "*ut si quando indiguimus spiritu Dei, semper autem in exponendis scripturis sanctis illius indigemus aduentu* [in the interpretation of the Sacred Scripture we always need the Holy Spirit]", HIERONYMUS, *Commentariorum in Micheam Prophetam* [Corpus Christianorum. Series Latina, 76], 1,1,10/15 p. 430 (JEROME, *In Michea*, 1,10,15, in *Jerome. Commentaries on the Twelve Minor Prophets/1* [Naum and Micah], Città Nuova, Rome 2017).

[5] Thus Augustine wrote in his great masterpiece on the *City of God:* "But so that in the investigation of knowledge, because of the reduced power of human thought [*propter humanae mentis infirmitatem*], it does not incur the falsity of some error, it needs the divine magisterium [*opus habet magisterio divino*] to which it can submit with certainty and the help to which it can submit with freedom", AGOSTINO, *La Città di Dio*, XIX, 14., in *Opere di Sant'Agostino. La città di Dio*/III [*Augustine*, *City of God*, Book 19, 14. *Works of St. Augustine. City of God/III*], Città Nuova, Rome 1991, p. 55.

For these reasons too, Chrysostom could state that the mere thought that meditation on the Scriptures was the prerogative of "monks" would be a very harmful thought:

> "*I am not", you will say, one of the monks, but I have both a wife and children, and the care of a household. Why, this is what hath ruined all, your supposing that the reading of the divine Scriptures appertains to those only, when ye need it much more than they. For they that dwell in the world, and each day receives wounds, these have most need of medicines*"[6].

Even men of science could "receive wounds", but also "inflict wounds" to creation for lack of *wisdom*, therefore for *prejudice*, for not perfect esteem or knowledge of the "knowledge" that dwells in the metempirical sciences and theology is among them.

Therefore, while taking the text out of its context, but not depriving it of its potential wider and more topical meaning, I believe that even science or experimental sciences must flee the "temptation" (today it is much more than a temptation, being almost a *categorical imperative*) to foreclose access to the *sapiential* prospect that emanates from the *Wisdom* contained in the *Scriptures*, in order to grasp the salient aspects of *harmony* to them disclosed by good theology. The risk, which is not remote, is that of closing oneself off from the fundamental transcendent truths necessary to understand the *logos* that dwells in creation, offering men *partial visions* which, despite themselves, instead of contributing to the *harmonious innovation* of creation, end up by allowing it to be *misused* for lack of a global and integrally true vision of its essence and purpose.

Giving voice to the Scriptures will make it possible to go back to *harmony* in its meaning and in its *original* and *originating*, *founding* and *foundational* reality, offering a *sapiential* vision of it that can help the man of science to grasp the *ethical imperatives that* spring from the very being of creation and that demand to be respected so that we can speak of authentically *harmonious innovation.* In other words, thanks to *Wisdom,* the experimental sciences are signaled the *ethical* paths that will allow *innovation* to be *harmonious*. Our position, which we will attempt to demonstrate, is this: only *ethical innovation* is true *harmonic innovation*.

2. The problem of Harmonic Innovation: welcoming the *sapiential-ethical dimension* as an essential condition of its fulfillment.

In the light of the above, the first problem that arises in terms of *harmonic ethics* is the need for man to accept (we are in the field of duty and therefore of *ethics*) the light of *wisdom* in order to understand what *harmony* is and which is the way to contribute to its realization, to its pursuit.

If *divine wisdom* is given to enter into the knowledge of the secrets of creation and the man who is its recipient, any man, rejects it, the *presuppositions of* any human intervention aimed at bringing creation back to its original *harmony*, or rather, to those *stages of harmonious development* through which *creation* tends towards its *end,* are denied. It is as if one wanted to give life to a gigantic and innovative work of art and deliberately obscure the architect's *project* after having acquired all the raw materials necessary for its realization. In this sense my contribution becomes *appeal*.

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[6] JOHN CHRYSOSTOM, *Omelie sul vangelo di Matteo/1*, 62. [*Homilies on the Gospel of Matthew/1*, 62.]

In a world that champions "rights", of which today as never before it is necessary to verify the validity and correspondence[7], those who want to give life to projects of *harmonic innovation* cannot but recognize *the right* on creation that must be recognized to its Creator, Maker and supporter.

> "*For the Lord is great God, the great King above all gods. In his hand are the depths of the earth, and the mountain peaks belong to him. The sea is his, for he made it; and his hands formed the dry land*" (*Ps* 95 [94]:3-5).

The Creator of the visible and invisible universe is also the one who keeps his creation alive and governs its fortunes:

> "*Do not keep talking so proudly or let your mouth speak such arrogance, for the Lord is a God who knows, and by him deeds are weighed*. [...] *The Lord sends poverty and wealth; he humbles and he exalts. He raises the poor from the dust and lifts the needy from the ash heap; he seats them with princes and has them inherit a throne of honor. For the foundations of the earth are the Lord's; on them he has set the world. He will guard the feet of his faithful servants, but the wicked will be silenced in the place of darkness. It is not by strength that one prevails.* " (see *1 Sam* 2:1-10).

Now, if in order for there to be *harmony* it is necessary to begin by recognizing to the Maker of creation his *right of authorship*; immediately, in the second instance, it must be specified that man has been placed by God in the custody of creation as an *administrator* and therefore cannot change the *destination of use that* his Maker has given to it. But neither can he ignore it. Therefore, since the Scriptures are a *letter from God* to man, even to the man of knowledge, they cannot be ignored. All this makes man *vocated* to the custody of the *harmony* that is already in creation but in a *potential* and *dynamic* way. Creation has not been handed over to man in its *stage of* ultimate development. On the contrary, it has been entrusted to man so that he may bring it towards its fulfillment, and thus *innovate it* according to all its intrinsic potentialities, but never in contrast with the project and the destination that every single element of it has been given by its divine Maker.

In this regard, the hagiographer gives an example of how creation was *modulated*, *harmonized in* a different way under historical circumstances that required nature itself to "take the field" together with its Creator in favor of the Jewish people. The book of *Wisdom,* in fact, in its final part (cc. 10,1-19,22) proposes a rereading of some events in the history of Israel, beginning with the first accounts of creation handed down in *Genesis* and then dealing with the accounts of the liberation of the people of Israel from Egypt (see *Exodus* cc. 11-19). From the time of the Patriarchs the people were in Egypt and as the generations passed, their prosperity brought about a change in Pharaoh's attitude towards them. The sacred author, referring to events that precede him by about 1400 years (the book of *Wisdom* dates back to a period of time close to the coming of Christ, placed according to recent studies between 60 and 20 BC), rereads the interventions of God in favor of his people on the creation as a *remodulation* of the elements of creation: a

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[7] I have recently addressed this issue elsewhere and I would like to refer to what I wrote there: N. ROTUNDO, *Diritti umani e diritti dell'ambiente: diritti di paura o diritti di verità?* [*Human and environmental rights: rights of fear or rights of truth?*] in P. GIUSTINIANI AND L. PARENTE (eds.), *Diritti umani e diritti dell'ambiente. Verso nuovi confronti* [*Human and environmental rights. Towards new debates*], Mimesis, Milan-Udine 2020, 133-146. In addition to this contribution of mine to capture in the background the sensitive question of the foundation of rights: see V. POSSENTI, *Diritti umani. L'età delle pretese* [*Human rights. The age of claims*], Rubbettino, Soveria Mannelli 2017.

different agreement. We could speak of a *harmonic innovation* implemented by God on the elements of creation that is described in this way:

> *For the elements **changed places with one another**, as on a **harp** the notes vary the nature of the rhythm, while each note remains the same. This may be clearly inferred from the sight of what took place. For land animals were transformed into water creatures, and creatures that swim moved over to the land. Fire even in water retained its normal power, and water forgot its fire-quenching nature. Flames, on the contrary, failed to consume the flesh of perishable creatures that walked among them, nor did they melt the crystalline, quick-melting kind of heavenly food. For in everything, O Lord, you have exalted and glorified your people, and you have not neglected to help them at all times and in all places"* (*Wis.* 19:18-22).

In order for the people of Israel to be freed from the heavy slavery of Egypt, the Maker used creation in a *new way*, finding a different *harmony* for its elements, just as the player of a *harp,* using the same notes but varying "the nature of the rhythm", finds new *melodies* or *chords* to play for his hearers. "In the same way," evidently in analogical language, *creative Wisdom* came down to give creation a new form and creation readily obeyed by putting itself at the service of God's saving plans for his people. The elements remain the same but the *agreement* with which the *creative Wisdom harmonizes* them changes and they give life to new effects. History changes because *nature*, a powerful ally of its Creator, allows itself to be *harmonized* in a new way by its Maker.

This should be, among the many truths enshrined in the text, the constant work that a man, inspired, supported and guided by this same *Wisdom*, exercises on creation. *Harmonious innovation* is a *natural vocation* inherent in creation and also in man. Nevertheless, in man this vocation can only be accomplished through the supernatural help of the light of revelation and the regenerative action of grace[8], as we will see.

Today some people want to make us believe that the events narrated about the history of the Patriarchs and the slavery in Egypt, as they do not have numerous documentary evidence, and only one account in the biblical narrative, should be placed in the category of "myth". In reality, a history such as that of the people of Israel cannot be explained in any way by the sole power of *myth*. *Myth* has no history or is an idealization of history. A faith without history is not faith, in the biblical sense, but a very simple belief like many others that are present in the history of men and that do not change, if not for the worse, the history of men. These beliefs cannot withstand the violent impact of history with its vicissitudes and dramas, nor can they determine those historical turning points of liberation that are the creative interventions of this *creative*, *ordering* and *liberating Wisdom*. Above all, they do not have the strength to create those human *profiles* that stand out in the history of men, typical of the history of Israel and, in a substantially different and even more elevated way, typical of the history of the Church[9].

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[8] These aspects must refer to a recent study that delves into them in a timely manner: see R. CARRABETTA, *Istanze cristologiche della teoria della* lex naturae *di Tommaso d'Aquino* [*Christological instances of the theory of the lex naturae of Thomas Aquinas*] (PhD dissertation in Theology - Abstracts), Pontificia Facoltà Teologica dell'Italia Meridionale – Section St. Thomas Aquinas, Naples 2018, in part pp. 154ff.

[9] To give just a few examples, I am thinking of the reconstruction that Ben Sira, a wise man of Israel, makes of these "illustrious men" in the book of *Sirach* (see ch. 44-50); I am thinking of the work of Saint Jerome, which follows in the footsteps of this author (see JEROME, *Gli uomini illustri* [*Illustrious Men*] [Patristic library], edited by A. Ceresa Gastaldo, Dehoniane, Bologna 1988), as well as the great work of Saint Gregory the Great

The witnesses of this truth are the same "magicians of Egypt" - men of science and intellectual honesty - who, in front of the third plague with which the God of Israel was accrediting himself as the true Creator of creation to Pharaoh, who considered himself a god, affirm:

> *"Then the Lord said to Moses, "Tell Aaron, 'Stretch out your staff and strike the dust of the ground,' and throughout the land of Egypt the dust will become gnats." They did this, and when Aaron stretched out his hand with the staff and struck the dust of the ground, gnats came on people and animals. All the dust throughout the land of Egypt became gnats. But when the magicians tried to produce gnats by their secret arts, they could not. Since the gnats were on people and animals everywhere, the magicians said to Pharaoh, 'This is the finger of God!' But Pharaoh's heart was hard and he would not listen, just as the Lord had said"* (Ex 8:12-15)[10] .

If, on the one hand, *nature* allows itself to be *harmonized* in a new way, "allying" itself with its Creator, the Wise God, in order to serve the people He has chosen and through whom He has chosen to manifest Himself to the world, on the other hand, it does not obey the obstinate stupidity of Pharaoh who uses the human work of his magicians to try to confront the work of Moses and Aaron, through whom he acts with a very different force on creation[11]. This is not a fact of marginal importance: *nature does* not allow itself to be governed by those who are not *in harmony* with its Lord and Creator; and if certain "modifications" take place and their production is not *in harmony* with the purpose that *creative wisdom* has placed in the natural elements (a problem of *harmonic ethics*), it will not be of true *innovation* and therefore will not be of authentic benefit to man. Only *harmonic innovation* benefits man and only *ethical innovation* is *harmonic*.

It is no coincidence that the exit of the magicians will be evident at the sixth plague[12] and Pharaoh's defeat will be total, due to the obstinacy of his pride. Not only did he "*not listen to them*

(GREGORY THE GREAT, *Storie di santi e di diavoli* [*Saints and Sinners*], vols. 1-2 [Lorenzo Valla Foundation], edited by S. Pricoco and M. Simonetti, Mondadori, Milan 2005).

[10] In previous passages the sacred text had used other expressions for the previous *plagues*: *"Pharaoh then summoned wise men and sorcerers, and the Egyptian magicians also did the same things by their secret arts"* (*Ex* 7:11); *"But the Egyptian magicians did the same things by their secret arts"*" (*Ex* 7:22); "*But the Egyptian magicians did the same things by their secret arts; they also made frogs come up on the land of Egypt*"(*Ex* 8:3). See L. MAZZINGHI, *Notte di paura e di luce. Esegesi di Sap 17,1-18,4* [*Night of fear and light. Exegis of Sap 17,1-18,4*] (Analecta Biblica - *Investigationes scientificae in res biblicas*, 134), Pontificio Istituto Biblico, Rome 1995, in part. 98ss. ("The topic of the Egyptian magicians in the context of the Exodic account of the plagues appears for the first time in Ex 7:11; the "magicians" are summoned by Pharaoh together with the "wise men" and the "sorcerers". In this passage the text of *Ex* explicitly states that even magicians are able to produce phenomena similar to those performed by Moses and Aaron. In fact, they make use of their 'secret arts' (*lhtyhm*) that produce the same effect as Aaron's staff. The fact that Aaron's staff devours their staffs is a sign of their superiority over the magicians, who are nonetheless accorded a certain power. This element is very important in the context of the entire narrative of the plagues. The presence of the magicians, in fact, and the partial effectiveness of their action underline an event of great theological significance. The magical act may possibly be effective, but it is still limited; it will be necessary for the magicians themselves to recognize, as in Ex 8:14-15, the presence of the The Finger of God", *ibid*, p. 98-99).

[11] "The actions performed by him [Moses] go beyond their [the magicians'] magical art, for they are not human in nature but divine", L. MAZZINGHI, *Notte di paura e di luce. Esegesi di Sap 17,1-18,4*, p. 101 [*Night of fear and light. Exegis of Sap 17:1-18:4*, p. 101.]

[12] "Thus, beginning with Ex 7:11, the presence of the magicians in the account of the plagues follows a clear progression; in 7:22 and 8:3 they are successful in operating the first and second plagues, then fail in the third (8:14-15); disappearing in the next two plagues, they reappear at the sixth to emphasize their ultimate defeat (9:11)," *idem*, p. 99.

[the magicians]" (*Ex* 9:12), opening himself to the mystery of transcendence that was manifesting itself in history in favor of the people of Israel, but he was obstinate in wanting to "compete" with the Lord of creation, believing he could enslave creation to his pride, believing that what Moses was doing, with the "finger of God", was within his reach. The Lord operates the plagues so that Pharaoh is convinced that he is not God and does not govern anything in creation, but he also sends Moses to explain the reason of that story that Pharaoh stubbornly does not want to understand: "...*so that you may know that there is no one like me in all the earth*" (*Ex* 9:14). The epilogue of this story is dramatic. What is made possible for Israel by a nature that is not hostile to it, by divine command, will not be so for Pharaoh. He, his chariots and his army, stubbornly led to cross a sea that the Lord would not have made crossable for them, will end up buried in those waters. In fact, at the passage of the latter, nature will manifest its properties again: "*The water flowed back and covered the chariots and horsemen—the entire army of Pharaoh that had followed the Israelites into the sea. Not one of them survived.* (*Ex* 14,28; see also *Wis* 19,1ff.).

Another truth that the text wants to teach is the following: it is true *harmonic ethics to* respect the laws of *nature*, that is, those laws placed by the Creator in his own creation. They are not to be challenged. *Nature* will never obey the foolish, the proud and the ignorant. For *harmonic ethics* man will be wise and therefore true *innovator* if he will obey the *laws of nature* inscribed in creation by its Maker.
Even if, after knowing them, he intuits that they may be "governed", harmonized, in a new order, in a new harmony that accords the elements in a different way, he must always be guided by *wisdom*, never losing the *purpose* for which things were made. This will not be beneficial for man, even though the not good consequence of the human being acting on it may not immediately appear. *Innovating* can never coincide with *distorting* or, using legal language, changing the "intended use" of the created element. In this regard, precisely because of the *ethical disharmony* that reigns today, the examples of *disharmonious innovation* would be countless.
Without *wisdom*, the innovator will never be a *harmonious innovator*.

Harmonic ethics will have to "govern" every area and every dimension of *harmonic innovation*. But this requires *wisdom*, and *wisdom* has a very precise source. It is a true gift that descends from above:

> "The *source of wisdom is the word of God in the heavens, its ways are the eternal commandments.* Who was the root of wisdom revealed to? And who knows its fineness? *Who was what wisdom teaches manifested to? Who understands its great experience?* One alone is the wise and awe-inspiring, seated above his throne. The Lord himself created wisdom, he saw it and measured it, he poured it out on all his works, to every mortal he gave it generously, he lavished it on those who love him" (Sir 1:5-10).

Since everything in *creation has* been imbued with wisdom, in order for man to enter into *harmony* with the wisdom that is in things, the Maker of creation has to reveal to him his own wisdom. And the Lord is prepared to this gift. This is why it is true foolishness not to welcome it, not to seek it, not to respect it or, worse, to challenge it.

It is possible to disbelieve the *law of nature* by virtue of which a car, in order to correctly follow its circular motion in the setting of a curve, must constantly adapt its speed, applying a *proportionate force* to overcome the state of rectilinear motion to which a body in motion is subject; but if one were to believe that it was possible to disregard this *law* and enter a curve without respecting the

appropriate speed and not applying the *proportionate force* to counteract the rectilinear motion, the outcome could only be the exit from the road and the coming into force of another *law of nature:* circular motion will have to give way to rectilinear motion. When the *laws of circular motion* are not observed, the exit of the car in the tangential direction will infallibly occur due to the uncontested action of centrifugal force. Even if we create, thinking to innovate, cars able to sustain circular motion at high speed, it will not be possible to challenge the *laws of nature.* In the same way, it is possible to *innovate* by moving from stone to concrete in the construction of a bridge; but the duration of stone and concrete are not equal. It is not a coincidence that centuries-old stone bridges still exist and recently built concrete bridges collapse, not for lack of *innovation* but for *disharmonious innovation,* that is, for lack of *harmonious ethics*. The *law of nature* that wants concrete to be subject to a certain amount of *maintenance*. One may not observe it, thinking as modern pharaohs to govern history, but it will inexorably generate its results: the collapse of the bridge will occur. A problem of *harmonic ethics*.

Prudence, which is part of the *furniture* of *wisdom*, will be the only *ethical* path capable of always maintaining *harmony* even when *innovation* must be administered, managed, governed - over time - so that it does not backfire on man. This is why another *wise man,* Job, who did not belong to the people of Israel, asked himself: "*Is it possible that an enemy of right should govern?* " (*Job* 34:17). To paraphrase, we could say: *Is it possible that an enemy of right should innovate?*

Innovation itself will have to take place within the prospect of the *limit*[13]. When one want to make man believe that he is a "god", like the Pharaoh, therefore not subject to any law, nature and history will always "take the field" to remind man that this is not so. Nature will never ally itself with foolishness, but always and only with *wisdom*. Nature is ethical and therefore harmonious innovation of *true wisdom*.

3. The sensitive *anthropological issue* on the grounds of authentic *harmonic innovation*

At the end of the preceding biblical *excursus,* we hope we have showed how the real problem of *harmonic innovation* lies entirely in anthropology. As I wrote, the natural *vocation* of the elements of creation to *harmony* must find in the corresponding *natural vocation* of man to the *wise* use of creation the completion and the tool to reveal all the potential that the Maker of creation has placed in its elements. But here the issue becomes immediately *supernatural* for many reasons that I cannot go into here. I will discuss some of them.
I begin with an observation. All those who have come together in this editorial project of reflection depending on their scientific competences are moved - I allow myself an interpretation in a key of *theology of history* of the event itself of this publication - almost by a mysterious *synergy* that animates and unites them in the search for something that is deeply rooted in man in the form of a *secret yearning*. The very fact of having discussed and relating the two terms and the two corresponding realities of *innovation* and *harmony*, certifies that, in their viewpoint, a disruptive process of *disharmony* appears *evident* in contemporary history, therefore *underway*. While in creation and in the very heart of man there is a powerful *yearning for* order, peace and harmony, and it is this urge which, in a man of good will, does not allow him to resign himself to *disharmony*.

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[13] I have recently addressed this topic: see N. ROTUNDO, *Verso un'ecologia economica. Riflessioni a partire dalla* Laudato si', § 141 [*Towards an economic ecology. Thoughts on* Laudato si', § 141], N. ROTUNDO (ed.), *L'uomo al centro. Per un'ecologia integrata* [*Man at the center. For an integrated ecology*], Rubbettino, Soveria Mannelli 2021, pp. 9-38, in part. pp. 30ss.

Augustine of Hippo, in his *Confessions*, attested to having understood over time, along his troubled search for the Truth, the powerful *force* that drives man inward, making his heart *restless,* until he reaches the goal of his desire: "*fecisti nos ad te et inquietum est cor nostrum donec requiescat in te*"[14]. Therefore, as we have seen, man is *called to* harmony, which he lost with sin, but on his own, without supernatural help, he cannot find his personal harmony and consequently he cannot *recognize* and *respect* the harmony that is in creation and in things. Man's nature is a wounded nature that needs to be *re-harmonized*, *re-tuned* and this project is fulfilled in Christ[15]. When man's *restlessness,* which is this *natural*[16] and *irrepressible* aspiration to *quiet*, to *peace*, to *harmonious order* and to recompose himself in God, is not supported in the last instance, the *restlessness* becomes a torment for man.

The delicate anthropological balance is the highest risk factor determining *disharmony* in creation. Man is already in itself a special creature in the visible creation, in a constant search for harmony and therefore in a constant becoming and in a constant need that the help of wisdom and grace - which by a non-predetermined will he can close himself in - support him so that he does not lose the goal of his pilgrimage. If he loses this goal, then he misses the *harmonious use of* creation.

This is how Augustine expresses this truth in his *De Civitate Dei*:

> *"God, then, the infinitely wise Creator and infinitely just Orderer of all beings, who has constituted mankind in the becoming as the greatest of earthly values, has granted mankind certain goods appropriate to this life, that is, peace in time in accordance with life in the becoming through the health, survival and solidarity of its species and all the means that are indispensable to defend and regain this peace. For example, these are those objects that are adequately and conveniently available to the senses: light, sound, air to breathe, water to drink and everything that is suitable for nourishing, covering, caring for and beautifying the body. And this in the very reasonable understanding that whoever has used these goods correctly in the becoming, proportionate to the peace of beings placed in the becoming, will obtain other considerably more important goods, that is, peace outside of the becoming and the glory and honor corresponding to it in eternal life in order to be happy with God and one's neighbor in God; whoever, on the other hand, will have used them wrongly* [qui autem perperam] will *not obtain those goods and will lose them*"[17].

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[14] "You have made us for yourself, [O' Lord], and our heart is restless until it rests in you," AUGUSTINE, *Confessions*, 1, 1, 1, in *Opere di Sant'Agostino. Le Confessioni* [*Works of Saint Agusutin. Confessions,*] Città Nuova, Rome 1975[3], p. 5.

[15] See C. DI BRUNO, *Legge e natura: armonia o contrasto?* [*Law and nature: harmony or conflict?*] in F. BRANCACCIO - D. CONCOLINO (edited by.), *La persona crocevia dei saperi* [*The person as meeting point of knowledge*], Tau, Todi 2012, 195-218; and I would like to refer again to some aspects already dealt with previously: N. ROTUNDO, *Il lavoro nella dottrina sociale: cristificare il cristiano per rendere efficiente il lavoro e l'economia* [*Work in social doctrine: Christify the Christian to make work and economy efficient*] in F. DEL PIZZO - A. GARGIULO (edited by.), *Teologia, economia e lavoro. Per un umanesimo della fraternità* [*Theology, economy and work. For a Humanism of Fraternity*], Il pozzo di Giacobbe, Trapani 2020, pp. 113-134, in part. pp. 123ss.

[16] "Anyone who in any way considers human facts and common natural feeling [*naturamque communem intuetur*] admits with me this truth; for just as there is no one who does not want to enjoy, so there is no one who does not want to have peace [...*sicut enim nemo est qui gaudere nolit, ita nemo est qui pacem habere nolit*]", AUGUSTINE, *The City of God*, 19, 12.1, in *Opere di Sant'Agostino. La città di Dio*/III [*Works of Saint Augustine. The City of God /III*], p. 45.

[17] AGOSTINO, *La Città di Dio*, XIX, 13.2, in *Opere di Sant'Agostino. La città di Dio*/III
[AUGUSTINE, *The City of God*, XIX, 13.2, in *Saint Augustine. Works. The City of God /III*], p. 53.

The *right use* (harmonic ethics) of creation is for man himself a source of peace and harmony, as well as an aid given to *creation* so that it enters the fullness of its development. This *use* will allow man to achieve his eternal peace or eternal harmony in the *Heavenly City*, which is the true purpose of the *right use* of goods subject to becoming. Following Augustine's suggestions, the perspective of *harmonic innovation* is linked in a radically ontological way, I dare say, to the supernatural vocation and the *eternal end* that awaits man in Christ.

All of *creation* that surrounds man - even if *in a state of becoming* - if *used correctly* (harmonic ethics), will allow him to enter into the mystery of the fullness of his *being*, of his *harmony,* which is called to be fulfilled in a transcendent dimension but is staggeringly linked to the historical and time dimension of his existence. The pursuit of man's *ultimate goal* (to dwell in God, in the heavenly Jerusalem) is subject to the influence of a number of *intermediate goals,* all of which are linked to the *harmonious* or *right use* of created goods and therefore linked to time and to all that man is called to live in it.
This is the reason why - I would like to reiterate once again - *experimental knowledge* will not be sufficient for man to be the main character of *harmonious innovation*. The latter is essentially linked to the project of God the Creator on man and creation. Furthermore, *harmonic innovation* is linked to the ultimate and transcendent *goal* to which man is destined in Christ Jesus. In this prospect, *harmonic ethics* necessary for the right use of creation becomes essential to achieve that *innovation* which will allow man to fulfill those instrumental designs that God has on creation itself. In this sense, from our standpoint, the sentence contained in the book of *Revelation* ("*And He who was seated on the throne said, 'I am making everything new!*", *Rev* 21:5), instead of being understood in an exclusive eschatological capacity, must be persistently reported in a purely temporal and creationist prospect.

Christ in his *absolute Lordship* over creation and history came and is coming to make man new first of all and also to make creation new, through the *new man*. This mystery is accomplished, evidently, through the will of man, as Augustine recalls: "*He who created you without you will not justify you without you*"[18].

Therefore, man necessarily needs this *sapiential knowledge* of himself and of creation, and he also needs the help of grace that comes from Christ[19], through the mediation of the Church, so that he can know and fulfill his mystery and the mystery still enclosed in creation. The *right use* (harmonic ethics) and *harmonic innovation* accordingly, depend on these aids, both necessary to him for the achievement of his *ultimate goal of* bliss in the heavenly Jerusalem.

It is well understood that the *harmonic innovation* to which man is *necessarily called* (harmonic ethics), in the light of the path taken, ceases to be a *natural fact sic et simpliciter* linked to experimental knowledge.

Even before Augustine, Irenaeus of Lyon (Father of the Church of the 2nd century), admonished the Gnostics to welcome in the creation the mystery of *harmony* sown in it by the Creator and exceeding the possibilities of human reason; for this reason, he invited men in general and the Gnostic heretics in particular to clothe themselves with humility to pursue the search of the truth

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[18] *Discorso*, 169.11.13.

[19] See R. CARRABETTA, *Istanze cristologiche della teoria della* lex naturae *di Tommaso d'Aquino* [*Christological instances of the theory of the lex naturae of Thomas Aquinas*], pp. 157ss.

at every level[20]. If *human restlessness* does not meet *creative wisdom*, that is when the mind oversteps its boundaries, imagining what is not and giving to this anxiety of fulfillment concerning both the person and the creation, solutions that introduce oneself and the creation itself in processes of serious and sometimes irremediable *disharmony*. After all, it would not be possible otherwise if one gives credence to the statement in the book of *Wisdom* which states:

> "*May God grant me to speak with judgment, and to have thoughts worthy of what I have received, for he is the guide even of wisdom and the corrector of the wise. For both we and our words are in his hand, as are all understanding and skill in crafts. For it is he who gave me unerring knowledge of what exists, to know the structure of the world and the activity of the elements, the beginning and end and middle of times, the alternations of the solstices and the changes of the seasons, the cycles of the year and the constellations of the stars, the natures of animals and the tempers of wild animals, the powers of spirits and the thoughts of human beings, the varieties of plants and the virtues of roots. I learned both what is secret and what is manifest, for wisdom, the fashioner of all things, taught me.* (*Wis* 7:15-21).

These assumptions are the basis through which the sacred Author can say: "). *Indeed, even if somebody might be thought of as perfect, this person is nothing without your wisdom*." (*Wis* 9:6). Outside the reception of *wisdom,* man acts "against nature," precludes himself from the source of true knowledge, and cannot lead creation toward *harmonious development* or *innovation*, because he does not know the *purpose* for which things were made and does not participate in that *wisdom* which is "the worker of all things [*omnium artifex*]" (*Wis* 7:21).

The Gnostics *against whom* Irenaeus writes, since they are mistaken in their understanding of the *Scriptures,* are also mistaken in their understanding of creation, and they overflow into an imagination that puts them in *disharmony* with themselves, with creation, with the Church, and with the triune God. Yet they boast that they have knowledge that makes them perfect.

Today, this risk seems to affect man in a very widespread way. Even to our days, this "*Gnostic imagination*" is the real cause of the *disharmony* in the world. This *presumed knowledge* - the human mind that wants to *give* consistency to things in a *creative* impetus that is *in opposition* to *creative Wisdom* - boasted and almost ostentatiously flaunted is, as I wrote, the *first* and most profound *problem* of *harmonic ethics* that man is faced with and that should be addressed. By not solving it, man precludes himself from true *harmonic innovation* because he has not entered into harmony with the source of *wisdom* from which all creation has not only received an embryonic shape, but also needs to receive a comprehensive series of *intermediate shapes* while waiting for creation itself and man to achieve their *ultimate shape*[21].

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[20] See IRENAEUS OF LYON, *Adversus Haereses* [*Against Heresies*], II, §§ 25,1-28,9 (320), Jaca Book, Milan 2003, pp. 183-192.

[21] Augustine describes this *ultimate end* or *shape* as the *peace* or *supreme good* that man will enjoy only in the heavenly City, see AUGUSTINE, *The City of God*, 9, 10-11, in *Opere di Sant'Agostino. La città di Dio*/III [*St. Augustine. Works. The City of God/III*], pp. 41-45.

For this reason, the *Gnostic imagination* is the exact opposite of the *spiritual intelligence* or of the *sapiential knowledge* mentioned at the beginning, which can be proper only to those who humbly allow themselves to be enlightened on the mystery of creation by the One who was its Maker. The alternative will be that, instead of grasping the truth that is in things themselves and in the *wisdom* that made them, of *wanting to give* things meanings and purposes that they do not have. It is at this point that *crises* begin at every level: economic, urban, ecological, juridical, social and cultural.

I use the words of Chrysostom once again to give an idea of the damage that not recognizing *Wisdom*, that is to say, God, the Maker of creation, has the right to enlighten man so that he may enter into the authentic knowledge of his mystery and of the mystery that dwells in creation, can cause:

> "*Paul said, "Evil communications corrupt good manners". For this cause we have need continually of those songs, which serve as charms from the Spirit. Yes, for this it is whereby we excel the irrational creatures, since with respect to all other things, we are even exceedingly inferior to them. This is a soul's food, this its ornament, this its security; even as not to hear is famine and wasting. […] From words come ruin and salvation: for one word provokes anger, another calms it; an unseemly word inflames desire, while a speech full of decorum leads to temperance. If, tell me, words have such great power, why do you despise the Scriptures? If an exhortation has so great a force, this occurs many more when the exhortations are accompanied by the Spirit. For the word that resounds from the divine Scriptures softens the hardened soul more than fire and makes it fit for every good work.* […] *Let us thus form servants, children, wives, and friends, and make friends of enemies; thus great men became better, and friends of God.* […] *Let us therefore not despise the reading of the divine Scriptures. This is proper to a diabolical mind that does not let us see the treasure so that we do not acquire its riches. Therefore he says that the reading of the divine laws is worth nothing, so as not to see the realization of the works that for us springs from listening*"[22] .

This is the "focus" of my contribution. And I believe the issue deserves further attention and considerable in-depth study. The work that would result from listening to this *treasure of wisdom* contained in the Scriptures, along with the treasures of grace that dwell in the heart of the Church[23], would open up to artists, craftsmen, thinkers, engineers, architects, urban planners, sculptors, scientists, jurists, and lovers of every science and art in general, not only a *harmonious* use of creation but also its correct development under the banner of a *wise innovation*.

Chrysostom's exhortation would be pertinent in its actuality: *Let us form* our scientists in *this way and make our enemies friends of* wisdom*; thus great men became better, and friends of God.* Only the *wise man* - of revealed wisdom - can be a *harmonious innovator*, because he will be an *ethical innovator*.

4. Conclusions

The search for a *harmonic innovation* "betrays", in a way that is perhaps not entirely conscious, that *natural vocation* to *harmony*, which lies in the very depth of man's being and of creation itself, to which, however, man cannot correspond without *supernatural* help. The task of this

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[22] JOHN CHRYSOSTOM, *Omelie sul vangelo di Matteo/1* [*Homilies on the Gospel of Matthew/1*], p. 64.

[23] See IRENAEUS OF LYON, *Adversus Haereses* [*Against Heresies*], III, §§ 24,1, pp. 183-192.

contribution of mine has been to indicate, to suggest, the *supernatural* way of *wisdom* and *ethics*, clearly related to Christ and the Holy Spirit, who together with the Father are the tangible "face" of this *way*, as the only possible solution for a *harmonic innovation. Theology* has this task. And here it stops. If these pages have succeeded at least to a minor extent to give a glimpse of the problem that the texts have helped us to raise, it will be the up to the reader's goodness to evaluate it, but this was our intent.

Harmonious Future.
Assumptions on the correlation between cooperation and coevolution.

by *Luca De Biase*

1. Abstract

It is a difficult task to talk about harmony in a restless and complex world. All the more so when the topic is declined into the future. In this paper, the topic is addressed in the context of a pluralistic historical time that opens up to a future of alternative possibilities and a pluralistic media space that in turn serves the choice between conscious harmonic chorality or emerging in complexity. There is a set of macro-constraints that implicitly direct choice. There is an awareness of companies and organizations attempting to direct innovation in a way that takes constraints into account. There is a shared agenda narrative that can serve to bring some sort of harmonization to bear. But in the exploration of the possible, strains and conflicts are created, to some extent alternative to harmony. The question is whether conflict or harmony tunes in over the long haul. One can imagine that the logics of history and cogent constraints may eventually reduce the possible alternatives. But innovation will not cease to reopen more of them. Therefore, in the end, harmony lasting longer than conflict, sustainable innovation, will not be a historical dynamic written only in the constraints but a choice deriving not so much from a central vision but from a correlation between pluralistic dynamics that will be cooperative and co-evolutive. This could be the path to strengthen the harmonic assumption. At the bottom of the correlation between conscious cooperation and historically determined coevolution is an organization of the eco-cultural niche, in which all of this takes place, that encourages the practice of sharing an agenda over the desire to oppose interests. So coevolution becomes the new system of knowledge management which, unlike the market, is not called to get to the best allocation of resources, but to implement the most appropriate solutions for the long-term survival of the community.

2. Problems

The juxtaposition of two highly problematic concepts such as "future" and "harmony" imposes a linguistic premise. This work starts from the observation that there are no stable definitions of these historically dynamic concepts. In this work, therefore, we choose to use an open and pragmatic definitional system, with the goal - not necessarily intended to succeed - that the reasoning developed in these pages can withstand the change of context that this text will inevitably welcome.

The future is the time of what can happen but obviously has not happened. Harmony is a kind of cooperation between a plurality of voices, in a certain media space. Putting these components together implies working at the same time on history, in the plurality of its dimensions, and on media ecology, in the complexity of its strains. The central problem is that the future is certainly a set of possibilities, but it will be the result of choices made in the present among alternative possibilities. Equally ambiguously, harmony could be imagined in relation to two very different perspectives: as the result of conscious present discernment, that is, the exercise of freedom that

results in decisions and reduces alternatives; or as adaptation to the change that has occurred. Arguably, these ambiguities dissolve in history rather than in theory.

But we can certainly ask ourselves if, after a more significant historical analysis than the one that we can attempt in these pages, we can arrive at identifying regularities that serve to understand what are the favorable preconditions for the design of a harmonious perspective for the future. A lasting, sustainable perspective. Can we assume that an actual infrastructure is favorable to harmony if it is open to a wide range of possibilities and an actual culture is oriented to harmony if it is able to discern the consequences of choices?

We could try a sort of preventive theorization, almost an action plan, and then verify its realism in the field. Or we could try to observe what is happening and make it the reason for a subsequent theorization. Arguably, in order to maintain a pragmatic approach to the subject, reducing as much as possible the burden of prejudices, it is more fruitful to choose the second path.

3. The consequences of the present

Any approach to the future can only start from the consideration that what will happen is a consequence of what is happening. And what happens is partly a continuation of what has happened, and partly the choice of those who operate in the present. Choices are made within grand narratives that somehow link actions to consequences. Successful grand narratives make it easier for what they predict to come true: because if people believe them to be true and behave accordingly, they can make it more likely that events will unfold as they are narrated. Nothing is certain in any of this, of course. But only probable.

Well. The signs are that the fundamental narrative in which businesses operate is changing. It is entering a new paradigm. The previous one had been formed on the basis of a series of major ideological and, in part, analytical operations. At the height of the welfare era, on September 13, 1970, Milton Friedman published an article in the New York Times that was destined to enjoy a reputation that exceeded the number of its readers, thanks to a powerful title: "The social responsibility of companies is to increase profits"[24]. Friedman criticized the hypocrisy of corporations trying to present themselves as socially useful and suggested that if they had concentrated on doing their job well it would have been better for everyone. The underlying idea was simple: the market, the greatest information system at the service of economic decisions, the best machine of resource allocation, would have created the most advantageous conditions for the social system as a whole if operators had acted rationally to maximize their own advantage. That was not a new idea. But it came at a moment in history when the comparison with Soviet communism and European social democracy apparently led to the efficiency of the market taking second place to state intervention. As we know, since then things have slowly but surely gone to the opposite extreme and between 1979 and 1980, with Margaret Thatcher in the UK and Ronald Reagan in the US, a process of liberalization, privatization, de-structuring of intermediate bodies, financialization would be triggered, leading to a policy aimed at replacing the state with the market in every possible space, freeing the insatiable power of capitalism. This last side effect was quite covered by the ideology - disguised with analysis - of the market. And it was probably the real goal of those who supported neoliberalism. The power of this ideology took over majority shares of Western democracies, convincing in some cases even parties of social democratic origin.

[24] https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html

But five global financial crises later, forty years later, it would seem that the cycle of neo-liberal single thinking has come to an end.

Although it is not yet prevalent, the turning point of the current era has rather obvious macro and micro features.

From the macro point of view, it seems to be time for the recovery of another great essay of the early seventies, "The Limits of Development" (*I limiti dello sviluppo*), produced by the Club of Rome and MIT[25] . Almost buried by the inexorable success of financial capitalism and related consumerism, the scientifically based ecological thinking seems to have found its own era, in the context of the planet concerned about climate change, sustainability, social polarization. Financial technocracy has given way to a majority scientifically ecological sensibility in the continent that has contributed more than any other to the destruction of the ecological balance: Europe has followed the Green New Deal narrative and is following it with remarkable persistence. Ecological sensitivity has regained the United States thanks to the return of a civilized political class at the helm: the new president, Joe Biden, has entrusted his best partner, John Kerry, with the climate issue. The constraints of climate balance also seem to be understood by China and even India. Among the large countries, Brazil and Russia seem reluctant to decisively embrace the new course. From the point of view of macro-decisions, this change of perspective is of paramount importance. After all, the UN's 2030 Agenda has succeeded in winning over the political debate in many countries, even if it has not yet become the decision-making roadmap needed to enable the effective achievement of its goals. However, even in the club of the world's powerful, the World Economic Forum in Davos, the mantra has been renewed. No longer the capitalism of the stockholders, Friedman's shareholders, but the capitalism of the stakeholders, i.e. of all those with an interest in the consequences of the actions of companies, including citizens who can legitimately demand that companies stop destroying the planet and start making serious efforts to cure it[26].

There is no shortage of signs that businesses are going this way, at least on the surface. Or rather, the likelihood that companies will take a direction that is more attentive to the surrounding environment, to the quality of their social relations, and to the depth of their cultural experiences, is greatly increasing. Greenwashing itself, the hypocritical practice of pretending to be environmentalists in communication, in order to clean up one's image, without changing the substance of production practices, while being useless from a substantial point of view, proves how much the culture of respect for the ecosystem is now in the majority and influential.

On the micro side, if you can call it that, a major turning point was seen with the change of course at Blackrock. This is a financial firm that manages $6.5 trillion in investments, an unimaginable amount of money that, precisely, makes the idea of microeconomics quite ridiculous. Its billionaire CEO, Laurence D. Fink, has given the company a firm turn toward sustainability, making it a condition that companies receiving funding from Blackrock must meet. The analytical idea is that, in the long run, companies that commit to the path of sustainability are more profitable than others. So there is a need to move away from the destructive obsession with efficiency on a quarterly prospect and move to a deep vision for an enduring prospect of prosperity. But, beyond this analytical consideration, the motivation for this choice is also clearly oriented towards disconnecting the image of finance from the suffering inflicted on societies halfway around the

[25] https://www.clubofrome.org/publication/the-limits-to-growth/

[26] https://www.weforum.org/press/2020/01/stakeholder-capitalism-a-manifesto-for-a-cohesive-and-sustainable-world/

world by recurring speculative crises due to the short-sighted logic of finance stuck on "short termism". The 2007-2008 crisis, in particular, marked the lasting end of the credibility of unscrupulous investment banks that had even achieved a certain popularity in the early years of the new millennium thanks to their apparent ability to generate economic activity by lowering the risk of debt. Appearances, however, were deceptive: and by now almost everyone knows it. So it was definitely better for Blackrock to change course[27].

According to the mega consulting firm McKinsey, the best companies now give themselves a socially felt purpose and are consequential in their choices to try to pursue it[28]. In the cases studied by McKinsey, the first supporters of this conscious attitude of companies are precisely their employees, who declare themselves in favor of a reduction in corporate profit if this serves to improve the social sense of the corporate project. Meanwhile, in leading companies, corporate risk management is being streamlined with a shift to a longer-term view, and attention to the interest of the industrial ecosystem is becoming an integral part of the strategies of leading companies. Clearly, to ensure maximum profit for shareholders to "create value" is no longer enough[29].

The examples to provide evidence to this observation would really be too many to attempt to cite them here in full. Not least because the forms in which they are pursued are not always conscious. Many companies are learning to be civically minded citizens. But some solutions are beginning to emerge. For example, connecting corporate strategies to the vision of agencies that deal with the problems of the planet in a professional manner. Hyundai, for example, has connected its social strategy to the expertise of the United Nations Development Programme (UNDP)[30]. Hyundai and UNDP have decided to collaborate to spread awareness of the 2030 Agenda and the actions needed to achieve its goals. The co-operation program is called "For Tomorrow" [31]. The idea is to identify innovative initiatives that people around the world invent in order to move towards sustainability and operationally connect them to United Nations Development Programme Accelerator Labs, institutions and companies, to grow and spread them in other territories.

Another chain of solutions is found in the acceptance by corporate leadership of externally designed guidelines, designed to steer the underlying strategies of companies in the direction of some form of social awareness. This is a bit like what has been done for some time on the issue of industrial quality certification, but this time in relation to the social quality of the company. Danone, for example, has chosen to be a certified B Corp by 2025. This decision was taken throughout its long growing awareness on the social and environmental impact of the production choices of large food companies. "The food industry system is wrong," says bluntly Emmanuel Faber, CEO of Danone[32], who has been launching a program called One Planet One Health since 2017. "For the last fifty years, the food industry has worked to lower the cost of calories produced and sold to consumers. We have been successful in this endeavor. But a side effect of this strategy is the rise of obesity, diabetes, and monocultures that destroy the health of the earth." As

[27] https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter

[28] https://www.mckinsey.com/featured-insights/coronavirus-leading-through-the-crisis/charting-the-path-to-the-next-normal/be-bold-heres-how-30-top-us-companies-are-prepping-for-the-future

[29] https://www.mckinsey.com/business-functions/organization/our-insights/organizing-for-the-future-nine-keys-to-becoming-a-future-ready-company

[30] https://www.undp.org/content/undp/en/home/news-centre/news/2020/Hyundai_and_UNDP_launch_for_Tomorrow_global_project_grassroots_sustainable_solutions.html

[31] https://fortomorrow.org

[32] https://www.mckinsey.com/business-functions/sustainability/our-insights/the-challenge-of-climate-change

McKinsey reports, Danone has set challenging goals to move toward sustainability and simultaneously combat obesity and food waste while keeping the environmental impact of its production in check. In February 2020, it launched a three-year plan to accelerate innovation in relation to the climate effects of its operations worth $2.3 billion, aimed at radically changing technologies in agriculture, energy, logistics, and packaging to generate a sustainable growth path. For example, investments in innovation will have to go as far as reducing plastic use by half by its brands operating in the bottled water market and achieving carbon neutrality by 2025. "For us, the climate effect of what we do is not an externality," Faber says. "It's part of the resilience of our business, so we deal with it not out of philanthropy but since it's a smart way to do business."

The awareness that is taking place in certain companies, however, is also the result of general data. For example, on climate. The largest store on the planet, Walmart, has actually found in the data the impetus to start with a major innovation program for sustainability. And it has asked its 60,000 suppliers for help. The consequences can be huge. Kathleen McLaughlin, Walmart's chief sustainability officer, defines her business in terms of climate, nature, waste and people goals. And she thinks the pandemic has generated enormous difficulties but has also contributed to an understanding of how collective action can be powerful in addressing them. "What we've learned over the years and verified during the pandemic," McLaughlin says, "is that there is no trade-off between economic prosperity, social justice, environmental sustainability. All of these goals and the dynamics that pursue them work together. And individual actions, even the smallest ones, can have a significant impact." Walmart's goals are to achieve zero emissions by 2040 and to use 100 percent energy from renewables by 2035. Currently, renewables generate 30 percent of the energy used by Walmart. In addition, the company wants to reduce greenhouse gas emissions from its supply chain by one gigaton (one billion tons) by 2030. That's equal to eliminating the greenhouse gases of 211 million cars for one year, according to Environmental Protection Agency (EPA) calculations. So far, more than 2,300 of Walmart's suppliers have joined it and achieved savings of 230 million tons of emissions through actions related to energy, packaging, agriculture, forests, and waste. In this case, therefore, the action of a company has succeeded in initiating a positive process throughout a chain of production and distribution[33].

The positive cases are countless. A large survey of the relationship between announcements and results would certainly be an excellent study. But the reduction of emissions from the automotive industry, the increasing quality of food production and agriculture, the incentives for energy conversion and redevelopment of the building stock, together with a number of other indicators, are facts that together can give a sign of the importance of the actions that companies have individually taken towards sustainability.

Of course, there are also several greenwashing strategies and as many actions of resistance against innovation oriented to the environmental, social and cultural quality of economic activity. From this point of view, there are not at all a few polluting companies that back decidedly conservative positions, expressed for example in the administration that the United States chose between 2016 and 2020 and which, for four long years, led the American industrial power to betray the commitments made with the rest of the planet in Paris to reduce the greenhouse effect and climate change. In short, not all companies have decided to join the new paradigm of innovation headed towards quality and sustainability. On the contrary, it can be said that some of

[33] https://www.mckinsey.com/business-functions/sustainability/our-insights/the-challenge-of-climate-change

them would prefer an authoritarian system that would keep innovative impulses under control, rather than commit themselves to changing their production system.

These alternative strategies can also be useful to ask a pivotal question: do the "harmonizing" choices of companies that take the path of sustainable development do so because they accept an indication that comes from the market, or do they make use of another information system? The general idea that the market is the best possible information system because it generates the best possible allocation of resources does not seem to be adaptable to companies' decisions towards sustainability. The demand for sustainable companies may be present in society but the supply is not particularly homogeneous: corporate strategies with respect to this are very different. What do companies that choose sustainability seriously and not just for greenwashing look at? They simply respond to the social demand for companies with sustainability messages, because in the short term this is enough to meet the market requests. But what do companies that really pursue sustainability respond to, given that the market in the short term is satisfied with the message? Those companies are likely to look to the actions of other companies and the scientific considerations that dictate that attention must be paid to sustainability or else there will be a general disaster: basically, they place the emphasis on the long term rather than the short term and are informed by the network of companies rather than the dynamics of supply and demand. These choices are less the result of the market and more the result of co-evolutionary dynamics between companies that are following the path of sustainability and their complex cultural, economic and social contexts.

The dynamics that drives the entire system toward sustainability is itself complex. There are elements of emulation, incentive, convenience, ethical responsibility and much more. In any case, the macro change must be strong in order to drag as many companies as possible into the paradigm shift. When the network of "smart" companies, from this point of view, will be big enough, when supply chain leaderships will have enough decision, when regulatory constraints and incentives will be binding enough and international agreements strong enough, then the new paradigm will have a chance to have an impact on the great challenges of the contemporary world, through the sum of all the co-evolving micro-actions.

But this means that the road to harmonic innovation and the narrative of the harmonic future should not be portrayed as conflict-free paths, balanced in all their stages of development, oriented to happiness for all and understandable by everyone. On the contrary.

Indeed, in order to harmonize, one cannot and should not deny the difference in positions, interests and the same capacities to understand. Rather, we need to admit differences with a conceptual innovation that must start with the inclusion of different points of view, the acceptance of complexity, the criticism of overly closed schemas, the recognition of emerging patterns of behavior and their comparison with expected outcomes, based on the underlying assumption that common priorities can be developed for a sufficiently high proportion of participants to push even the most reluctant toward the best choices for the whole. A set of policy standards of global impact without central planning may be possible. But with the understanding that no one owns the right viewpoint, how can we reach an agreement that is not fragile but resilient against the difficulties? An agreement that is respectful of everyone's sovereignty and does not result in the imposition of someone's ideas on others'? An agreement that is not global and total, but pragmatic and suitable to work at least in its parts? In order to get to the point of describing a geopolitics of such scope, totally post-colonial, constructive for the planetary

common good, understandable to all, a first step is to innovate the idea of the future. No longer as a unitary narration, but as an inclusive metanarrative of as many stories and as many realities as there are points of view that should converge in practice. In short, we need to discuss a plurality of futures and a multiplicity of harmonies.

4. The plurality of futures

When you imagine that time is the succession of past, present, and future you make a fundamental choice. The use of the singular means that one thinks that there is only one timeline. One thinks that the past is what happened before the present and that the future is what will happen after. It is thought that just as there was only one past, there will only be one future. Which means that, by studying enough, the past can be reconstructed and the future can be predicted. In all of this, the present remains quite compressed because, of the three, it is the shortest period of time: so we end up underestimating its extraordinary power. It is in the present that humans discern between past events to be remembered and those to be forgotten: it is in the present that they determine which documents are crucial to the historical narrative and which can be left out. On the other hand, it is only in the present that people make decisions and act. Of course, they do so according to what they have learned from the past and what they imagine the future to be[34]. But it is in the present that they exercise what little freedom their consciousness is able to extract. Whether it matters a little or a lot, the variability of the choices made by humans in the present among the alternatives they can imagine, can generate a very important effect: each choice among possible alternatives multiplies, usually by a little, sometimes by a lot, the trajectories of the course of history. If we accept this assumption, then the future does not exist: there are different futures that are the consequence of the different choices of humans.

The issue can be explored further though. Because it is necessary to try to approach the topic of freedom of choice in a proportionate manner. The past itself is far from being able to be identified as a simple time that has unfolded linearly over the centuries and that has simply become fixed in immobility. On closer inspection, it can be said that certain aspects of the past are indeed dead and buried, while others are not immovable, because they actually endure in the present and project into the future. It is precisely the most influential historians of the twentieth century who have highlighted this way of reasoning.

The plurality of durations of social time is one of Fernand Braudel's contributions to innovation in the study of history[35] . In a context in which history consisted essentially of the linear recounting of facts considered important to political events, his masters, Lucien Febvre and Marc Bloch, the founders of the Annales school, had opened up the discipline of history to subjects that had previously been completely forgotten, such as food, mentalities, the media, and so on. The enlargement of the boundaries to a "total history" was accompanied by the idea of a "problem history" that did not limit itself to describing phenomena but posed questions, bringing history close to the sciences (the human sciences firstly and foremost but not only), also with the help of a constant epistemological reflection. And all this transformed history: it had been a discipline devoted mainly to politics and wars, but now it became a science interested in studying the complexity of human experience.

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[34] "Memory helps project the situation into the imagined future and les us envision the consequences". Antonio Damasio, *The strange order of things. Life, feeling, and the making of cultures*, 2018, New York, Vintage Books, p. 11.

[35] Fernand Braudel, *The Mediterranean and the Mediterranean World at the Time of Philip II*, 1949, Paris, Librairie Armand Colin

But if history is not a succession of events, what is it? The idea of the plurality of the durations of social time, implicit in the structure of the great work carried out by Fernand Braudel for the study of the Mediterranean, is a contribution to historical methodology of enormous consequences. It makes it possible to deal with complexity in a non-trivializing way and to classify topics so as to put phenomena in order of importance. There are therefore structures, repetitive thousand-year-old phenomena connected to the rhythm of geography: their importance is immense. There are conjunctures, fashions, cycles, secular or infra-secular, even decades or shorter: frameworks that drive the interpretation of historical periods. And then, of course, there are the events, which illuminate everything, but just for a moment.

In every moment, in every era, in every conjuncture, human phenomena of long duration occur, such as to overcome any periodization and connect the contexts in which the past has taken place and probably the future will develop. Major changes that modify something structural are rare. All of these change the relationship between the past, the present, and the future.

In the complexity of human experience studied by the modified history of the Annales school, the classification of the different durations of social time has created a narrative context capable of founding a new "narrative methodology," one that is broader in scope, perhaps more sincere, and certainly liberating. Sincere because, as Braudel explained, "the present explains the past" at least as much as "the past explains the present": which means that the objectivity of the past is anything but obvious, given that the problems of the present direct research and modify its results. And liberating because it allows the results of fundamental sciences such as demography and geography, anthropology and psychology, sociology and economics to be admitted to the debate developed by the historical discipline; and it can contribute with a critical spirit and documentary competence to the theories of the human sciences with which it comes into contact.

Perhaps this is not the case to provide an exemplification of all this. What is certain is that every interdisciplinary collaboration proves to be generative. And Braudel-like history - or Febvre, or Bloch - was interdisciplinary by definition. The collaboration of history with economics, for example, bore important fruit. The research of economic history started from the great archives that collect the documents of the merchant of Prato, Francesco Datini, noting that the merchant at the beginning of his balance sheets wrote "in the name of God and gain": one could be tempted to note above all the novelty of that phrase, ending up by underlining the second part; but the historians of the Annales, instead, wanted to understand the sense of the whole phrase, that is, the relationship between what continued, religion, and what was born, modern economy. It was precisely this open and interdisciplinary spirit, combined with immense documentary concreteness and extraordinary sensitivity to the problems that the present posed itself to the attention of the historian, that led Braudel to propose a conception of the market that differs from the idea of capitalism, and indeed in a certain sense opposed to it: the market was a place in which producers and consumers went to exchange goods and needs, strongly regulated by custom and local authorities, in which competition was a real and protected experience, whereas capitalism was the centralization of enormous financial resources, accompanied by political connivance, such that it translated much more into a system of power than into a competitive space. The distinction between market and capitalism would have helped the economists of the early eighties of the last century to make the thinking that would characterize the next forty years less unique.

But apart from economics, the collaboration of Annales history with other humanities was fruitful for all disciplines. And the amalgamation succeeded partly because of a very special attention to the quality of writing. Braudel's narrative choices are themselves a subject of study. Braudel rewrote the thousands of pages of his major works five to seven times. The quality of Braudel's writing is an integral part of his story, for to make the life of the era studied felt, it was necessary to work on many dimensions of communication.

One might say that narrative - in the end - is the framework in which the contexts of past, present, and futures, along with the approaches of various disciplines, connect. If the plurality of durations of social time is not given schematically but is proposed in a narrative framework of quality, it becomes a 360-degree human experience, not a cold intellectualistic explanation. It helps to "feel" time in a new way. With an unexpected consequence: one realizes that such a broad and multidisciplinary historical perspective, narrated in a sensitive way, becomes essential for imagining the future, for wondering why in the present the past is asked certain questions and, finally, why in what the past has settled in one can read the consequences that bind the present. History ceases to be the discipline that deals with the past, but instead rightfully becomes the science that deals with time. With a strong focus on its narratives. And as a corollary, the ways of assessing the importance of innovation of historical significance are redefined: this kind of innovation becomes what expands the constraints of the past and multiplies futures. Therefore, by studying the relationship between what lasts and what changes, precisely, the judgment on the importance of innovation is contextualized, the discernment is rested on an important documentary foundation, history is given the chance to guide the narrative chosen to evaluate the new, to minimize the tendency to exaggerate and underestimate the new.

Errors through exaggeration or underestimation of innovation have indeed been a constant in the last thirty years of multiplication of novelties. The narratives that led to these errors were, from time to time, ideological, advertising, promotional, political, technocentric. The historical methodology for the generation of narratives aware of the plurality of the durations of social time will allow discernment to be placed in a more balanced condition, cultivating the awareness of what changes and what does not change. The manipulator of reality can always claim that a fact "changes everything." A historian can doubt it. With good reason.

Important innovation, therefore, multiplies futures. Since innovation is not the proposal of a novelty but its adoption, possible futures flood when users interpret the innovation in ways that push the envelope of what was imagined feasible in the past. It is likely that historically important innovation unlocks the creativity of those who adopt it. All of this can help to better understand innovation and to problematize futures more realistically. But how does this interpretive trajectory intersect with the ambiguous, complex question of harmony?

5. The multiplicity of harmonies

Harmony is not the negation of contradictions nor the trivialization of complexities, but possibly the search for essential simplicity, which respectfully listens to every need and recognizes music where in chaos only noise is heard. The result of harmonic innovation benefits each and everyone, not just a few.

What is harmony then? A perfectly coordinated chorus to be pleasing "by design" or the sound that is achieved after going through a cacophonous experience? Is harmony the result of conscious

and preordained cooperation or the evolution of the elements of a complex system towards a state in which each one adapts to the whole?

Perhaps all of this may have to do with harmony. Perhaps the first kind of harmony, the kind that comes from good coordination, is easier to recognize but is also the most limited in terms of application, since it requires very precise enabling conditions. Perhaps the second kind of harmony, the kind that participants arrive at by experiencing the complexity of an ecosystem and evolving to adapt to it, is more likely in nature. In either case, we can say that stable, universally recognizable harmony is relatively rare when it emerges from radical innovation, while it may be more sustainable when it relates to long-lasting phenomena. These are strong assumptions and all need to be explored further.

Certainly, there is no one-size-fits-all recipe for harmony. Without debating on the alternative realities that are likely to coexist in the world redefined by quantum physics, without the need to look for evidence and explanations of the theories that explain phenomena with the coexistence of multiverse, we are nevertheless aware of the plurality of narratives related to the multiplicity of points of view and relationships between groups and human individuals. And we begin to understand that the diversity of points of view is not a brake on quality development: it is rather an asset and a stimulus for the search for forms of innovation with meaning. Discussion or even conflict are also implicit in diversity.

Seeking harmony by denying conflict would clearly be a stretch. While conflict can certainly be a means it cannot be the goal. Harmony is an achievement or adaptation, not a stable, problem-free condition. Unless we deny freedom and desire, which could perhaps generate harmony for a while, but would force confrontation and conflict to live in the shadows to pop up at the first opportunity, in a probably more violent and intolerant form.

One can also discuss whether harmony has to do with the desirability of the path one is on or the future goal one is pursuing. The relationship between expectations and reality is always dangerous in terms of harmony. Just as it is difficult to reconcile the realistic narrative of the future with the ideology of the desirable future. Utopia itself can only be harmonized by thinking of it not as an unattainable future but as an intellectual tension to improve the goals to be pursued. And since words matter, "utopia" can in most cases simply be thought of as a "project."

Certainly, harmony is felt in a context in which people read their lives within the framework of a common narrative and are able to find ways to make choices that, at least in the long run, benefit everyone: dynamics that makes all the stakeholders of a company win is harmonious; the platform that brings together the different and helps them interact on the basis of a common method that leads them to generate a cultural and economic wealth greater than the sum of the parts is harmonious; the vision that includes and makes tradition and innovation, established generations and those entering life, points of view marked by experience and those of people who do not know the limits of the possible, not only so that they respect each other, but so that they exchange value, is harmonious. Harmony is the result of training: to know how to apply solutions that work and to develop in order to know how to be open to the unexpected.

Since we know that innovation challenges every habit and, when it is important, tends to modify the trajectory of phenomena that have a relatively long duration, generates tensions and provokes the need for adjustment, the distinction between those who understand it and those who reject it,

between those who advance and those who lag behind, increases. However, a society that goes through a major transformation characterized by a series of important novelties that never cease to accelerate change, either accepts to live in a continuous series of social and economic earthquakes, suffering the consequences, or tries to act proactively, no longer recognizing innovation unless it is framed in a further strategy, in a sort of search for meaning that serves to evaluate it in relation to a desirable direction. When society has lived long enough in a historical period of tensions caused by disruptive innovation, it tries to move to a new phase: if it chooses to invest in an innovative method oriented to the participation of all stakeholders in the benefits of innovation, if it addresses innovation to the solution of the major systemic problems it faces as a community, if it gives itself missions that only innovation can achieve, then training in harmony becomes an integral part of success: in those conditions, there is no innovation that is not harmonic innovation.

At that point, innovation becomes exactly what it needs to be: a multiplier of possibilities, for all, not a concentrator of advantages, for a few.

In the end, then, the issue of harmony is deeply connected to the narrative of the future open to the infinite interpretative possibilities of each one, within a framework of compatibility defined at community level. The issue of harmony does not properly arise without adequately taking into account the dimension of community.

It is therefore a matter of critically discussing the mega-narratives that can be adopted to harmoniously develop progress. Lately there have been some narratives designed to connect the freedom of each individual and the common good:

1. The narrative of the market: the perfect information system that allocates resources in the best possible way, for 40 years has reduced the space of the state in the belief that it was better for the common good. It was a misunderstanding based on the error of identifying the market with capitalism which led to the de-structuring of intermediate bodies that balance the dynamics of competition, privatization with social and economic polarization, deregulation with recurring crises.

2. Self-referential technology narrative states that the next version of technology is always better than the previous one. Technology produces progress. Technology is innovation. One only needs to invest in technology, in technological expertise, in the application of technology to generate progress. Society must adapt to technology in order to be propelled toward progress. The meaning of this is totally secondary. The exponential growth of technology, then, having become an ideology, turns into the obligation to accept it: if the next version of technology is always better than the previous one and if the growth of technology is exponential, there is no need to adapt, to obey, to merge in the continuous generation of unpredictable technological innovation. Consequences: destruction of intermediate bodies, destruction of old businesses, destruction of traditional authorities, with polarization of power and wealth, culture of convergence of true and fake, of hate and empathy, of banality and depth. Subjugation of technological innovation to the headless dynamics of speculative finance. Opportunity remains but not in self-referential technology.

3. The ecological narrative: it is the dynamics and context in which evolution takes place, as an exploration of the possible. It is a method for looking at the consequences of choices in

the complexity of reality. It is an approach that encourages us to look for signs of co-evolution among phenomena. It is the awareness of the limit. And the challenge to overcome it consciously. It points to polyphonic futures whose harmony is the score of universal reality in the long term: appreciable only by conquering a broader, more open and continuously updated mind.

The enemy of the harmonious future is not conflict but the civil death of any ideology that proposes to interpret what exists as the "end of history".

6. The evolutionary networks of harmony

What to do. There are no easy solutions. It is known that the structural evolutionary framework with which to come to terms is characterized by a digitized media environment, a natural environment in crisis due to climate change, a polarized social system, a demographic context oriented towards an aging population in rich countries and a strong population growth now concentrated only in the last developing countries, predominantly African. In the face of these epochal challenges, there will be no future unless it is a harmonious future.

The enablers of the earlier stages of innovative acceleration have been the market and technology. Inclusive forms of balance were sought by states in rich countries. But the current challenges go beyond that. They concern the dimension of community. Not in the old sense of small groups of people who all know each other and live in a restricted territory that forces them to be a community. But in the sense, as Ezio Manzini teaches[36], of voluntary aggregations of people who recognize a "common good" for the protection and enhancement of which it is worth organizing and working together.

Clearly, modern communities need technology to increase their impact. And they need to give themselves rules that are easy to implement and enforce, perhaps embodying them in platforms that "codify" them in practical ways. And they need to innovate as much as they need to nurture their traditions. So their essential problem is to build common knowledge, effective operating practices, and cultures that are appropriate for respecting differences and cultivating the common good. Education in these communities is the essential investment.

The problems of harmonizing diversity are the best and most generative. After all, it is clear that by finding a register of dialogue, diversity is richness. Much more difficult are the problems of harmonizing coexistence between increasingly distant "tribes" of values, such as those that gather around principles considered absolute and irreconcilable with those of others. But the conquest of points of view aimed at the common good should help: think of the issue of vaccines. The principle of freedom of conscience that would allow each person to refuse if he wants to get vaccinated is in contrast with the need to contribute to the conquest of a general immunity that can bring infections to a level of problems that do not bring health systems and entire countries to their knees. On the other hand, there is no freedom of conscience to drive one's car keeping the left side of the road, at least in continental Europe, because in that way one would contribute to destroying oneself and others. The issue of vaccines is similar. On the other hand, in general, all the topics that develop on networks and imply strong consequences on the quality of individual and collective life are more and more often topics that can be approached thinking about

[36] Ezio Manzini, Politics of the Everyday, 2018 Edizioni di Comunità ; Ezio Manzini, "Community as a Space of Opportunity," in "Remediate Re-Mediate" edited by Francesco De Biase, FrancoAngeli 2020.

platforms enabling the implementation of community rules and giving them the capacity of impact. Because impact will be needed. To innovate, even in this context, will be to nurture evolution, which in turn is the exploration of possible futures. The harmony of factual results will be sought by a culture capable of exploring the possible with a challenge to win for the common good in mind.

In the path of harmony, there is no abstract and unlikely causal relationship between cooperation and coevolution. However, there is probably a correlation, in some way a trend made common by a set of enabling preconditions. Will a harmonious or conflictual future emerge, then? Will sustainability or destructiveness emerge? Will the repetition of conflicting interests or cooperation for the development of the common good last longer? This is the question of questions, as far as the human species is concerned. The rest of the planet will be fine even when humans surrender to their inability to overcome their own destructiveness.

The assumption proposed in this paper is obviously tuned to the complexity of the topic. As seen here, we consider the context defined by strong coordinates: a plural historical time that opens to a future of alternative possibilities and a pluralistic media space that in turn serves the confrontation between conflict and cooperation. There is a set of inescapable macro-constraints that implicitly direct the choice: it can be said that in the end there will be stabilization, with or without humans. There are signs of awareness, manifest in some cases, for example, in the world of businesses that choose sustainable development and in the world of organizations that propose methods to coordinate the choices of individual states in the search for a new model of sustainable development. However, approaching sustainability will require innovations that, by exploring the possible, will create tensions and conflicts, to some extent alternative to harmony. The question is whether it will be conflicts or harmony that will tune in over the long term. One can imagine that the logics of history and cogent constraints may eventually reduce the possible alternatives. But innovation will not cease to reopen more of them. So in the end the possibility of harmony outlasting conflict, the possibility of sustainable innovation, will be an emergent choice. A choice that will not necessarily be truly conscious and preemptive, but one that will emerge in complexity, through coevolutionary dynamics that will appear cooperative. In other words, such is the complexity of the world built by humans that it will be difficult to see a global collective wisdom take over the stupidity of destructive models: but such is the power of ecological constraints that, in the end, a myriad of small local, individual, group and especially community choices will appear in a number of correlated trends; in this context, coevolutionary phenomena could emerge that resemble, ex post, precisely, cooperation. This could be the path to strengthen the harmonic hypothesis in the narrative of the future. At the bottom of the correlation between conscious cooperation and historically determined coevolution is an organization of the eco-cultural niche in which the process that encourages the practice of sharing an agenda over the desire to oppose interests takes place. Therefore, coevolution could become the new knowledge management system, which is not called like the market to arrive at the best allocation of resources, but to put in place the most suitable solutions for the long-term survival of the community.

It is possible to think that a harmonious future is the only one possible, for example in the face of the impending climate disaster. But in fact, to put it with an understatement, the search for harmony will not always be pursuable with a conscious coordination between everyone: it will often be a non-violent battle, made of small conscious choices, wise testimonies, made by individuals and especially by communities in a collective body whose intelligence is not given by

the control of the whole but by the co-evolution of details. The great motto of the master of non-violence, Mahatma Gandhi, therefore remains the synthesis of the harmonic future: "The means may be likened to a seed, the end to a tree".

Strategic altruism and harmonic innovation

by *Domenico Marino*

1. Introduction

This paper tries to build an explanatory model of harmonic innovation based on the evolutionary theory of games, through which we will attempt to provide a microeconomic interpretation and foundation to this paradigm. There are many different definitions of innovation in economics. The point from which we want to start, however, is to consider harmonic innovation, i.e. innovation that arises and develops if all the players involved interact positively with each other and with the external environment. Enterprises, territories, institutions thus become pieces of a larger puzzle that can grow only if all actors cooperate and contribute to collective growth. “Innovation, in a broad sense, can be identified as the most powerful agent of change in the history of mankind, intimately linked to the concept of progress that is oriented and shaped by innovation itself [...] It is not a matter of reasoning about the many innovations, the many actions, the many possible interventions: it would risk being a weak exercise if it does not stand on solid foundations. Rather, we need to stop and reflect on the very concept of innovation, by reframing its foundations. This effort takes on a precise formula: the paradigm of *Harmonic Innovation*, i.e. circular innovation that pursues the "*right relationship*" and knows how to combine contrasting elements and tones in a logic of consonance" (Cicione, De Biase, 2021). It seems therefore necessary to try to grasp the founding elements of this new paradigm and the aim of this work is to identify the determinants of harmonic innovation starting from a rethinking of the concepts of altruism in the light of competitive theory of games. Obviously, this will not be about altruism developing within a Prisoner's Dilemma model and being an efficient coordination game, but rather a game developing according to Stug Hunt's scheme which is a coordination game with common interest.

2. Altruism as an economic behavior

In order to well understand the microeconomic foundations of harmonic innovation, it is necessary to reflect first on the concept of altruism and then go on to explain some of its peculiar characteristics through an evolutionary game designed according to Stug Hunt's scheme. The introduction of altruism as an expression of economic behavior is a topic that concerns the foundations of economic theory, in particular, the possibility of maintaining the principle of self-interest to describe the rationality of individual behavior.

It is not the intention of this paper to rebuild the extensive literature on altruism and non-utilitarian behavior, but simply to grasp some elements of analysis that seem particularly interesting.

Among the most important contributions on the topic of altruism, it is worth mentioning Sen's critique of revealed preference theory because choices are not only about personal well-being and because there are sources of information unrelated to choices.

It is also necessary to ask whether it is possible to give altruism a "measure", i.e. whether it is possible to treat it as an topic for a utility function to be maximized. In this regard, the most advanced contribution is to be attributed to Calabresi (1995), who starts from this assumption in order to attribute a value (in terms of utility) to the fact of living in a society where there is charity, gratuitousness and solidarity. Altruism, however, has a cost that can be positive, zero or negative (where it determines benefits only). Calabresi himself points out that other authors rule out the possibility that altruism has a cost (Hirschman, 1985), since it cannot be destroyed by using it.

McKean (1975) also pointed out that it is not possible to "optimize" altruism because it can neither be bought nor "commanded". Where this is not possible, and in the case of altruism it is not, since when I "buy" it, I destroy its intrinsic content, it is not possible to proceed with the traditional tools of economic analysis.

Calabresi counters these lines of development by arguing that much can be done and, in practice, is being done to increase altruism. There are "quasi-prices" that can be used to "produce" altruism. The typical case is that of "tax incentives" that produce altruism both because of immediate convenience, but at the same time because they help spread a culture of giving. Similarly, education can be a way to introduce altruism. Harmonic innovation in this framework could be a form of "quasi-price incentive" and an educational vehicle for generating altruism.

In this short examination of some of the theoretical implications of altruistic behavior, we cannot fail to recall Zamagni's contributions on the topic of civil economy. (Zamagni, 1994,1995a, 1995b) In particular, discussing economic development, Zamagni argues that "reciprocity is the intangible element that allows building the networks that bind together economic actors in a web of implicit contracts.”

In order to rebuild the foundations of rationality for this thesis, Zamagni recalls how the economic theory of this century has been built starting from the assumption of a-morality and "self-interest", to demonstrate analytically how the market is the social organization capable of efficiently allocating resources.

It has been widely demonstrated how this structure can be undermined at different levels. Zamagni concludes by arguing that it could be promising to build a path of analysis centered around the tools necessary to foster cooperative behavior, which, however, do not rely on market incentives or public intervention. This would be the space for the so-called civil economy.

Therefore, harmonious innovation would have in this framework the task of "initiating" the structures of reciprocity that serve the system, including that part of it that operates on the basis of the logic of profit, to grow and consolidate.

The debate on altruism cannot overlook an analysis of the type of rationality that inspires the choices and behavior of the players. In this sense, it is interesting to construct a sort of taxonomy that allows us to scale the rationality and selfishness of economic players. An extreme of the scale is certainly represented by the player who operates according to the criterion of absolute rationality, i.e. is perfectly informed, has an infinite capacity to process information, does not make mistakes in processing information. Many people agree on the unrealism of these conditions; however, the model with rationality remains a model of extreme formal beauty and mathematical elegance.

However, the assumption that the economy is also influenced by human factors has slowly made its way into economic theory. Although the incorporation of behaviors of an intrinsic psychological nature is extremely difficult to achieve within the dynamic equations that characterize the economic system, however, it is necessary to obtain a higher degree of realism. In reality, human beings are limitedly rational and opportunistic. When we talk about human factors, we are highlighting this characteristic. Limited rationality means that economic players are satisfied with a sub-optimal level of outcome, as long as this level is satisfactory from their point of view. That is, players do not seek the highest individual outcome, but settle for a given outcome. Another way to define limited rationality is related to the cost of information. In a world in which additional information is expensive and achieving a higher degree of outcome requires paying the cost of more information, it may be that players make decisions using available information without seeking access to all available information. Players can also be represented as opportunists who maximize their individual utility and there is no rule that can lead them to a different behavior.

Thus, we can build a taxonomy of economic players (Williamson, 1985) by relating the different degree of rationality and the different attitude towards the final outcome.

We can then design a six-quadrant scheme as follows:

	altruist	***selfish***	***selfish and amoral***
organic rationality	Evolutionary approach	Evolutionary approach	Evolutionary approach
limitedly rational	Team Theory	Temporary balance	Economics of transaction costs
totally rational	Team Theory	General balance	Information economy

In the Team theory it is assumed that all individuals share the same utility function which coincides with the social welfare function. Even if they do not have the same information, however, in such a world there is no uncertainty about the future behavior of individual players that will be aimed at maximizing the collective welfare. Equality of preferences can be interpreted as a weak form of selfishness (Marschak, Radner, 1972). The general economic balance consists of totally rational and selfish players. In this sense, they will not hide relevant information from others. Instead, we find selfish and amoral players in models that include unfair behavior, adverse selection, and signaling. Then there is the case of players who decide following a rationality of organic type, i.e. according to behavioral criteria, adapting subsequent decisions to the previous decisions of the others. The previous taxonomy is inadequate because it does not make sense to define the intensity of selfish

behavior, and ultimately perhaps it does not make sense to define selfishness as a behavioral characteristic of the players, because it is the behavior of others that motivates their choices and not internal predisposition. Essentially, egoism is not a characteristic inscribed in the DNA of players but rather a potential evolutionary choice of the agent in relation to particular environmental conditions. This type of approach is called the evolutionary approach and is currently one of the most interesting fields of research in many areas of economic science.

Harmonic innovation falls squarely within this class of problems.

The traditional concept of altruism, however, is still a too general pattern to be considered as a fundamental characteristic of the economic systems.

Strategic altruism (F. Marzano, 2002) seems a concept suitable to describe the paradigm of harmonic innovation.

Marzano's analysis clearly highlights the limits of traditional theories in attempting to explain the relationship between altruism and self-interest behaviors.

People often confuse the concept of strategic behavior with selfish behavior. In reality, strategic behavior can independently be both altruistic and selfish.

Thus, strategic altruism is "what enables two parties that interact economically to both achieve, by mutual divestment, a better outcome, being both interested in each other's welfare."

The theoretical scheme of strategic altruism can provide that link between the theory of altruism and the characteristics of harmonic innovation. The evolutionary game model that will be developed will consider altruism behavior as the fundamental feature of strategic innovation. In particular, we will attempt to model competition within a market between selfish and harmonic enterprises.

3. An application of an evolutionary approach to the problem of competition between selfish and harmonic startups

To introduce an evolutionary approach, it is first necessary to define the concept of fitness. In biological models fitness is defined as the probability of survival. In economic models fitness is a synonym of payoff. In the models of the theory of games, fitness can be defined both in relation to a single player and in relation to a group of players.

A fundamental point is the distinction between altruistic and selfish behaviors of strategic type and, consequently, to deal with the problem of competition between selfish and harmonic enterprises, where by harmonic enterprise we mean an enterprise that follows the paradigm of harmonic innovation.

In an evolutionary context, the payoff will depend on the type of enterprise that emerges, and this will be correlated with the ratio of harmoniously behaving enterprises to total

enterprises. If *k* is the ratio of harmoniously behaving enterprises to total enterprises, then *(1-k)* is the ratio of selfishly behaving enterprises to total enterprises. The expected payoff will then be:

$$E(arm) = kP^{s}_{arm} + (1-k)\, P^{c}_{arm} \qquad (1)$$
$$E(sel) = kP^{c}_{sel} + (1-k)\, P^{s}_{sel} \qquad (2)$$

where P^{s}_{arm} is the payoff when the two groups play cooperatively, P^{s}_{sel} is the payoff when the two groups play non-cooperatively, P^{c}_{sel} is the payoff when the first group plays non-cooperatively and the second group plays cooperatively, P^{c}_{arm} is the payoff when the first group plays cooperatively and the second group plays non-cooperatively.

If two harmonic enterprises meet, then it must be assumed that the fitness gain that each of them receives from the behavior of the other enterprises is greater than the fitness loss they produce with their own harmonic behavior. In the opposite case, if two selfish enterprises meet, there is no change in fitness. Finally, if a selfish enterprise meets a non-selfish enterprise, then there is a fitness gain for the selfish enterprises and a fitness loss for the non-selfish enterprises.

Using the evolutionary approach we can describe the situation with a particular game called "STUG HUNT" game.

In this game, the two players must simultaneously choose between two options, one risky and one safe. The risky one is to hunt together, the safe one is to forage together. The latter is the risk-free option, while the former is the risky one, but with a higher payoff.

The payoffs of a Stug Hunt observe the following rules:

$$P^{s}_{arm} > P^{s}_{sel}, \quad P^{c}_{sel} > P^{c}_{arm} \text{ and } P^{s}_{sel} > P^{c}_{arm}, P^{s}_{arm} > P^{c}_{sel}, \quad (3)$$

If we consider two populations of start-ups that can choose to operate under the harmonic paradigm (risky strategy, but higher payoff), or behave in a selfish manner (save strategy), a standard payoff matrix for a Stug-Hunt type game can be written in the following form:

	Harmonic	Selfish
Harmonic	P^{s}_{arm} P^{s}_{arm}	P^{c}_{arm} P^{c}_{sel}
Selfish	P^{c}_{sel} P^{c}_{arm}	P^{s}_{sel} P^{s}_{sel}

A "Repeated Stug-Hunt Game" is a description of some characteristics of the dynamic evolution of competition between altruistic and selfish enterprises. It is very useful to define the solutions of the game and their stability.

Therefore, if we consider two different groups of enterprises in a specific sector, it is possible to obtain three different results that emerge from the "Repeated Stug-Hunt Game":

1) Only the first group survives
2) Only the second group survives
3) The first and second groups survive in the same industry.

Obviously, the term "Only the first group survives in the industry" does not necessarily imply the extinction of the other group, but simply the specialization of the industry.

In the paper, the competition and selection mechanism between selfish and harmonic enterprises in the context of the "Evolutionary Theory of Games" will be modeled.

Assume that at the beginning of the game a number of enterprises can be identified from their attitude towards cooperation.

If the market is large enough such that the two groups can survive, i.e., the circumstance that the coexistence payoff is non-negative with probability 1, then the previous three cases can be associated with the payoffs:

- In case 1 only the first group survives and the payoff is P^s_{sel} (specialization equilibrium).
- In case 2 only the second group survives and the payoff is P^s_{arm} (specialization equilibrium);
- In case 3 there is coexistence between the two groups of enterprises and the respective payoffs of coexistence are P^c_{sel} e P^c_{arm} (coexistence equilibrium).

Symmetric Stug Hunt Games have been extensively studied. Using this formulation of the game, the solutions that emerge are of the "selfish/selfish" type and of the "harmonic/harmonic" type, which are the asymptotic attractors for the system. The other two solutions (coexistence) are only temporary. The solution of the "selfish/selfish" type is called "risk dominant equilibrium" and the "harmonic/harmonic" solution is called "payoff dominant equilibrium".

There is a debate in the literature between the two equilibria in pure strategy. Some authors think that the rational choice is the *payoff dominant equilibrium* (Harsanyi, Selten, 1988), other authors (Carlsson, Van Damme, 1993) argue in favor of the *risk dominant equilibrium*. The *"payoff dominant equilibrium"* can be more hardly achieve in large groups than in small groups (Mailath, 1998).

The basin of attraction of the payoff dominant equilibrium is wider than the risk dominant strategy. This obviously is not enough to guarantee the convergence of the asymptotic solution towards the payoff dominant strategy. In order for the payoff dominant strategy to be the asymptotic one, it is necessary to add two additional mechanisms: a positive correlation between the behaviors of the players obtained with the imitation of positive behaviors and a reinforcing learning between the players.

Harmonic innovation, as a form of strategic altruism, as we have defined it, has these two properties and therefore in the game we described above with two populations of startups

having to choose whether to behave in a selfish or harmonic manner, the rational choice will be to behave in a harmonic manner.

4. Conclusions

The model above is thus of competition between selfish and harmonic startups in which the outcome is given by the interaction of two enterprises that play two different strategies, one of selfish type and the other of harmonic type. The condition that the payoff dominant equilibrium is the asymptotic solution is guaranteed by the very characteristics of the harmonic innovation that constitutes the micro-foundation of the behavior of the population playing the payoff dominant strategy. The result of this reasoning is that the introduction of the paradigm of harmonic innovation has an effect of dragging on the other companies and, being the most rational strategy, it will be the one that in the long run will strongly emerge leading to the possibility of a strong specialization of sectors of the economy which comprise only harmonic enterprises.

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A few preliminary considerations on the Harmonic Society

by *Valentino Bobbio*

1. Growing injustice and poverty in the world: a society for the few is not harmonious

Are we satisfied with the society we live in? What is the quality of life of human beings on this Planet? Our lives are generally difficult and tiring, and now they are even made more difficult by the pandemic, which upsets and disorients us. However, our society is increasingly suffering and unequal, and unable to take care of those in need, with the paradox at the same time of enormous waste and great potential. For example, in 2019 while 690 million people worldwide[37] were going hungry, half of the world's agricultural production was wasted.

Injustices and inequalities add up to environmental disasters and the climate crisis, causing suffering, unemployment, despair and emigration, and generating, as Pope Francis reminds us, "human waste." The crisis is comprehensive and touches society and the environment as a whole. In short, we find ourselves living in a severely disharmonious society.

The World Inequality Database (WID)[38], a worldwide database on inequality in which 150 researchers from all continents collaborate, including Thomas Piketty, Gabriel Zucman and Andrea Brandolini, updating data on income distribution in different countries, shows that *income inequality* continues to grow and that the increase in inequality is due to the growth in wealth of the richest 1% of the planet, while the portion of income of the poorest 50% of the population fluctuates, depending on the country, between 5% and 25% of total income. Even more unbalanced is the *distribution of assets*: the poorest 50% of the population owns almost nothing (generally less than 5% of the total), even in the most egalitarian countries such as those of northern Europe. According to Oxfam, in 2019[39] in the world the richest 1% held 47.2% of net aggregate wealth and the poorest half (3.8 billion people) held 0.4%. In the same year in Italy, the richest 20% owned 72% of national wealth, and the richest 5% owned the same wealth as the poorest 90%.

If income inequality is a very serious problem, economic poverty is accompanied by other dimensions of poverty that concern *work* (unemployment, undeclared work, poor work...), *health* with limited access to even life-saving treatment in many countries, *relationships due to* loneliness and lack of human contact, *education* with consequent loss of opportunities and marginalization, *culture* with inability to understand and adequately address the critical issues of life. These different forms of poverty are, for the most part, *cause and effect of each* other *together.* Moreover, the different forms of poverty tend to be hereditary and to be passed on from

[37] The State of Food Security and Nutrition in the World, FAO Report 2020.
[38] https://wid.world/
[39] Oxfam global Inequality report 2020, based on World Bank report 2020.

generation to generation. Even in Sweden, the surnames of the most prestigious families in the 1700s still appear, after three centuries, among the highest-income and highest-wealth families. Above all, educational poverty contributes to the intergenerational transmission of economic poverty.

According to studies by Branko Milanovic[40] and Thomas Piketty[41], confirmed by WID, the only ones to have gained income shares are the poor in emerging countries and, above all, as already mentioned, the richest 1% of the population, whose income has gone from 17% of the total in 1980 to 20% in 2000. *In short, we live in a very suffering and disharmonious society, and to make it more harmonious*, that is, consonant and collaborative in all its components, as well as more harmonious, it is necessary to tackle and strongly reduce inequalities.

2. The harmonious and happy society is not the richest one

Richard Easterlin[42] in 1974 noted that happiness does not increase with income: beyond a certain level the benefit of income on personal well-being and social well-being is limited. In people's lives, happiness seems to depend very little on variations in income and wealth. Certainly health conditions, quality of democracy, freedom of expression and respect for personal rights influence happiness.

According to Becchetti[43] - co-founder of NeXt and president of the Scientific Committee, the components of happiness (in addition to well-being) are above all the *quality of* interpersonal *relationships* both in social life and at work*,* the *esteem and appreciation of* others who recognize one's contribution and value, and the perception of *usefulness of one's life and work.* These are all intangible aspects that give meaning and motivation to one's life.

The context of society and its policies can foster growth in population happiness and thus **promote greater social harmony**. Comparing the policies of a seemingly much wealthier country (Ireland) and one more concerned with social sustainability/harmony (Finland) shows us that growing a harmonious society is possible.

The Irish Prime Minister Leo Varadkar, leader of Fine Gael had called early elections sure to win them and gain a solid majority, thinking to capitalize on a consensus arising from the strong economic growth of the country and a decisive management of Brexit to save free trade relations between the Republic of **Ireland** and Northern Ireland. Instead, on February 8, 2020, he was defeated, and lost both votes and seats, and his party even came in third. What happened?

In fact, from 2012 to 2017 the Irish economy grew at an average rate of 9.4% per year, and in ten years GDP per capita grew by 53%. Today, the Irish rank among the richest in the world: in the 2018 IMF rankings, they are fifth in the world, with a per capita GDP of $79,925, preceded only by small countries. But the country's high GDP hides many problems: on the one hand, it is inflated, and without the multinationals, with the European headquarters of Google, Amazon and Facebook attracted by a very favorable tax (corporate tax at 12.5%), it is worth 30% less. On the other hand,

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[40] Milanovic, B., Global inequality: A New Approach for the Age of Globalization, 2016, Harvard University Press, Cambridge MA.

[41] Piketty, T., Capital and Ideology, 2020, Harvard University Press, Cambridge MA.

[42] Easterlin, R., Does economic growth improve human lot? Some empirical evidence, Nation and Households in economic growth: Essays in honor of Moses Abromowitz, 1974, Academic Press, New York e London.

[43] Becchetti, L., NEXT -Vote with your Wallet! , 2015, Albeggi editore, Rome.

wealth does not "percolate" on the population, and the Irish are less well off than they appear. In fact, according to data from the Irish Central Statistics Office, many citizens (800 thousand people, equal to 16.6% of the population) still live below the poverty line.

Interviewed by journalists from *The Economist* at the exit of the polling stations, voters expressed a strong unease: 63% of voters said they had not perceived economic growth in recent years on their incomes; 32% complained about the health system, for the difficulties in being hospitalized, the lines in the corridors of hospitals, the years of waiting for specialist visits; 26% considered the problem of housing very serious, both for the lack of housing and for its very high cost; 65% called for an increase in social spending, feeling little protected.

This is also the effect of the strict policies to balance the budget and reduce public debt, which had risen sharply due to the banking crisis of 2007-2008. The cutback in social and health spending and the freeze on real estate mean that 77% of young people still live with their parents and in Dublin the housing situation is very critical: high rents make it the fifth most expensive city in the world. Irish people can no longer stand the long period of austerity, and want more welfare and more services, not more GDP. The curse of GDP has hit Fine Gael and Leo Varadkar!
Quite different is the situation in **Finland**. Despite having, for the IMF, a GDP per capita of $49,738 in 2019, just over half that of Ireland, for the second year in a row Finland is for the World Happiness *Report 2019* - prepared by the United Nations Sustainable Development Solutions Network - the happiest country in the world. The secret can be summed up in three words: equality, culture and social security.

Equality. Finland has a very low Gini coefficient that expresses limited inequality. This is due to long-term policies of inclusion, for which the state works together with local government and private foundations. Citizens therefore have good esteem for their political and administrative class, balanced by a widespread sense of civic duty and honesty. In addition to experimentation with a citizenship income for underprivileged citizens, mention should be made of the substantial abolition of prisons replaced by re-education and re-integration services (with a reduction in security costs). Exemplary is the commitment to recovery and reintegration of homeless people, which has reduced them from 18,000 in 1987 to 5,000 in 2019 through the *Housing first* policy: first of all a house is offered, accompanied by social assistance aimed at training and social and work reintegration. The houses are bought through gambling revenues, supplemented by municipalities and foundations. The government has also increased parental leave to 14 cumulative months, to be divided equally in a flexible way between both parents, so that both take care of the children.

Culture. Education is free until the doctorate, and schools have great organizational autonomy and are very engaged in educational experimentation. Children work on projects, without homework, and have excellent results. Teachers have a very high level of preparation, all with at least a master's degree, are well paid and their role enjoys great social prestige. Thus the level of education of the population is high, fueling an innovative economy that was able to overcome first the crisis of the Soviet market, outlet of most Finnish exports, and then the collapse of Nokia. As a result, unemployment is low and gender equality very high: for gender equality, Finland is the fourth country in the world - according to the *Global gender gap 2018* survey of the *World economic forum* - while Italy is seventieth, after Mongolia, Rwanda and Namibia.

Social Security. The Finns believe that social security promotes serenity of life, work/life balance and therefore a productive and creative working climate, where everyone is committed to making the contribution they can. Working hours are well-defined, and those who lose their jobs can find transition paths and training and retraining aimed at their skills. For every need, citizens can find help from the community. Even if widespread social services entail high taxes, citizens believe that these are well-invested resources and that the return for them is of greater value than what they pay. Investments in quality health care that is accessible to all are substantial. Rare diseases, disabilities and mental illnesses are quickly addressed. Tackling alcoholism has reduced distress and halved the suicide rate.

Finland is a *model of society based on cooperation, mutual trust, hard work of analysis, the search for shared solutions over time, within the framework of continuous policies that proceed by increments and successive tests*. It is a **harmonious society** not only because of the *policies* pursued, but also because of the *method* by which they are conceived and implemented, both through ongoing commitment over time and by systematically listening to the needs of society.

What about the **United States**? Warren Buffet, big investor with Berkshire Hathaway, declared that it is not fair that his secretary pays more taxes than him. Nobel laureate Joseph Stiglitz says the economy is not working in America despite a 2.1% GDP increase in 2019 with a soaring stock market: he confirms that "neither GDP nor the stock market, he says, is a good way to assess a country's performance." Since 2017, in three years, the average wage has increased only 2.6% and remains lower than it was 40 years ago. Meanwhile, the 1% of the population, and the 0.01% in particular, have become enormously wealthy because much of the increase in GDP has benefited the immoderately wealthy: the tax cuts enacted by Trump have favored them only, and instead of new investment, they have triggered corporate share buybacks.

The consequence of this policy is higher taxes for middle- and low-income families, while cutting social spending. In two years, health coverage has collapsed, and millions of people have lost their insurance: the uninsured have increased from 10.9% to 13.7% of the population.

All of this has led, uniquely in the developed world, to a *decline in average life expectancy* and an increase in middle-age mortality from despair due to alcohol, drug overdoses and suicide, especially among white males, who have more labile family and social networks of solidarity, as Princeton economist Anne Case and Nobel economist Angus Deaton point out. Stiglitz believes that deregulation measures "have allowed corporations to pollute the air, increase the number of Americans addicted to opioids, pushed more children to eat food that provokes diabetes."

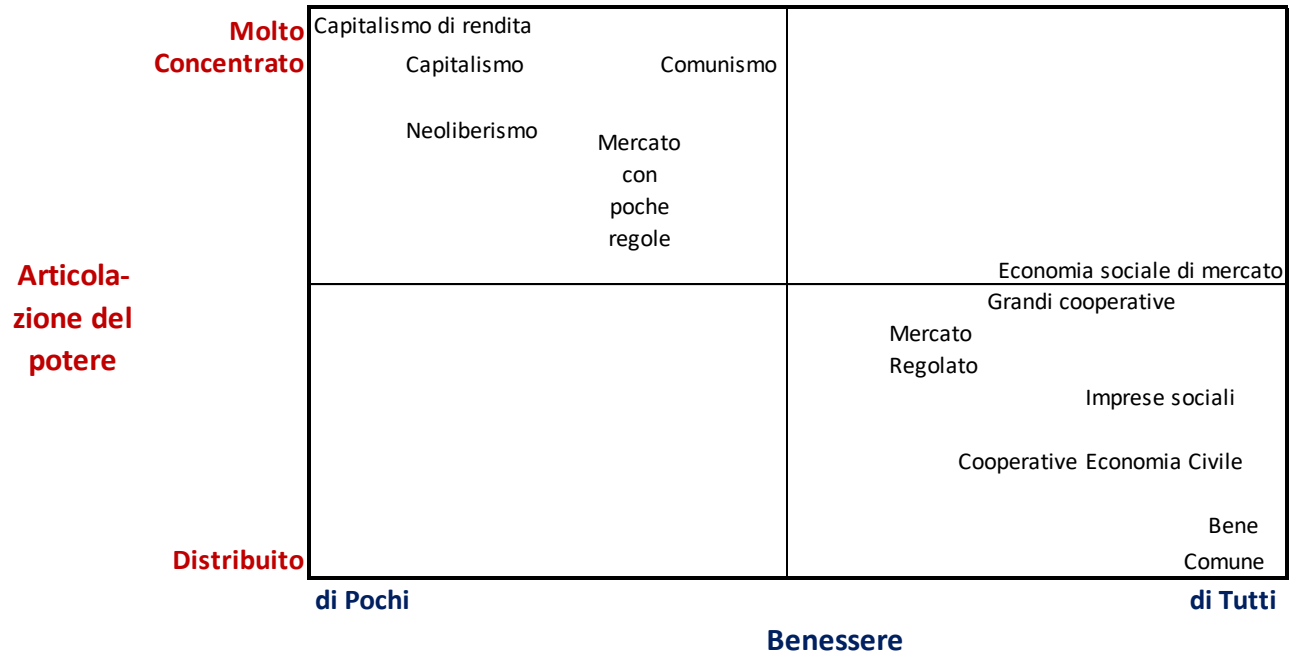
Finally, the U.S. economy has a low employment rate: unhealthy people cannot work, there are two million incarcerated people (up 6 times since 1970), and because there is no reliable family leave and child care, the employment rate for women remains low.

A good economy - concludes Stiglitz, and a ***harmonious society*** we say, needs ***trust, stability and security,*** instead of uncertainty, volatility and prevarication.

What kind of economy would we like to live in? Which economy serves men and women while respecting the environment?

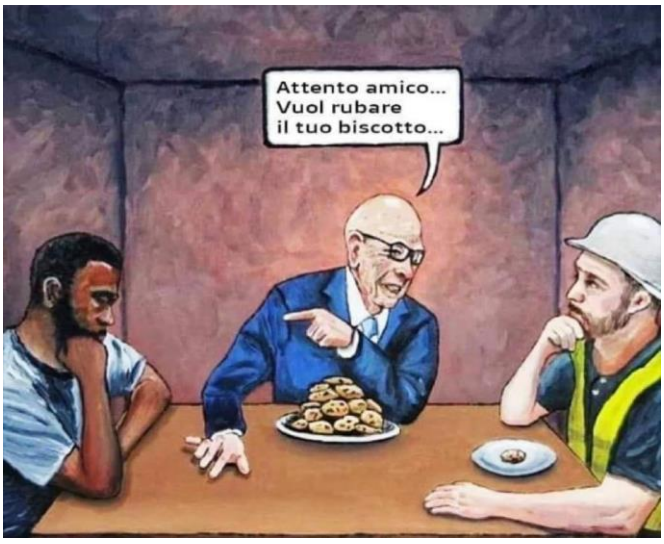
If we try to rank economic systems and different forms of enterprise, comparing the distribution of power with the spread of wealth, as in the matrix below, a strong correlation emerges between the distribution of power and forms of enterprise and economy that provide for different forms of participation, such as the social market economy and cooperative enterprises. Thus, the structure of the economic system and the forms of business also contribute to a harmonious society.

Classificazione dei modelli economici



3. Disharmonious society breeds populism

A disharmonious society generates anger and frustration in the excluded and people who feel marginalized, and this generates a social context in which populism and extremism and the denial of dialogue and listening thrive. Even the social condition of the dispossessed, due to the decentralization of production and the fragmentation of forms of labor, which leads to the decline of mass organizations, no longer finds comfort in commitment to parties and social movements.
It follows that these masses, fragmented and without references anymore, are victims of populist calls, which through social networks, divert attention from the real reasons for the problems they suffer, shifting the responsibility to other social groups, such as immigrants, who become scapegoats. The cartoon on the left effectively shows how this process is triggered.



"Watch out man…he wants to steal your cookie"

These distorting interventions do not make society more harmonious, but more conflictual, contrasting approaches based on inclusion and the pursuit of less inequality with new tensions, with the effect, in the meantime, of deferring addressing the problems at the root of suffering and injustice. A harmonious society, on the other hand, chooses to deal consciously with these

problems, knowing that they are complex and not easy to manage, and that they require an ongoing commitment over time.

4. The dimensions of social welfare

What are the dimensions of social well-being that lead to a harmonious society? Unlike the environmental dimension, which is easier to define and measure, the social dimension is much broader and more articulated because it concerns the different spheres of people's lives. However, it is important to try to define the different areas that lead to social well-being and therefore to a harmonious society, as I will try to do below by briefly examining the main issues.

Fairness: human beings rebel, in various forms from passivity to withdrawal to protest, when they perceive that they are treated unfairly and differently from others. In addition to pay equity (discussed below) and wealth rebalancing, people generally demand fair and respectful treatment in social relationships. We have already seen that an inclusive society with few inequalities is perceived as a happier and more peaceful.

Health: the protection of and access to healthcare beyond economic conditions is considered an essential aspect of serenity of life. The anguish of those who cannot care for themselves because they do not have the means to do so poisons their lives. Countries with universal healthcare systems that treat rich and poor alike with the same attention are considered happier, as we have seen for Finland.

Safety: safety at work, in society and in the family, which stems from attention to people's lives, is a very important component that contributes to the harmony of society. Often the perceived safety is different from the real one, and populisms feed the sense of insecurity in order to offload the problems on scapegoats: in Italy the crime rate has constantly decreased, but the perception that is spread by a pressing narration is that of a growing social danger.

Fair remuneration: fairness means equal pay for equal work, and pay differentials between different levels of responsibility that are not excessively high. The Italian Code of the Third Sector provides for a maximum pay gap of 1 to 8 between the lowest and highest gross pay of the organization (art. 16 of the Code) in order to remain an ETS (Third Sector Body) and enjoy the related tax and regulatory benefits. Obviously, huge gaps are disproportionate, such as those that occur in some multinationals, which reach gaps of 1 to 400 and more, unjustified whatever the capacity and performance of the top management are.

Gender equality: The gender gap stems from a patriarchal legacy that must be overcome as soon as possible, as it is extremely unjust and devalues half of society. The low levels of women's employment in Italy and the obstacles (clearly visible in their effects) to their proper placement and remuneration are one of the causes of the country's economic backwardness. Any positive action to achieve true gender equality is urgent.

Equal opportunities: everyone, regardless of personal ability, has the right to a dignified life, and everyone has some ability that can be useful to society. Therefore, positive actions for the social and work integration of people in difficulty are essential in a harmonious society.

Personal development: as Leonardo Becchetti says, three beautiful things in life are 1) Keep learning; 2) Be innovative and generative; 3) Invest in the quality of relationships. A person's dignity is rooted in his or her personal and human growth, as well as in their professional growth, which makes it easier for them to gain respect and esteem. Society, social organizations, the family and the world of work are the areas in which personal development is built.

Participation: the citizen differs from the subject because he or she participates in social life. A democratic society is the one that facilitates participation in all its components. Today, the issue of democracy and participation of workers in the company, already protected by art. 46 of the Italian Constitution, and also of other relevant stakeholders, is urgent. At least the Constitution requires prompt practical application.

Cultural identity: in an increasingly interconnected world where migration is a normal phenomenon, increasingly pluralistic societies can transform the condition of diversity into harmony, richness of experiences and points of view. But this requires a commitment to knowledge and a deep respect for different cultural identities and their specific needs and characteristics.

Sustainability of the supply chain: the harmony of a society cannot hold if there are other societies around it that are disharmonious due to the export/extraction of resources and skills from the dominant society. Equity throughout the social chain - and in economics also in the supply chain - generates balance in society.

5. The harmonic society involves...

Francesco Cicione and Luca De Biase[44] have proposed a very interesting paradigm that describes the context of Harmonic Innovation. Following this conceptual scheme, we can see how well it declines with the issues of a society that operates in harmony, with the different roles well coordinated and well mixed, according to the metaphor of the orchestra that succeeds in playing together producing a great result from very different contributions that come from different skills. This paradigm is also enlightening for the society that wants to be harmonious. In the following diagram, the different areas (in bold) are declined with the characteristics of the harmonious society (underlined), highlighting (in italics) which

[44] Cicione, F., De Biase, L., Harmonic Innovation. Un senso di Futuro, Rubettino editore, Soveria Mannelli, 2020.

characteristics a society that wants to be truly harmonious entails.

As we have seen when we discussed about the dimensions of social welfare, the ***method*** of the harmonious society to become choral requires an attitude of *respect, ability to listen, and cooperative approach*.

The ***context*** that makes a harmonious society possible requires a major investment in a community logic of *solidarity*, *support for the most fragile groups*, and *strong investment in education for all*.

The ***objectives*** of a harmonious society put the Common Good at the center and therefore require choices that take into account with *balance*, an *overall vision* of the society and its problems, which allows to reconcile the expectations of different components.

Quality comes from circularity, which implies *knowledge-based reuse choices*, with *participatory* processes for a true coordinated action.

Origin comes from the *awareness* that without *sharing*, and an approach of *generosity*, *friendship*, and *joy*, there is no harmony among the various components of society, and therefore no social sense.

The **approach is** certainly interdisciplinary, and comes from *culture*, *curiosity*, *attention to the complexity of* problems and life, thus requiring the joint intervention of different disciplines.

6. Let's change the goals of society and the economy

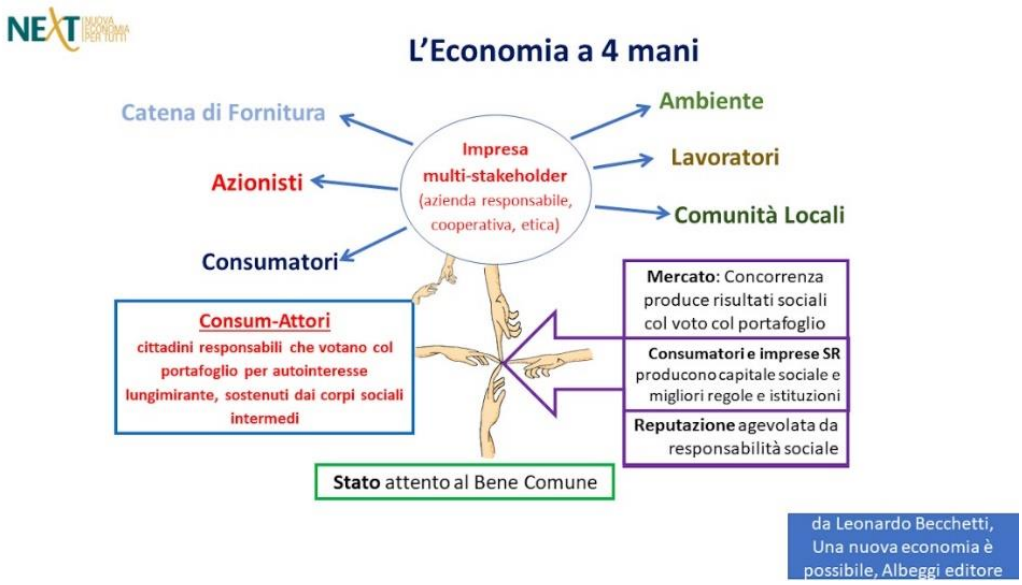
Our society is in serious trouble: in addition to the problem of inequality, there is the growing consumption of resources that jeopardizes ecosystem services, which are essential both for supply (of food, drinking water, materials, etc.), regulation (of climate and tides, water purification, pollination and pest control), and for our cultural values. With the quality of our lives, the foundations of a harmonious society and even the economy on which our income and well-being are based are affected.

Why does our society seem so incapable of responding to people's needs in life, and is the current economy experienced as unjust and oppressive? Because we are obviously unable to set ourselves the right goals. We cannot talk about a harmonious society leaving out the economy that produces the goods and services we need. Moreover, our working life is at least half of our vigilant life, and the relationships and tensions generated at work strongly affect the harmony of our social life.

The cause of disharmony is us. This is bad, but also good news, because if we want to we can change. The alternative is there. In order to rebalance our society, and consequently the economic system, and aim it at the well-being of all, it is necessary to **bring people and the Planet back to the core of** society and economy, because a just and sustainable economy – being aware that everything is connected and interdependent - reduces upstream the causes that generate both social injustice and human waste, and environmental degradation. This is also the purpose of the 17 goals of the United Nations 2030 Agenda, but also of the Index of Fair and Sustainable Welfare, now in Italy a mandatory reference for spending laws.

In order to move towards a harmonious society, it is necessary to change the economy. Leonardo Becchetti believes that in order to achieve an innovative and fairer economy, it is necessary to move from a two-handed economy based on the *State* that regulates (first hand) and the *Market* that produces (second hand), to a four-handed economy *(Fig. The 4-handed Economy)* that is more complex and articulated, with more distributed powers, where *responsible businesses* (third hand) are fundamental, spurred by a market of *citizen-consumers* (fourth hand) "consumer-actors"[45]. The latter, out of far-sighted self-interest, through *"voting with their wallets",* press from the shallow for true social responsibility, both by choosing products from responsible companies and by allocating their savings to funds and companies that pay attention to people and the environment. This brings out the market power of conscious consumers, eager to contribute to a more harmonious society.

This is the **New Economy**, the necessary prelude to a harmonious society that puts priorities in order. The New Economy moves *from the dominance of shareholders* (who want maximum profit) over all other stakeholders, to *a market economy based on attention and dialogue with all stakeholders* (shareholders, customers, workers, suppliers, environment, local community).



da Leonardo Becchetti, Una nuova economia è possibile, Albeggi editore

At the same time, this approach is becoming increasingly inescapable and favorable for the company, and is of great benefit to the society as a whole, but it requires overcoming the predominance of capital over all other stakeholders. The traditional company considers stakeholders only as a resource and a productive factor on which to make efficiency, even though, when necessary, it needs to manage consensus and negotiate tensions.

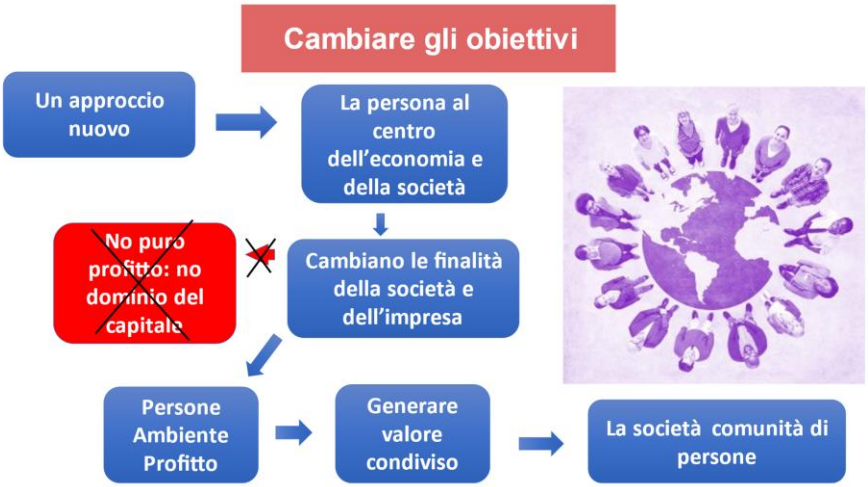
[45] Becchetti, L., NEXT, cit.

TAX AUTHORITY – PEOPLE – ENVIRONMENT
RESPONSIBLE CONSUMERS

Without the help of active and responsible consumers, attentive to social and environmental tax responsibility, as exemplified in the image on the left, and without awareness of the social role of business, companies tend to mediate with their stakeholders at the lowest possible cost.

The following graph highlights the ***active role of citizens for a more harmonious society***. The pressure from the shallow of citizens addresses both the emerging problems with *local social interventions* (as well as with the vote with the wallet), and *public policies by* asking for new rules that safeguard Common Goods, a social approach and to promote and nurture the sense of community and solidarity.

This approach forces society as a whole (and also the economic system) to change its culture, through the action of active citizens from the shallow; as far as the economy is concerned, this is supported by the awareness of responsible companies, which by changing the competitive logic, encourage and push other companies to become more attentive and sustainable.



The cultural leap required is a great one: it involves ***changing the goals of society and the economy***, in a perspective that is both new and old and is part of a long tradition of humanism. As shown in the last diagram "*Changing Objectives*", putting people and the environment at the center means changing

the goals of society and the economy. This means shifting the focus from the central power of money and individual interest - of *homo oeconomicus* - to generating shared value and value of good for all, with the logic of a society that becomes a cooperative community of people.

This approach uses all the declinations we have applied to the Cicione-De Biase paradigm to create real value and make an essential contribution ***to a more equitable society and a better life for all***.

Harmonic Finance

by *Ugo Biggeri*

1. **Is finance today harmonious?**

The concept of Harmonic Innovation is built around the imperative need for complementarity between "purpose" and "sense", between technique and ethics, between meaning and significance, between specialization and interdisciplinarity, between thought and action. Harmony therefore lies with the search for balance between different drives guided by a common vision.

Trying to apply this paradigm of harmonic innovation to traditional finance, it might seem at first glance that finance is already harmonic, by definition.

In fact, finance has a system of well-established rules and theories, a mathematics, sometimes elegant, sometimes complex, able to make interdisciplinary forecasts, to understand economic trends, people's choices, productive developments, or political directions.

Finance also continually finds balance through the meeting of supply and demand, the balancing of forces in the free market.

It is therefore capable of managing risk by assessing any type of uncertainty, whatever its type or sector, and relating it to a measure of financial risk.

So, it stands as a well-structured discipline capable of interacting with other disciplines.
Yet, as we shall see, harmonic finance is definitely more than traditional finance.
Therefore, in what ways can we critique traditional finance in order to propose harmonic finance?
Let's start by saying that Harmonic Innovation is first of all "sense", "integration" and "community": it means trying to go beyond one's own field of knowledge to find harmony with other knowledge and give a sense to the choices made and innovations introduced by looking at the community in a broad sense: people, society, environment, ecosystems.

Traditional finance in its interaction with societies and ecosystems has an approach guided exclusively by the preordained financial rules to the other ones. In particular, finance almost pursues a single strategic objective, that of profit maximization. A profit measured primarily in terms of individual interest in which the generation of shared value is secondary and not strategic. The environmental, social and regulatory contexts are considered as constraints within which to achieve this goal of individual profit: an external force that forces to find a new financial balance. Any social or environmental impacts, which are fundamental to harmonic innovation, are excluded from the financial assessment and, if present, relegated to a market niche.

Finally, some of the foundations of harmonic innovation cannot be met, such as, for example, multidisciplinarity or the ethical attention not to contradict the acquisitions of moral research. On the contrary, it could be said that there is still a "principled" detachment from moral issues that has its roots in the very birth of economics and, therefore, of finance in the academic sphere in 1800 when economic studies and teaching left the philosophical sphere to be considered an autonomous discipline (do not overlap magister).

Thus, we can argue that there is a wide research space for harmonic finance innovation to pass the scrutiny of the harmonic innovation evaluation assessment already shown in this volume and reported below for convenience:

> *Synthetic Assessment of Harmonic Innovation*
> *1. Is it an innovation that stems from multidisciplinary processes and expertise?*
> *2. Is it an ethical innovation that does not contradict the acquisitions of moral research?*
> *3. Is it an innovation that produces positive social and environmental impacts?*
> *4. Is it an innovation that springs from a "sense"?*
> *5. Is it an innovation capable of generating shared value?*
> *6. Is it an innovation that is universal in time and space?*
> *7. Is it an innovation recognized as good and useful by a broad community?*
> *8. Is it an innovation that fosters open and choral organizational models?*
> *9. Is it an innovation that favors circular models of valorization of "human" capital, technological capital, environmental capital and economic capital?*
> *10. Is it an innovation at the service of the development of an integral anthropology of the "human"?*

Concluding this first examination of the relationship between harmonic innovation and finance, we can observe that finance has always carried out its function of allocating financial resources (between surplus wealth and the need for investment) while also carrying out a function of "democratic distribution" of resources. Until a few decades ago, in fact, the financial system distributed resources mainly to entrepreneurial activities, or in any case legal to the real economy. This second function has strongly diminished in relatively recent years by moving financial resources into zero-sum markets, where no value is created (first and foremost the derivatives market), and moving it away from productive investments or investments for people.

Already in 1979, James Tobin (Nobel Prize for economics) had assumed the need for a tax on financial transactions (at that time we were thinking of the currency exchange market), to put some sand in the financial gears that kept resources away from investments in the real economy. Since then, resources invested in zero-sum financial exchanges have incredibly grown to become dozens of times the world's gross domestic product.

Today, finance is definitely one of the platforms on which the market operates with rules and practices that are not harmonious as we mean it here.

2. For a harmonic finance

That said, harmonious innovation in the financial world would have a formidable effect in driving innovation and change. Finance today, in fact, has a crucial value in our society and in providing economic means to any business or activity. A rethinking of finance according to the principles of harmonic innovation would trigger a doubtlessly positive and self-generating process of change towards sustainability.

The first step towards this innovation would be to regain some humility and consider the other academic disciplines on a par with economics and finance in being able to determine the strategic goals of economic activities as well.

It is obvious and out of the question that profit, or rather economic and financial health, is definitely fundamental to any type of activity, even non-entrepreneurial. However, alongside this binding objective, other strategic objectives can and must be managed for harmonious innovations.

To be clear, it is not just a matter of going back to "seeing" the non-economic effects of financial activities, but also of making decisions with choices that are not merely financial.

The experience of the global alliance of value-based banks and, as far as Italy is concerned, of Banca Etica, show that it is possible to effectively give financial activities an environmental and social purpose, while maintaining a healthy and prudent management that starts with attention to financial and non-financial risk aspects.

This alliance pursues a triple bottom line approach to its financial resource allocation activities by considering the effects on people, planet and prosperity.

These are areas towards which harmonic innovation works: society, ecosystems, economic sustainability.

The term prosperity deserves special consideration and is well suited to harmonic innovation. In fact, it is another way to define the generation of shared value. Compared to the term profit, prosperity has a more choral meaning, clearer than the well-being of a community or society.

Simplifying greatly, but to give a clear view of what harmonic finance could be, the radical change lies in maximizing prosperity versus maximizing profit.

In both choices the objective is financial and therefore the efficiency of the activities with respect to this objective, but in the second case the efficiency is reduced to the interest of those who have control of resources, while in the first case it is necessary to look at "the interest of all" (one of the initial slogans of Banca Etica).

This is a disruptive innovation with respect to how economic actions are evaluated, especially by policy makers who can and must direct the market with simple rules and disincentives that can encourage innovation and the efficient use of economic resources with respect to objectives of general prosperity of society.

In this sense, efficiency is one of the keys to harmonious innovation and to be implemented with respect to prosperity requires concreteness about what to measure and how to manage the inevitable choices that must be made to hold together strategic objectives that may generate potential divergent results.

The main management innovation in harmonic finance could be to set clear strategic environmental and social objectives for financial companies (and not only for products) that are consistent with the objectives of sustainable development. For example: the reduction of the use of resources or water, the reduction of climate-altering gases produced or, in the social field, attention to workers' rights, gender equality, or local communities.

Therefore, it would be necessary to set criteria and indicators with which to evaluate one's operations and investments on the basis of these objectives. There is no shortage of indicators today, and international standards are increasingly being defined to give them robustness: see, for example, the Global Impact Investing Network (thegiin.org) or the taxonomy proposed by the European Commission. Obviously, it is necessary to define which indicators can actually be measured and which are the most impactful for the sectors in which one invests. It is therefore necessary that these indicators are used to make decisions by management and therefore to report on their activities to stakeholders.

To ensure that these attentions and efforts do not remain in the realm of good intentions, it would be essential that these indicators are used in financial management and, above all, that they be the subject of internal control activities.

Financial activities have a strong tradition of effective internal controls, driven also by supervisory authorities. The system of internal controls is very pervasive with respect to management activities and moves hand-in-hand with them to ensure compliance with internal and external standards. This model reduces the risks of mismanagement and is imposed by the supervisory authorities in a much stronger way than in other economic sectors. Among the motivations for this activity is the protection of savings and the stability of the financial system. But the same system of controls could be used for no less important objectives of global interest such as, for example, tackling climate change.

The strongest innovation that could be generated by building harmonious finance concerns positive relational feedback with stakeholders and, in particular, with investors and savers, especially retail or institutional ones. The growing interest of public opinion in sustainability issues is leading to the idea that environmental and social responsibility is also implemented through consumption and savings choices. This idea of indirect moral responsibility in the economic field is gaining ground in many areas and is also clearly expressed in recent encyclicals that have inspired the idea of harmonious innovation.

Therefore, there is room for a positive interaction between harmonic finance and market opportunity, and this makes it definitely interesting to go deeper into this idea.

In conclusion, it might be interesting to add to the key word of harmonic innovation a concept that today seems outdated and was known in popular economics. And yet, it is precisely harmonic finance that could help us to think about this word, which is also a sort of manifesto of a different kind of finance.

The word is thrift and goes well with prosperity, even though it may seem counter-intuitive.

First of all, thrift entails the existence of a limit or a restriction. In today's finance it is a concept that has been lost, at least since the creation of money has been detached first from gold reserves and then, increasingly, from credits to the real economy. In general, the concept of limits is outgrown for global finance, especially if considered as a limitation by ecosystems or communities. Limiting the growth of finance to the sustainability of the planet is urgent, but it still seems like an unmanageable constraint, a limitation that would bring everything to a halt. Yet, economic history is full of limitations imposed by circumstances on economic activities that have generated innovation and greater efficiency (just think of the link between labor productivity and the

abolition of slavery or the recognition of workers' rights). In recent times, the global coronavirus pandemic has made us reach limits to which we were not used to, showing us that we were not prepared, with consequent suffering, but at the same time making cultural and social innovations that were unthinkable until recently flourish. So, recovering the idea that there are structural limits to manage could be very healthy and help the resilience of the economy itself.

Thrift indicates the ability to manage limited resources. The ability to manage risk. The ability to save money. Ultimately also the ability to plan for the future from adverse conditions.

So it is a concept that, in addition to financial resources, would apply well to natural or social resources.

Finally, thrift is not deprivation, but the ability to understand well how to produce prosperity even from scarce resources. And so, just as risk is the other side of the profit coin, thrift is the other side of prosperity. A change of perspective that would generate innovation for a change towards sustainability.

With a little harmonic finance it would be possible to.

Harmonic systemic organizations: activities, interactions and feelings

by *Saverio Mecca*

> "... although you have to have commissions, you have to make what you can out of the commission you get. And, you know, gradually people come to you to buy surprise and the thing that's nicest about it is that when people come to buy surprise I have no idea of what I'm going to give them either. It's not like I'am going out of my way to surprise them, I'm actually quite often surprised myself by what the outcome is because I'm a bit *like a hound following a fox*; I'm following something really close to the ground and I can't actually see where it's going. I've got my nose to the ground to make sure I'm following it properly."
> PETER RICE,
> *An EngineerImagines, 4 February 1992*

1. Preliminary remarks: thoughts on the project as a means for building new knowledge

A reflection on a harmonious vision refers us to a line of theoretical and operational thought that can be traced back to the vision and method proposed by systems theory, which has greatly influenced and shaped organizational thinking oriented towards the search for efficiency and effectiveness in human organizations.

I think a preliminary reflection on the organization that is more complex, more competitive, more inseparable from innovation is needed: the organization we call project.

In the words that conclude the book that Peter Rice wanted to leave us at the end of his project adventure, the project appears to us as a process of knowledge that we build while we act, while we decide: designing becomes *orienting the process of exploration, of construction of new knowledge*.

The project is not, with evidence, given. It is not something existing outside the subject, but it is his expression, it is a creative and structuring act of reality, it is an act of oriented knowledge that consists of objectives, constraints, limits and resources in search of a balance that is harmonious.

The knowledge that each of us can build of a reality is that of our own experience of reality. According to the expression of Gaston Bachelard, the real is not "*ce que l'on pourrait croire*", but "*ce que l'on aurait dû penser*", *had to think* rather than *could* think in order to allow us to separate knowledge from dream, the knowing act from the delirious act.

This knowledge grounded in experience, whether tangible or physically sensed, intangible or cognitively perceived, is knowledge if the subject ascribes to it some value of its own: a value whose definition cannot be said to be independent of the subject who knows .

In constructivist epistemologies, the value of objective truth or revealed truth is thus explicitly renounced, since it is agreed that for a knowing subject, the value of knowledge depends on his appreciation of the consequences of actions he processes.
This pragmatic criterion proposed by constructivism makes evident the **ethical option connected to all knowledge** and easily lends itself to the definition of any scientific research policy in rejecting the uncertain and illusory distinction between "fundamental" and "applied" knowledge (and disciplines) that positivist and neo-positivist epistemologies are at pains to identify.

In addition, the knowledge evaluated by the experience of the thinking subject must be accessible to him through the artificial mediation of representations built by the same subject with the help of a system of symbols. To this assumption on which all knowledge is based, which therefore does not belong in a strict sense to the constructivist paradigm alone, the following complementary assumption is added: representation "*builds*" knowledge, which in this way constitutes.

2. Operable representation and testable knowledge

The phenomenological response of the constructivist paradigm to the conceptual problem that the signification of the relation between knowledge and its representation poses to any epistemology makes explicit the *operational* feature of the notion of representation, along with the *experiential* character of the notion of knowledge.

The innovation is profound and full of consequences: the knowing subject does not represent objects, things, but ***operations***, ***interactions***, and the knowledge that he constructs through representations is itself operative or active. The inseparability of knowledge and representation, understood in their distinguishable activity, the intentional experience of the knowing subject and the tentative construction of the subject that represents knowledge, constitute the strong founding assumptions on which we can now more usefully define the knowledge we can teach, scientific and common, and which legitimize constructivist epistemologies.

Attentive to the phenomenon of cognitive experience, Piaget perceives the inseparability between the act of knowing an object and the act of knowing itself that the knowing subject exercises: this cognitive interaction between the object (or the phenomenon to be known) and the knowing subject forms at the same time the knowledge of the object (organizing the world) and the way of processing knowledge by the subject (intelligence organizing for itself) .

In this radical formulation, the phenomenological assumption associates the narrow conception of knowledge with an active conception: the knowledge that the subject builds through his experience simultaneously organizes the way of building said knowledge, or his intelligence. Within these assumptions one can no longer separate knowledge from the intelligence that produces it, and one must understand *knowledge as the process that forms it and as the result of this process of formation*. One does not know things per se, but the act by which interactions between things are perceived; one does not know a machine, a technological process, but the interaction between this machine, this process and its context, through the **interaction between the knowing subject and the interactive phenomenon**.

In attributing to the knowing subject the decisive role in the construction of knowledge, we must somehow assume and evaluate the *intentionality* or purpose of the knowing subject; in other words, acknowledging the intentional, and therefore finalized and finalizing, character of the cognitive act, it may be legitimate to attribute the same character to the knowledge built through

that act and agree that the *modeled phenomenon* is known as *finalized by the cognitive action of its representation .*

This problem of finalization, on which cybernetics and the systems theory have developed, has also been deeply analyzed by Herbert Simon. In a general sense, the teleological assumption, in the moment in which it postulates the existence of a more or less active cognitive system of finalization, leaves the problem of the forms of the activities of finalization that can vary in variety and cogency open and undetermined.

The important thing, as Simon and more generally the systems theory reminds us, is that the modeler, the knowing subject, the researcher take scrupulous care to make explicit and specify the purposes to which he or she claims to refer when building the teachable knowledge that he or she will examine and communicate. Associated with these phenomenological and teleological assumptions, on which constructivist epistemologies are based, are two methodological principles, the *principle of systemic modeling* and the *principle of intelligent action.*

3. The systemic vision for a harmonic project

The contemporary development of the practices as well as the methodological principles of the systemic vision appears to be so closely connected with the development of constructivist epistemologies that they can almost be considered as two sides of the same process, while they are autonomous and independent, even if the systems theory and its diffusion has somehow stimulated the emergence of constructivist epistemologies capable of giving answers to the epistemological questions posed by the systems theory starting from the observation of the behavior of living systems. Systemic modeling has thus found, in the decades following its formulation, epistemological supports in the dialectical constructivism of Jean Piaget, in the paradigm of complexity or method of Edgar Morin and even earlier in the paradigm of bounded rationality and artificial intelligence of Herbert Simon.

These elements in the decades since their formulation have in turn been influenced by the experiences and *teachable applications* of the systemic model in the most diverse disciplinary and interdisciplinary fields, from ecology to engineering and architectural sciences, organization, pedagogy, etc., scientific fields that easily use systemic modeling to pragmatically state and justify the scientific nature of their statements and communicate them.

The systemic modeling is presented almost under the same terms of the rhetorical formulation of the search for the topics of the speech, as in direct descent from the *Inventio* of classical rhetoric. It is a modeling that expresses the meditation of the object by the subject that always takes the form of project, of knowledge to act, to transform, a modeling that is both teleological (what project?) and phenomenological (what actions?).

Although not yet fully and consciously adopted, the systemic methodological principle is profoundly appropriate and fruitful for a designer's way of knowing, understanding, and acting: systemic modeling is profoundly different from analytical modeling in that it explicitly assumes the role of the modeler and his projects, privileging the modeling of the act over the modeling of the object, and that it initiates the modeling process not from the question "*what is it made of*," seeking to answer exhaustively and "closing" the model, but from the question "*what does it do,*

why," and thus seeking the identification of some function without claiming exhaustiveness, without exhausting the possible senses that will be recognized to the modeled phenomenon.
Edgar Morin with the text "La méthode"[46], gave to the systemic modeling its conceptual system, highlighting the **ethical necessity and the reflective intelligence on the cognitive act** that we can perceive and evaluate through the exercises of modeling complexity to which we are continuously pushed by both scientific research and civic sense, a permanent and intentional modeling of phenomena that we perceive complex and therefore intelligible, or active, functioning and self-transforming, finalized or self-finalized in environments consisting of processes.

In this way, the methodological instrumentation belonging to constructivist epistemologies proposes to us a definition of systemic modelling that may appear conceptual, even if not more so than that proposed to us so far by positivist epistemologies, but which is certainly richer in knowledge tools, in its non-exclusion of any representation among those capable of expressing "scientific" knowledge.

4. Intelligent action to compose cognitive dissonances

The "*principle of intelligent action*", which allows us to symbolically express the second characteristic of constructivist epistemologies, is defined by Newell and Simon[47] to characterize the capacity of a cognitive system that explores and builds, "*enquiring*", the symbolic representations it deals with. This definition is taken up by J. Dewey who designated as "*intelligent action*" the cognitive process by which the spirit builds a "*representation of the dissonance it perceives*" between behaviors and projects (the identification of the problem) and tries to come up with some response or plan of action capable of restoring the desired consonance (the solution of the problem), and placed it at the center of his open conception of logic, not reducible to the formalization of syllogistic deduction.

The principle of intelligent action tells us, then, that human reason can, in a reproducible way, elaborate and transform intelligible representations of dissonance-consonance phenomena that it perceives, representations that allow it to invent responses in forms of "intelligent actions" or "adapted actions" capable of eliminating cognitive dissonance. The cognitive process deployed, often according to hesitant procedures, alternates between the provision of adapted means and intermediate ends, which suggest new means that evoke new possible ends.

These ways of dialectical reasoning privilege the examination of previous experiences that provide them with reserves of usable heuristics, always selected according to a criterion of feasibility, of heuristics that will take the form of abductive reasoning, without therefore being constrained by requirements of formal truth. A space is opened to heuristics capable of exploiting the extensive resources of retroductive and transductive reasoning, cultivated for many centuries by rhetoric that exploits the syntagmatic and paradigmatic deviations authorized by the complexity of the games of form and sense, from "wordplay" to metaphor, and of the schematizations of knowledge thus constructed.

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[46] MORIN E., *The method*, Feltrinelli, Milan 1983

[47] NEWELL A., SIMON H. A., (Turing Lecture n°75), *Computer science as an inquiry: symbol and search*, in: Communication of the ACM, vol. 19, n°3, pages 113-126, 1976

5. The systemic vision of an organization: from activities to feelings

To go more into the topic of the systemic and harmonious vision of processes and organizations we can take as a reference and guide the model proposed by Seiler[48], which in its simplicity has had considerable influence in organizational studies, identifying as theoretical assumptions both school of Human Relations and the Systems Theory, and is based on some basic systemic concepts, such as: system, hierarchy of systems, environment, dynamic balance of systems, input output process, feedback, functional relationship.

An organizational system is defined as a complex system in which each part depends on all the others, in such a way that any change in one part reflects on the whole system producing a change in all the other parts. This statement has a strong methodological value, strictly systemic in overcoming classical deterministic-causal models of the production system, but it is difficult to apply from an operational point of view, if not integrated with other concepts.

This first concept of system is thus flanked by the concept of hierarchy, thanks to which it is possible to represent a complex system as an articulation in systems of progressively lower rank according to one or more operators. It is therefore possible to replace the verbal representation of complexity with a scheme in which the relations that connect each elementary unit to the others that belong to the subsystem are represented, then the relations between subsystems of lower rank that belong to the same subsystem of immediately higher rank, up to the maximum rank coinciding with the boundaries of the system.

The reality located outside the boundaries of a system is defined as the *environment* of the system with which the system continuously exchanges and therefore is interrelated. The quality of the environment and in particular its dynamism stimulates the system to seek new conditions of exchange, of necessarily dynamic balance. The ability of the system to respond to continuous stress is not natural, but the result of continuous decisions aimed at controlling the behavior of the system in relation to the environment, which tend to be counteracted by homeostatic behavior.

A system is made up of several interrelated variables: the quality of the relationships therefore becomes an important cognitive and planning parameter.

Seiler introduces the qualitative attribute of *functionality,* an attribute that we can associate with the concept of harmony: each variable can be functional in relation to another variable if it favors it, otherwise we can say that it is dysfunctional. Each variable can be both functional for some and dysfunctional for others at the same time: to Seiler, the perception and analytical examination of the relationship of functionality between variables is the determining action for managing the systems (design and control), **the composition of the different dimensions of an organization is in fact a search for harmony.**

What interests us about a system, an organization is therefore the behavior. The dynamic relationship can be divided into three interdependent aspects:

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[48] SEILER J. A. *Systems Analysis in Organizational Behavior*, Richard D. Irwin, Homewood, Ill. 1967, translated in Italian: *Analisi dei sistemi e comportamento organizzativo*, Etas Libri, Milan 1976.

- ***Activities***, which are the most obvious aspect of behavior, as individuals act within the system.
- ***Interactions***, since individuals often act in relation to the actions of other people: interactions are proportionally more important in relation to the physical proximity of workplaces and the division of labor among individuals.
- ***Feelings***, which individuals develop "about what they *are doing, about what is being done to them and about the people they are with. These feelings are closely related to each individual's personality*" and "*different aspects of the technological, organizational, and social environment tend to develop different feelings in relation to each individual's predispositions.*" [49]

The three aspects of behavior are not easy to distinguish and together they interact and determine the results obtained, which can be measured and expressed with three units of measurement: productivity, individual satisfaction, and individual development of the group and the system.

As we can easily understand, of the three aspects of human organizations of any nature and complexity, the decisive one, the one that **feeds a system with energy, backs its dynamics, its evolution, the reason why it evolves, is the aspect of feelings**: above all sustainability, in particular environmental sustainability, the decarbonization of human activities, the care of life in all its forms on the earth.

If it were only a technical or economic issue it would be one of the many options proposed to individual and collective decisions, but it is not and has not become so. Today this is perceived in an increasingly shared and dramatic way because it is associated with the deepest feeling in Western culture and beyond, the feeling of giving our children, the generations that will come after us a better life that will only be possible in a better world in which all life is preserved and cared for.
In planning, in innovation, in politics itself, we must find the ability to be guided and **propose the sense of what we do**, that is, a feeling that can be the reason for our actions. **On feeling only can we build consensus, which is nothing but con-sentiment**.

[49] SEILER J. A. , *ibid*, p. 30

Towards the Harmonic City

by *Valerio Barberis*

1. Prato a vision: *Urban Agendas* as a tool for sustainable urban policies

Prato is a vibrant, contradictory, innovative, conflictual city: a city that, since the beginning of the 20th century and in particular since the second post-war period, represents a formidable urban, social, cultural and economic laboratory, in which new models have often been experimented.

Prato is an ever-changing reality.

Prato is a contemporary city, it is the city of contemporaneity in Tuscany.

The City Council, in its strategies of local development, since 2014 has been pursuing a clear vision of the city that aims to characterize Prato as a place of contemporaneity, a place where the signs of the past and those of today find new forms of dialogue, the "traditional" economic sectors of the city with the frontiers of digital, artificial spaces of the built environment with nature. Prato, therefore, which is able to decline in an even stronger and more concrete way its contemporaneity as a city of textile fashion, visual and performing arts, a city of coexistence of multiple ethnic groups, a city of new economic sectors, a city of circular economy, a city of experimentation of urban practices of recycling, a city of innovation in the training of young people, a sustainable industrial district, a city of experimentation of new forms of urban agriculture: a city that confirms its vocation for innovation.

Prato with its 194,793[50] inhabitants is the second largest city in Tuscany and the third largest in Central Italy in terms of number of residents.

Prato is famous worldwide for its textile district, which accounts for about 3% of European textile production, making it the most important district on the continent. It counts over 3,500 companies in an industry at the service of the big fashion brands. The strategies of the textile district over the years have led to choices directed towards sustainability as the main watchword and focus on strengthening and research and development in the traditional sector, that is textile production that starts from the reuse of old disused clothes, making it the most important sustainable and circular textile district in the world.

Alongside the textile district, since the '90s the fast fashion district has grown, with over 4,000 clothing companies, making Prato a leader in Europe and a reference point for large-scale retail trade.

It is a city where many cultures live together, more than 130 different ethnic groups and that, with contradictions and problems, integrates different knowledge and lifestyles. Prato is the symbol of a multicultural dimension.

Prato also has a great tradition in innovation not only in its manufacturing production but also in

[50] http://statistica.comune.prato.it/?act=f&fid=2706

the experimentation capacity of local government in services delivered to citizens, thanks to the possibilities offered by the information technology and new organizational methods.

Since 2014, the City Council of Prato has promoted a debate at the national level, on a political and cultural level, on the need for an overall renewal of the governance tools of Italian cities. Starting from the recognition of the strategic role that urban areas have at the level of the country system in relation to sustainable development strategies, the city has outlined an overall vision of the city, extending the reflection on the role of Prato within the Florence - Prato - Pistoia metropolitan area and, more generally of Central Italy and on a national level.
For the definition of the medium-long term vision, the Administration uses two Urban Agendas: the first approved in 2015, ***Urban Agenda for Prato***[51] *,* was the basis for all choices on urban and territorial policies of the 2014 - 2019 administrative mandate and outlined the strategies for sustainable development in relation to the priorities of the *17 Sustainable Development Goals - SDGs* and the *Urban Agenda for the European Union;* the second approved in 2020, ***Prato Urban Agenda 2050***[52] , defines the strategic positioning of the city in relation to the global competition on green & circular cities and strategically integrates the vision of the city within the priorities on which the Next *Generation Europe* and the *European Green Deal* programs are based.

The two documents of the Urban Agenda develop an overall project for the city, starting from the analysis of the peculiarities of Prato and integrates them in the global competition among territories, in particular that which sees in green and circular cities the major drivers of development for the future of nations: a competition that takes place in the field of innovation, digitalization and new economic models based on the centrality of environmental and social issues.

The Urban Agendas promote Prato as a city of contemporaneity in Tuscany. These are therefore the grounds on which to define actions and programs for the development of its socio-economic sectors, in particular the textile district. This support strategy outlined with intangible actions and new models of governance is flanked by the *Strategic Urban Areas*, that is, urban districts on which to develop a coordinated planning of urban regeneration projects and public interventions, which should be understood as the physical actions in which the narrative of the contemporary city takes the form and, at the same time, functional tools to achieve the more general strategies of sustainable development.

Agenda Urbana per Prato and *Agenda Urbana Prato 2050* thus promote a model of integrated urban and territorial policies in which the intangible actions of support to the economic, social and cultural sectors of the city are associated with specific physical places deemed functional to speed up the processes of innovation, social inclusion, environmental transition and circularity.

Since 2014, the City Council has promoted a vision that based the city's strategic positioning on 4 main pillars:
- Environmental transition, promoted in the Prato Green Deal program
- Circular transition, promoted in the Prato Circular City program
- Digital transition, promoted in the Prato Smart City program
- Social inclusion and the city of rights.

[51]http://allegatiurbanistica.comune.prato.it/dl/20151118124227452/atto_di_indirizzo_PS_PO_1.pdf
[52]http://pubblicazioneatti.comune.prato.it/doc/prato/CC_2020_0000080_2.pdf

Alongside these, it has developed a transversal and specific action in relation to the traditional economic sector:
- Support for the Prato textile & clothing district.

The acceleration towards new socio-economic models and the new scenarios that have opened at European and international level following the Covid-19 pandemic crisis, have triggered a phase of deep reflection and awareness of the need for a renewed vision tool for the city. As a natural evolution of the debate triggered since 2014, in December 2020 the City Council approved the new vision document, called the *Agenda Urbana Prato 2050* (2050 Prato Urban Agenda) which introduces for the first time in an urban planning document the paradigm of Harmonious Innovation in the founding principles, as a value, operational and impact assessment basis in the medium and long term.

A challenge between territories has opened up on a global level, based on innovation, environmental and social sustainability, which will see different models of development in opposition: Italian cities will be able to represent places of experimentation and reference for new models if they have the ability to promote the hallmarks on which they are based, that is, the intimate and inseparable relationship between territory and social, cultural and economic dimensions.

La Pira said: cities are alive. "They have a characteristic aspect and, so to speak, their own soul, their own destiny: they are not occasional piles of stones, but they are the mysterious dwellings of men and, I would like to say more, somehow the mysterious dwellings of God."

La Pira's quote expresses the exceptional nature of Italian cities: why are fabrics produced in Prato? Why tanning in Santa Croce and paper in Lucca? Why trees in Pistoia and gold in Arezzo? All these questions, which concern only a few cities in Tuscany but which can be extended to all regions, are underpinned by a dimension that is absolutely typical of Italian urban areas, based on the relationship between territorial resources and socio-cultural skills that, over time, have shaped physical and social space in an indissoluble way. The outcome of this *natural evolution* is represented by the Italian industrial, artisan and agri-food districts as socio-economic models, which are based on the cultural identity of the territories, build widespread and shared knowledge, develop models of zero-km production and distribute resources at a local level, generate productive symbiosis and models of circular economy: the challenge ahead is to project the socio-economic dimension of the districts into the global competition of digital and environmental transition, maintaining and strengthening the dynamics of social impact on which they are based.

This is the framework from which the *Agenda Urbana Prato 2050* was born, a new vision for the city that reinterprets the strategies developed since 2014 in terms of Harmonic Innovation, as in a extraordinarily and surprisingly consistent manifesto a posteriori, and reintroduces them in the challenge that looms at the global level, promoting Prato as Harmonic Green & Circular City.

2. Prato as Harmonic Green & Circular City: taxonomy of the harmonic city

2.1 - Nature as the new center: Prato Green Deal

Cities are the biggest contributors to the ongoing climate emergency, over 70% of climate-changing emissions are produced in urban areas.
Particularly in European cities, the urban suburbs built after the Second World War until the 90s of the twentieth century, that is the largest percentage of buildings in Europe, were built without any sensitivity to sustainability issues, representing, therefore, the major issue from an environmental point of view, as well as the quality of the urban landscape, social and spatial inclusion.

Prato, a laboratory on the relationship between man and nature
Prato has had a peculiar urban evolution: until 1950 the city can be represented as a medieval historical center, with its walls intact, located on the slopes of the pre-Apennine system of Calvana, lapped by the Bisenzio river to the north and immersed in the agricultural landscape of the Florentine plain, dotted with dozens of small hillside villages and towns, each with its own social identity, historical buildings and squares of aggregation. San Giorgio a Colonica, Paperino, Tavola, Iolo, Grignano, Cafaggio, Fontanelle, Galciana, Sant'Ippolito, Coiano, Santa Lucia, Figline, la Querce, la Macine, Mezzana, are the names of some of these villages, called "frazioni" (districts) in Prato. Some toponyms derive from the Etruscan period and what is significant is that studies on the human activities of the plain have shown that their location, in addition to deriving from the Roman centuriation, coincided with the outcrops of the water table, outlining a historical relationship between water and man that in Prato, since the year one thousand, has given rise to extraordinary territorial infrastructure of canalization for the exploitation of hydraulic energy, the system of Prato's gore, which lays the foundations of the textile tradition of the city.
Between 1950 and 1970, the city grew from 75,000 to 150,000 inhabitants, becoming one of the largest textile districts in the world.
Prato does not follow the model of other cities, the urban sprawl, which expands the built-up area starting from a single historical center, producing increasingly large concentric suburbs, but it develops according to a polycentric model, with respect to which all the historical centers, the major one and the villages expand: in some portions of the territory the built-up fabrics connect, while in others the agricultural landscape remains intact. The polycentric model of Prato has therefore generated an extremely dense urban fabric in the built-up parts, which include ancient settlements and modern fabrics, interspersed with large unbuilt free portions, generating an urban landscape suspended between built-up areas, agriculture and nature.
The current image of Prato, therefore, draws its origins from the historical dynamics of the human activity of the territory, based on the polycentrism of settlements, which still defines the urban and social landscape of the city: a territorial structure that has demonstrated, even during the building boom between the 50s and 70s of the last century and in the subsequent expansion phases, an extraordinary *resilience* and ability to generate a socially inclusive urban model, which preserves the cultural identity of the villages, allowing to ensure local services and above all that maintains within it large natural and agricultural areas.

Urban planning and the centrality of environmental issues
This arrangement makes Prato an ideal laboratory in the definition of new urban paradigms that put nature at the center in order to face the challenge of the climate emergency with strategies of resilience, urban forestation and above all that rethink the role of nature in the city as an active tool for human health.
The planning of the city has been set on the model of landscape urbanism[53], which overturns the traditional urban planning concept: the city is an interconnected network of areas, lines and green

[53]Cattaneo, E. C. (2019). Foreword. in V. Barberis & E. C. Cattaneo (Eds.), *Prato Fabbrica Natura* (pp. 12-17). Milan: Skira.

poles that build a real green territorial infrastructure that incorporates built islands, in which to develop strategies for reuse and circular economy paradigms on the urban scale.
The urban planning document, the *Piano Operativo Comunale*[54] (Town Operational Plan), adopted in September 2018, promotes an systematic project that aims to generate an environmentally active behavior of the city as a whole: urban areas must equip themselves with integrated urban and environmental planning tools with the aim of radically changing their impact and becoming the protagonists in addressing the global climate emergency. Cities, from places that generate causes, must become places that generate solutions to environmental problems, through strategies of resilience and urban forestation.

Urban forestation and city resilience
The Prato Action Plan contains the document *Strategie per la Forestazione Urbana*[55] *(Strategies for Urban Forestation), which* consists of two sections: *Green Benefits – Analisi dei benefici del verde urbano di Prato* (*Green Benefits - Analysis of the Benefits of Urban Greening in Prato*), developed by Pnat, directed by Stefano Mancuso and the second, *Prato Action Plan per la Forestazione Urbana* (*Prato Action Plan for Urban Forestation*), developed by Stefano Boeri Architetti. The first section analyzes the environmental benefits - pollutant removal, carbon dioxide interception, reduction of runoff, energy savings - of publicly owned trees, i.e. a limited portion of the trees present in the city, providing systematic and geo-localized data that unequivocally demonstrate the environmental impact of tree-lined areas at urban scale. The second section, starting from the environmental project of the Operational Plan and the data provided by Pnat, outlines a comprehensive strategy at urban scale, projected to 2030, for the planting of 190,000 new trees: an action plan that consists of 6 scenarios - river and gore park, green infrastructure mitigation, capillary green, peri-urban agricultural gulfs and large parks, urban demineralization, agricultural park belt - that promote a multi-scalar process and planned over time for the construction of the green city.

Urban forestation and human health
The Operational Plan, together with the Strategies for Urban Forestry, builds a unitary project for a green city that interprets nature in the city as a real territorial infrastructure: an active tool in the face of the climate emergency, environmental issues, to which assign a new role in improving the health of citizens. Nature in the city takes on the role of a tool for health prevention, which starts from the instances of the WHO Toronto Charter, according to a new motto: *a tree instead of a pill*.
The Prato Operational Plan promotes, at a political and cultural level, a paradigm shift in which urban and environmental planning are associated with health planning, assuming as an objective, or rather, as a moral imperative, that of generating healthy cities that bring nature back to the fore for the psycho-physical health of citizens. A framework that results in the prospect of creating and managing with health welfare resources, urban green areas designed and monitored on the basis of specific indicators for the purpose of health prevention.
For these reasons, the Prato Operational Plan is considered the first document in Italy in which urban planning is directly associated with human health.

Urban forestation and smart cities
The Urban Forestation Plan is implemented through the *Prato Forest City*[56] program, which encourages the involvement of the city in all its socio-economic components in the sharing of the

[54]http://www2.comune.prato.it/piano-operativo/
[55]file:///C:/Users/a024/Downloads/01.1_Relation%20forestation%20urban%20(11).pdf
[56]https://get.treedom.net/prato-forest-city/

city's green vision, through communication strategies, training, participation and codesign. Alongside these environmental awareness actions, Prato Forest City promotes crowdfunding and private financing activities for the implementation of urban forestation.
Prato Forest City is a program with a data-driven approach: under an agreement with the Laboratory of Bioeconomy of the CNR, the city is constantly monitored on environmental aspects through the management of satellite data from the European Sentinel program and with periodic hyperspectral flights carried out by the Italian Space Agency, promoted by the Tuscany Region, which provide data on tree coverage, heat islands and air quality. In addition to these data, 30 sensors have been installed in the city to acquire localized and dynamic environmental data, as well as a device positioned in the center of the city in order to collect an overall data on CO2 emissions in the urban area and detect changes over time. All these data will flow into a digital twin of the environmental behavior of the city, outlining a model of governance and urban and environmental planning, in which the policy maker will have at his disposal detailed data localized and distributed in the city and tools for monitoring and evaluation of planning choices in the medium to long term at the whole urban scale. The challenge of digital and environmental transition will have to be implemented in the cities with new integrated models of governance based on the development of digital twin, in which urban, environmental and health planning are interconnected through the digital and monitoring tools of the smart city, in a holistic vision that focuses on the needs of nature and man.

City and nature healing
Prato Forest City aims to delineate an arrangement in which the large urban green areas, namely the natural axis of the Bisenzio river, the nature reserves of the pre-Apennine slopes and the inclusions of agricultural landscape within the urban fabric build a green territorial framework, in which to develop forestation strategies, in the logic of promoting healthy lifestyles and especially health prevention with the Local Health Authority: an urban model that organizes an interconnected infrastructure of green areas for the purposes of the actions of natural therapy.

"The physician heals, Nature makes well," said Aristotle.

The city is interpreted like a network of *therapeutic gardens,* which starts from a main structure of large green and natural areas that branches out penetrating the urban fabric in an increasingly capillary way until it reaches the small pocket gardens, school and condominium gardens. A natural infrastructure monitored through the instruments of the smart city, in which to generate a harmonious integration between the deep needs of man and digital health programs, made possible by the new potential of 5G technology.

Urban forestation and community
The implementation of Prato Forest City foresees the involvement of the city in all its components: urban forestation must become an asset and a goal of the community.
Nature takes care of the city and, in turn, the city must take care of nature, finally recognizing that man also, or rather, especially in the urban environment is part of a complex and delicate ecosystem of which we must know how it works, restore the relationships and understand the mutual benefits.
Prato Forest City therefore promotes environmental awareness programs dedicated to citizens through activities in schools, museums, and sports areas, with the collaboration of the third sector, large-scale retail trade, and the network of local stores, as well as specific programs in synergy with the Local Health Authority, the local network of the Health Society and with specific actions in the

city hospital, Santo Stefano, where the relationship between nature and health can find extraordinary forms of application both in relation to patients and healthcare professionals.
The objective is to organize governance and financing models in which urban green areas, both public and private, are treated equally, outlining new forms of public-private partnership. In this context, a specific activity is dedicated to promote urban forestation programs as a decarbonation strategy for the textile district: trees in the city become functional to the sustainability strategies of the manufacturing sectors, developing urban policies that concretely build models for the environmental transition of the industry, that produce competitive advantages for the economic sectors and introduce the principle that CO2 must be intercepted and compensated where it is produced.

Nature-based solutions and the environmentally active city
As part of the reflection on the role of natural areas in the urban context promoted by the Operational Plan and the Urban Forestation Plan, the City Council of Prato has developed the project *Prato Urban Jungle -PUJ*[57] , which has been funded in the fourth call of the *Urban Innovative Actions - UIA*[58] program on the topic of Nature-Based Solutions and Sustainable Land Use.
The PUJ project has contributed in a decisive way to draw international attention on Prato and to make it come to light as a city able to promote innovative urban and environmental policies: the partnership coordinated by the European Department of the City Council of Prato, involves the start up Pnat directed by Mr. Stefano Mancuso, Stefano Boeri Architetti, the Institute of BioeEconomy - IBE of CNR, Legambiente, Estracom, Treedom, Green Apes and Codesign Toscana.

PUJ addresses a crucial issue for the European urban areas, namely how to intervene in dense built-up areas, to give them a new role in urban environmental strategies and to include them within the more general issue of the vegetation of cities. The concept of Urban Jungle, developed by Stefano Mancuso and Stefano Boeri, promotes a new urban paradigm that sees the existing dense neighborhoods as potential places to invade with intensive renaturation programs, through the use of Nature-Based Solutions, according to a data driven model based on environmental data coming from a system of sensors located in the areas of intervention. The project also provides for the involvement of citizens through co-design from the early stages, in order to share strategies, objectives and identify formulas for the management of shared green areas between the public institutions and citizens involved.

PUJ promotes a vision that transforms the existing dense city, especially the suburbs built after World War II, from areas that cause environmental problems, to active tools to increase urban resilience and to improve the environmental conditions for the purpose of the health of citizens: experimentation.

Therefore, since 2014, the city of Prato has promoted a vision that has placed nature at the center of its medium-long term planning, developing, at the same time, symbolic projects to be implemented in the short term to make citizens understand the green turn with tangible examples: the *Central Park of Prato*[59] *,* the new green lung in the historic center that will stand on the former hospital building; the *Riversibility*[60] river park project*;* the new *Parco del Soccorso*[61] obtained

[57]http://www.pratourbanjungle.it/it/pagina893.html
[58]https://www.uia-initiative.eu/en/uia-cities/prato
[59]http://www.ilparcocentralediprato.it/
[60]https://www.cittadiprato.it/IT/Sezioni/518/Riversibility---Parco-Fluviale/

thanks to the undergrounding of the city's busiest thoroughfare; the *100 Piazze*[62] program for the renewal of public spaces in the historic center and the districts; the new network of routes dedicated to sustainable mobility; the program of new sustainable school buildings and many other projects have configured a general action that today makes us speak of a real *Prato Green Deal.*

A new *urban destiny is* looming: botany is destiny [63].
Cities must face a radical change in which nature takes on the role of a new local infrastructure that starts with integrated urban, environmental and health planning, whose beneficial effects on the environment and human health are constantly monitored through the processes of the smart city and the digital twin and that involves the sharing and involvement of the community in its construction.
It is important not to lose sight of the deeper meaning of this turning point.
All these activities, in fact, must be driven by a very simple inspiration: to regenerate a harmonious relationship between man and nature in the cities, to build healthier, sustainable and, in the end, more beautiful places to live.

2.2 - The city as circular metabolism: Prato Circular City
Prato is a paradigmatic place of circular economy at European level[64] .
The Prato Textile District for hundreds of years has based its main production on the recovery of "rags" and thanks to the expertise gained over time in the industrial sector, the practices of reuse have become an integral and essential part of the identity of the city, building a socio-economic fabric with extraordinary widespread, shared and, very often, unconscious skills that have led the city to coordinate the participation of Italy in the Partnership on Circular Economy[65] under the Urban Agenda for the EU.

Prato, the symbol of circular economy
For over 200 years, the Prato Textile District has been producing textiles from the recovery and reuse of discarded clothing: an expertise that has allowed the development of technologies and processes capable of regenerating any fiber, which, in addition to representing an ancient industrial tradition, today represents a strategic asset of great importance for the future of the district. Every year, 220,000 tons of rags are recycled in the Prato Textile District[66], making it the most important textile recycling center in the world. The rags are once again used as fabrics for the fashion industry, identifying Prato as a fundamental manufacturing district for the green, sustainable and circular turnaround of the global fashion system.
Starting from the skills developed for the fashion industry, the district over time has also oriented its research towards other sectors where textile technologies of reuse have been used with significant results, such as construction, furniture, automotive and interior.
In Prato, the district skills of textile waste recycling have represented over time a sort of socio-cultural paradigm, a collective and inclusive DNA, in which these practices have become part of all the dynamics of the city, such as the reuse of the urban and building fabric, the reuse of water and the forms of collaborative economy promoted in the social sphere.

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[61]https://www.comune.prato.it/it/muoversi/viabilita/sottopasso-soccorso/pagina242.html
[62]https://www.cittadiprato.it/IT/Sezioni/113/I-nuovi-spazi-pubblici/
[63]Cattaneo, E. C. (2019). in V. Barberis & E. C. Cattaneo (Eds.), *Prato Fabbrica Natura* (pp. 145). Milan: Skira.
[64]https://circulareconomy.europa.eu/platform/en/good-practices/car-city-governance-prato
[65]https://ec.europa.eu/futurium/en/circular-economy
[66]https://astrirecycling.it/

It is no coincidence that Prato was the birthplace of the first theater in a factory, the Fabbricone Theater[67], built in 1974 as part of the experience of Luca Ronconi's Laboratorio Prato[68], or that many of the city's most important cultural and public institutions have been created over the years by recovering old abandoned industrial factories, such as the Polo Culturale Campolmi[69], which houses the Lazzerini Library and the Textile Museum[70], or the Chamber of Commerce[71] of Prato, anticipating an action of urban regeneration and recovery that is now a current practice. These public examples, together with urban planning policies aimed at reuse[72], have encouraged the private sector in the recovery of existing buildings, especially industrial and artisan ones, promoting circular economy practices at urban scale and innovative governance models[73].
Starting from the 80's of the 20th century, the city of Prato, the City Council and the Industrial Association, have invested in an innovative system of treatment of civil and industrial wastewater, which is conveyed to a single purification plant managed by the company Gida spa[74]: from the plant, after several treatments, in addition to those that are normally carried out, the water is fed into an industrial aqueduct[75] that supplies the artisanal and industrial areas of the city, becoming a model of sustainable and circular reuse of water. The network of the industrial aqueduct, which extends for over 46 miles, is a one of a kind in Europe and has made it possible to ensure the supply of water-greedy companies of the textile district (dyeing plants, finishing, etc.), making it an alternative source of supply essential to preserve the groundwater and ensure its use for drinking.

The city as a circular metabolism
Prato, therefore, is a territory in which the circular economy is a daily practice in the manufacturing sector, in the water cycle, in urban management policies and in the collaborative economy models that pervade the social dynamics of the city, joining those European cities that are promoting the circular transition of their socio-economic processes and promoting, together with them, the role and centrality of urban areas in the transition towards the circular economy of the states.
Urban systems are increasingly confronted with the need to implement policies and initiate experiments that facilitate the transition from linear to circular activities and behaviors, introducing ecosystem models with respect to which the behavior of the city is considered as a circular metabolism.

The *Prato Circular City*[76] program is part of this framework and has the strategic aim of strengthening the image of Prato as a *circular city* at an international level and establishing a

[67]https://www.cittadiprato.it/IT/Sezioni/44/Fabbricone/
[68]https://lucaronconi.it/scheda/extra/fonda-e-dirige-fino-al-1979-il-laboratorio-di-progettazione-teatrale-di-prato
[69]https://www.cittadiprato.it/it/Sezioni/36/Campolmi/
M. Mattei, Campolmi. La fabbrica della cultura. Il recupero dell'antica Cimatoria Campolmi di Prato per il Museo del tessuto e la Biblioteca della città, Edizioni Polistampa, Firenze, 2011.
[70]https://www.museodeltessuto.it/museo/sede/
[71]https://divisare.com/projects/257298-mdu-architetti-pietro-savorelli-nuova-sede-della-camera-di-commercio-di-prato
[72]In the urban planning of Prato since the Secchi Plan (1993 - 96), the priority strategy is the recovery of the city-factory through reuse interventions that maintain and preserve the character of mixitè, a term coined by Bernardo Secchi for the fabric of Prato. The Operational Plan adopted in 2018 confirms the centrality of reuse policies in urban strategies, interpreting the topic of reuse of the city as a declination of the narrative of Prato as a paradigmatic city of the circular economy.
[73]Prato and the circular economy - the city https://www.youtube.com/watch?v=3jV1ess7B1U&vl=it
[74]https://www.gida-spa.it/
[75]Prato and the circular economy - circular reuse of treated wastewater
https://www.youtube.com/watch?v=N8Zh6HIqmec
[76]http://www.pratocircularcity.it/home625.html

permanent table with local stakeholders to promote shared actions of circular economy and build a circular city governance.
Prato Circular City promotes a model of circular city based on three fundamental principles: innovation of production processes, urban regeneration and strengthening of social cohesion. A city model that focuses on innovation and digitization of processes as essential tools to direct the urban metabolism towards a circular behavior, keeping the principle of equity and social inclusion in actions or governance models as a constant background.

Circular cities and industrial districts
Each city has peculiar aspects, specific and different socio-economic dynamics. Within it there are multiple identities that in turn relate to the geographically close territories and to the global dimension of economy and trade: the circular transition of urban areas must follow and support the characterizing aspects, which represent the strategic assets and modulate specific and general models.
Italian cities have often generated industrial and artisan districts that were born thanks to particular conditions of the territories and that are intimately connected with their cultural and social evolution.
District dynamics are circular by nature, produce manufacturing symbiosis and generate widespread positive social impacts in the local social fabric: they still represent one of Italy's most important assets, in their ability to represent resilient, flexible, sustainable economic realities and for their interdependence with the territories.

Cities and circular governance models
In this strategic framework, Prato Circular City, on the one hand, moves from the specificities of the city, in particular from the actions in support of innovation and circular transition of the Textile District, on the other hand it builds actions consistent with the general dynamics of urban metabolisms of European cities, developing four vertical topics and one horizontal topic, that of *Urban Circular Governance*, which mirror the most important aspects in the transition of the city towards the circular economy:

1. *Textile & Apparel District and industrial symbiosis:* aims to accelerate the transition towards a circular production model of the Textile District. The areas of intervention are the definition of a better regulation (end of waste), promote a communication at district level, identify funding and economic incentives, study new business models, outline the impact of 5G technology in terms of industry 4.0 and supply chain tracking, promote LCA analysis actions and develop strategies for carbon neutral products with urban forestation actions to be implemented in the city.
1. *Urban resource management - urban metabolism*: from innovative forms of waste management, to the recovery and reuse of water, the use of energy from renewable sources, and the valorization of by-products and sustainable materials, the flows of materials necessary for the functioning of a city and a productive district can be the subject of sustainability policies. The tool of sustainable "circular" tenders can also contribute to a more responsible use of resources by public administration.
2. *Circular consumption*: the circular city is the one where citizens are aware of the issues of sustainability, circularity, short and ethical supply chains, and behave proactively by adapting their consumption patterns and lifestyles. This attitude, thus, encourages companies to change production processes by adopting more sustainable technologies and procedures.

3. *Sustainable urban agricultural systems*: greater attention to local and national production has put the quality of production back at the fore, but also respect for the environment and protection of workers. Urban agricultural systems can meet different supply needs and at the same time support the local economy, developing food policies on an urban scale.

Cities and new circular social models

Alongside the construction of comprehensive governance tools, cities need to rethink how best to use their existing spaces and buildings, involving them in a new vision that enables the social, cultural and economic creativity of communities.

The socio-economic dynamics taking place in cities today stand out for an ultimate rapidity of change: urban areas are places where new models of social and economic interaction are experimented, often in an informal way, appropriating existing spaces in a creative and innovative way. Temporary uses, collaborative economy, shared space management, adaptive reuse are becoming words that are now part of the common language, defining new urban practices in which the social impact and the collective dimension are placed at the center.

Alongside these aspects, cities possess a stock of unused or underused private and public spaces and buildings which, if associated with new urban practices, represent an extraordinary opportunity, because they are places that can be brought back into play in a very short time and with limited economic resources.

The change of perspective towards environmentally active and circular models goes in the direction of developing coordinated strategies between urban planning and management: the challenge then, is to move from urban planning to a new model of urban re-use management, in the logic of developing the functional transition of the city towards new, innovative functions at social and economic level.

The future of cities depends first of all on a correct use of its spaces and buildings, introducing models of circular economy in urban management.

The unused or underused buildings and spaces of the city thus become an important strategic element to be associated with the overall vision and must be the subject of a rethink: not what is done with the building but what is done in the building. This new way of *adaptive thinking* about the city starts from the issue of temporary reuse and gets to the definition of urban strategies to develop models and reuse of parts of the city functional to the overall vision.

From this standpoint, it becomes clear how unused buildings represent a huge potential for cities in terms of space available for the implementation of specific urban policy strategies.

Circular and smart city

Technology today makes it possible to develop digital models of the city, the *digital twin*, which, associated with systems for detecting the occupancy of buildings and spaces, can lead to real-time knowledge of the spaces available. In Prato these reflections have promoted active urban policies applied to the productive building heritage, more than 5 million square meters, which, if observed in the key of new urban practices, represents a fundamental strategic asset for the city, able to respond with innovative ways to the needs of spaces of its economic sectors and of the other industrial districts of Tuscany, in order to promote actions of industrial symbiosis.

The digital twin of the city, functional to activate all the policies of urban reuse and promote territorial marketing programs, introduces the opportunity for a new model of governance that provides for the establishment of a *Urban Reuse Agency,* in the form of a coordinating structure that constantly manages data, develops the general strategy of reuse in relation to the medium-long term vision, facilitates the interaction between supply and demand of spaces and promotes diversified models of use in relation to the vocations of different types of spaces and buildings and

in relation to ownership (public or private). The Urban Reuse Agency represents an innovative governance tool for the smart modalities that it introduces in the management of existing buildings in the city and is an extraordinary enabling tool to implement the principles of circular economy in the management of urban resources.

Cities and collaborative economy

This operational model is the proposal of the document *Handbook on Sustainable and Circular re-use of spaces and buildings*[77] developed by the City Council of Prato and Laboratorio Arco in the framework of the work carried out within the *partnership on Circular Economy* jointly with the partnership on *Sustainable Land Use and Nature-Based Solutions*. The document can be identified as a starting point on new models and strategies for adaptive urban re-use in urban policies, also promoting the inclusion of collaborative economy, temporary uses and shared management of spaces, according to an approach promoted at European level on the priority issue of *Jobs and Skills in the Local Economy*[78] that sees in the city and the economy of scale a potential to generate new social economies and new jobs.

[77]https://ec.europa.eu/futurium/en/circular-economy/handbook-sustainable-and-circular-re-use-spaces-and-buildings-0
[78]https://ec.europa.eu/futurium/en/jobs-and-skills-in-the-local-economy

Towards Harmonic Space Planning?

by *Giuseppe De Luca*

In this contribution I will briefly address three issues related to urban planning. The first is that the harmonic approach in Italy, at least in modern times, consists of physical planning, so much so that it also characterizes its procedures. The second is that this nexus has been revealed and applied in an uncritical and technical way. The third is a proposal for innovation that transforms the technical approach into a social approach.

1. I deal wit the first point by reporting a passage from the debate on the need for a national urban planning law. I start from the accompanying *discussion of* what later became Law n. 1150 of 1942, still largely in force, despite the enactment of the *Italian Constitution* in 1948 which imposed, in its transitional provisions, the overcoming, within three years, of the previous laws. This was not the case for urban planning.
The National Councilor Rosario Massimino, in his speech, states: "We cannot admit that in the master plans for the arrangement of our cities we should not make room for the needs of services of public interest, which today are basic for the civil coexistence and for what is the harmony of the buildings in the framing plans"[79].
The concept of harmony is well connected, on the one hand, to that of civil coexistence and, on the other, to the buildings and their location within the space. This "confinement" is the result of a verbal-designed plan specially drawn, made by a cartographic system and a series of technical rules that mediate between the design and the real space.
The harmony that derives from this is nothing new. The whole history of architecture is characterized by this approach[80]. Its declination to the physical space through the urban discipline is, however, an innovation of a technical-formal nature: on the one hand, as a "vertical" conformity between the various levels of the urban instrumentation that the law has actually provided (from the territorial plan, to the inter-municipal plan, to the general plan, up to the implementation plan); and, on the other hand, as a "horizontal" conformity between the building/architectural project and the urban regulation (functional zoning, planning criteria, distance and typologies)[81].
In the mid-twentieth century, therefore, the instrumental harmony is connected and grafted to a sort of "formal discourse" founder of the organization of public and private space through the territorial and urban planning. The idea of positivist matrix - we are in the middle of rationalism - is that of defining a logical path starting from general principles and making the deductions necessary for action depend on these, by a purely logical way. A procedure to unveil the mechanisms underlying an event, a manifestation, a society, so that they can be controlled and governed. The social function of property and the possibility that it can be expropriated for reasons of general interest complete the framework.

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[79] R. Massimino (National Councilor - new designation of the Honorable - as Representative from the Steel and Metallurgy Corporation component), *Intervention*, in the *Discussion of the Bill: Zoning Law (2038)*, House of Fairs and Corporations, Legislative Committee on Public Works and Communications, 30th Legislature, Minutes of the Meeting of July 2, 1942, p. 519.

[80] One of the fundamental paragraphs of the Fifth Book of 1414 on *Architecture* by Marcus Vitruvius Pollonius is titled precisely "Of Harmony".

[81] Studies and research on this subject are endless. I cite only the last volume, in order of time, that measures up to this original approach and its long permanence in the Italian technical, cultural and political system: M. Zoppi, C. Carbone, *La lunga vita della legge urbanistica del '42* (The long life of the urban law), didapress, Florence 2018.

The control of cities and agglomeration are the main concern and the urban discipline the pedagogical tool to do it[82], at least in the intentions. The discipline has, therefore, a very precise social role of an educational nature: a collective procedure of education to action, since it does not build a specific urban order, but "shows" the citizens how they should do it. From this it follows that any action tending to modify the territory in a qualitative or quantitative sense, changing the destination and/or distribution of the population, productive activities, and services, is an urban planning act.
The educational function is implemented through the plan. In any case, it represents the most significant act, the hegemonic part, of a conscious organization of a given territory.
The urban plan, of any nature and hierarchy, is therefore a complex ordered act, but harmonious and immaterially beautiful, which must guide in a conscious and reasonable way the process of transformation to lead it towards social goals, to achieve results of economy and high quality of life. It follows that the urban plan is an immaterial product, made of rules, procedures, processes, which are expressed in standards. It is not the project of a change, but the law itself, for voluntary self-imposition - because validated by an institutional political deliberation - of the changes. The planning that derives from it is of a conscious type, subordinate as it is to the availability of resources (scarce) and bound to preserve as much as possible the environment (unique), both natural and anthropic, and made binding because validated by the institutions.
The space we have available in this contribution does not allow us to go further. We can just say that doing urban planning, therefore studying and planning actions, should bring reasoned "harmony" (in terms of physical composition, beauty and functionality) in the human consortium.

2. The concept of harmony, therefore, was "diluted" into that of vertical and horizontal conformity. The implementation of the law, however, was not rationalist in nature, as the provision of the law presupposed, but different, defined as "post-rationalist", which means that the vertical steps necessary for orderly planning were not complied with and not at all composed, while only the horizontal one was applied, centered on the municipal level, that is, general urban planning. Conformity has thus been restricted to urban planning regulations and the project of space defined by them.
Harmony has therefore been interpreted with reference to a double legal nature: the destination of a land and its "exploitability" using a series of parameters both of an urban nature (ratios between spaces intended for residential and productive settlements and public spaces or spaces reserved for collective activities, public green spaces or parking lots) and of a building nature (building density, type, maximum height, distance between buildings, coverage ratio, distances between boundaries). Legal nature "normalized" and made compulsory through a special ministerial decree no. 1444 of 1968, which introduced in Italy the so-called *urban standards*[83]: mandatory limits of building density, height, distance between buildings and maximum ratios between the spaces intended for residential and productive settlements and public spaces or spaces reserved for collective activities, public green or parking, to be observed for the purposes of the formation of new urban tools or the revision of existing ones.
The intersection between density, height, distance and maximum ratios between spaces has ended up determining not only the quantities, but also the qualities of the urban project which, since then, has implicitly incorporated - by normative imposition - what is defined as "legal harmony" of a horizontal nature. The latter is a type of harmony that has not always been transformed into formal and physical beauty of the urban landscape, indeed, in most cases,

[82] Territorial Coordination Plans, in the original law, were to be approved by the Ministry of Education.
[83] See L. Falco, *Gli standard urbanistici* (Urban standards), Edizioni delle Autonomie, Rome 1978.

respect for the law has become a limitation for creativity and architectural design, which has come to condition.
The post-rationalist nature of urban planning underwent a first adjustment from the second half of the eighties of the twentieth century as a result of the first regulations for the protection of the landscape and environmental heritage and the soil. Law no. 431 of 1985 relaunched vertical harmony, that between the different levels of planning: from the highest, regional, provincial or sectoral level, to the lowest, the municipal level. This type of harmony is interpreted and applied as "consistency" between levels, that is, as a continuity of meaning between the objectives and indications of the highest level up to its applicative transfers to the lowest level. This is a substantially procedural approach: not conforming in terms of quantity, but consistent in terms of linguistic and argumentative content, a kind of "textual harmony".
The two paths of harmony, the horizontal juridical one and the vertical textual one, have come down to us and have strongly influenced all the practical actions of both public policies and territorial and urban planning, at all levels.
This kind of harmony is different from the kind of harmony we deal with in this volume and which we need in contemporary times.

What do we need to go beyond technical and procedural harmony? What innovations do we still need to call upon and pursue in order to give new meaning to the public action of governing the territory?
Before answering, we need to unveil the postulates of our thought. When we talk about urbanism, planning and territorial government, we are not talking about disciplines in the strict sense of the word, but rather about political and technical practices that find their essential point of reference in the public domain.
Therefore, we speak of urban policy, of planning the territorial zoning plan, because each of these terms has as its point of arrival a planning instrument which, at whatever administrative level it is connected to, is in any case a technically assisted political decision. It is therefore a meeting between two spheres of action: that of the political decision-maker who refers to the so-called principle of planning, according to which each elective body of the first instance, representative of the general interests of citizenship, expresses its choices on the territory through plans and acts of planning in which the choices must be explicit, clearly defined in relation to all, transparent and - with regard to the regulatory part of the uses of land - precisely referred to the territory, that is, represented on a cartographic base of adequate scale to the greater or lesser definition and precariousness of the choices, and that of the technical planner who, depending on the type of involvement he or she is called upon to respond to, technically transfers political intentions - correcting or adapting them, if necessary, also by resorting to direct forms of social participation and impact assessment - into regulatory frameworks and technical provisions, that is, into projects for cities or territories.
Obviously, technique is not neutral, nor is it impartial, because it too alludes to affiliations, refers to theories and uses practices. In the end, it gives a significant contribution to building the environment in which we live by outlining priorities, scenarios, strategies, rules and physical arrangements with the tools of urbanism and planning.
The paradigm of Harmonic Innovation is grafted in this relationship: "or rather the circular innovation that pursues the "right relationship" and knows how to combine contrasting elements and tones on the terms of consonance"[84].

[84] F. Cicione, L. De Biase, *Harmonic Innovation. Un senso di futuro* (Harmonic Innovation, A sense of future), Rubbettino, 2020, p. 15.

In the field of territorial and urban planning, right relationship means "right dimension" for this open and dynamic harmonic relationship, both in the early political and technical dialogue and in the final technical and planning exchange.
Let's debate them separately.
In the political and technical relation, different dimensions come into play, from economic planning to sectoral policies, and different modes of action that refer both to decision-making procedures through participation and evaluations. It is this new relation that has broken the traditional isolation between territorial plans and programs and economic and sectorial planning, and has paved the way for an initial homogenization not only of procedures, but also of the reference information system and the operational repercussions on the territory. Homogenization that now requires a circular relation, because it also triggers the evolutionary trajectories of the economic and productive and social system that open up a series of questions and problems on various fronts and make an overall rethinking of both the instruments and the way of public acting mandatory.
From a perspective of harmonious innovation, both planning and programming cannot be understood as self-referential and separate modes of action: the former linked to the organization of the physical uses of the territory and the latter to the allocation of the expenditure of financial resources. In a perspective of consonance, though, they need a new sense and a new purpose among the instruments of political action and among the institutional levels currently in force.
An impulse to this process could be significantly given by the passage from the model of self-referential sectorial policies to models of integrated and consistent policies, which hinge on intersectoriality, partnership and rooting with the demands, projects, specificity and territoriality of single spaces. This passage is facilitated by an intrinsic characteristic of planning: that of being able to be *open innovation*, through the institution of participation and that of strategic environmental assessment, and above all for its location within the public domain.
If we agree on this approach, the Circular Harmonic Innovation is the one connected to the way of living and connecting with nature: hence the concept of right dimension that must guide us in policies and projects related to practical reason. Designing with nature is not new; a seminal text from 1969[85] already proposed this alliance. The book indicated a form of operational relationship between man and the environment and of dynamic interrelationships between natural and cultural ecosystems that would become a reference dimension for an international chain of urban planning practice: the one which would assume the connotation of ecological planning. But this found very little space in Italy, where urban planning practice has always been addressed primarily to the regulation of land uses and only to the redistribution and control of the so-called urban land rent, to be immediately pervaded by a new paradigm.
Conditions now appear to have changed, and the 2020 global pandemic may be the agent behind the ultimate resetting of even this long and robust tradition of land governance.
One of the most promising strands of harmonious innovation is certainly that of the so-called "plant infrastructure"[86]. The "plant" approach to design is a very weak field of research in urban planning, almost unknown in Italy, while it is gaining ground in more established research areas such as traditional agricultural disciplines and recently is also investing the field of investigation and work of architectural design. While it has been present for some time in the field of architectural technology, especially due to the emergence of the eco-sustainable approach in the

[85] Ian L. McHarg, *Design with Nature*, Garden City, N.Y., Published for the American Museum of Natural History [by] the Natural History Press, 1969 (It. tr. *Progettare con la natura*, Muzzio, Padova 1989)

[86] We refer to our, "From "green" and "blue" to "plant" infrastructures: towards a new paradigm of urban design", in F.D. Moccia, M. Sepe (eds), *Developing, regenerating and reconstructing cities. Contemporary topics and challenges*, Inu Edizioni, Rome 2018.

design process of residential buildings. The latter is supported by the so-called "ITACA Protocol" which contains the methodological and procedural principles underlying the system of multi-criteria analysis for the assessment of environmental sustainability of buildings, for the purpose of their classification through the assignment of a performance score.
The "vegetation" approach sits alongside the better known and historically dominant landscape approach to design, which has a longer tradition and more widespread roots in both various design practices and international research fields. Nevertheless, when we attempt to circumscribe its meaning from a technically relevant point of view, everything becomes more nuanced and slippery.
The plant-based approach still seems a very feeble disciplinary field. To make it closer to urban planning we have to override it with the adjective "green". Hence the "vegetable revolution" of infrastructures, proposed in the form of documentaries in 2008 by Legavideo, within the *World Political Forum* of Torino Esposizioni, as a cultural provocation for the transformation of road surfaces by removing asphalt everywhere and replacing it with vegetation. A utopian program, yet an indicator of that Circular Harmonic Innovation that we are chasing.
However, the contemporary question for a way out of the pandemic is another one: what harmonic dimension must we have in order to transpose the rhythms and generative modes of nature into anthropic practices? In other words, how much can we learn from observing nature, not as a mere resource but as a heritage to be shared, and how much of this teaching can be transposed into the practices - even the tiny and apparently marginal ones - of territorial and urban planning? Or better, how can it be grafted into a practice of spatial planning, linked to procedures, times and modes of action consolidated and regulated in Italy by national and regional legislations?
Apparently, perhaps very little. In reality, perhaps just enough to project ourselves towards new modes of research and action, if only we look at everything from a new perspective of the natural contexts present, as Pierre Bélanger reminds us[87].
Talking about regulatory and support services in a perspective of Circular Harmonic Innovation, having natural and vegetal conditions as "material" of work, means reckoning once and for all, at least in Italy, with the traditional "urban standards", but also repositioning the debate around the so-called "territorial equipment".
The new public equipment is the ecological networks, which host slow mobility and allow the reproduction of biodiversity, land reclamation and soil protection works, social housing services and the various spaces for social aggregation (required by interculturality and functional mix of uses), the spaces for new economic "districts", energy production, the spaces needed to reduce heat islands and those to be left free to manage emergencies, those needed for air and water, for reforestation and city agriculture, the spaces of living increasingly hybridized by online work.
To navigate such challenging paths we need interactive governance, in the dual meaning of Jan Kooiman and Svein Jentoft, according to whom: "The whole of interactions instigated to solve societal problems and to create societal opportunities; including the formulation and application of principles guiding those interactions and care for institutions that enable or control them" [88]; and the group of scholars Torfing, Peters, Pierre, e Sørensen, according to whom: "The complex process through which a plurality of social and political actors with diverging interests interact in

[87] P. Bélanger, *Landscape as infrastructure: a base primer*, Routledge, New York 2017.
[88] J. Kooiman, S. Jentoft, "Meta-governance: values, norms and principles, and the making of hard choices", *Public Administration*, Vol. 87, Issue 4, 2009, p. 820.

order to formulate, promote, and achieve common objectives by means of mobilizing, exchanging, and deploying a range of ideas, rules, and resources" [89].

In the end, an innovative harmonic and circular governance, which raises questions about giving a definition of new values and new common visions in a cooperative way and with experimentalism in practices[90] that require a different behavior for a different organization of the public space of citizenship, using a model of open innovation & harmonic approach for the new generations, more attentive to the needs of the community.

That is, the germination of a new school of planning culture that will merit further scientific, methodological and operational investigation and that, in one formula, we could define (and name): Harmonic Space Planning.

We will come back to it, also soliciting and integrating further contributions, as it will be useful and necessary to do so.

In the meantime, we simply say that being guided by this approach facilitates the solution of new needs that express urgency.

[89] J. Torfing, B. G. Peters, Jon Pierre, E. Sørensen, *Interactive Governance. Advancing the Paradigm*, Oxford University Press, 2012, p. 2.

[90] In the perspective of C. F. Sabel, Experiments in New Democracy, Armando Editore, Rome 2013.

Harmonic Technologies

by Giuliano Muzio

1. Preliminary remarks

Building a new cultural paradigm is certainly no small matter. Difficulties increase if we have to deal with innovation, an area that lends itself to different interpretations, involves wide-ranging skills and affects multiple aspects of our daily lives. Rivers of ink have been written on innovation in literature (or terabytes of memory used, if you prefer), and yet it seems that something is still missing in order to define it fully and that the last page has yet to be written.

If we want to characterize harmonic innovation, it is not technologies that come to mind first. Rather, we think of specific areas, protection of the natural environment, social inclusion, protection of people, and so on. And perhaps to particular processes that are carried out in these areas: the production of goods that minimize environmental impact, the possibility of generating wealth in such a way as not to increase the gap between those who have and consume more and those who have less, or nothing at all, or mechanisms that are able to protect those who are in conditions of weakness or even suffering. We hardly ever think of technologies, technologies that can be somehow "suitable" to build harmonic innovation or, as we use to say among insiders, technologies "enabling" harmonic innovation.

Keep in mind that the topic is not so easy. In fact, it is not necessarily so easy to identify the most suitable technologies, both because it is not always clear which are the potentialities and the limits of a particular technology, and because sometimes we are deceived thinking that certain technologies can serve certain purposes. The debate on this issue would take us very far and this is not the place to do it; suffice it to say that we start from the assumption of having sufficiently investigated the characteristics of the technologies that we will identify as "harmonic technologies". The goal of my contribution is to outline the characteristics of these technologies and try to argue why they can be considered as enabling harmonic innovation.

Moreover, we must say that innovation qualified by the adjective harmonic suggests a quality that recalls ethical principles. It seems important to me, therefore, to stress that the decisive factor in this conceptual framework seems to be people and their ability to use technologies for the most appropriate purposes. In other words, there can be no enabling if those who have these technologies in their hands do not decide to use them in accordance with ethical principles that are superordinate to the technologies themselves. Therefore, if we assume that there may be technologies that can be considered more harmonious than others, this condition is a necessary condition, but not sufficient to unfold their potential, since the latter ultimately depends on the correct use by people.

We therefore take it for granted that we can identify some technologies that lend themselves well to the construction of the harmonic innovation paradigm. The reasoning is more or less the following: technologies develop on the basis of roadmaps dictated by market needs, societal trends and the progress of scientific knowledge (the detailed dynamics would be very complicated and beyond the scope of this contribution). The application of some of these on the basis of the paradigm of harmonic innovation is not only "suitable", but may even favor the development of the paradigm itself.

It goes without saying that in the development of harmonious innovation, the values that guide it is what really matters, and not the technologies. The latter, instead, should always be intended as at the service of the primary goals. Falling in love with technologies is a trend that unfortunately is often found in our times, but that ends up stifling the real motivations that underlie the introduction of the new paradigm. The failures or problems that occur in the contexts in which technologies are relevant are hardly ever attributable to technologies themselves, but are rather the result of a lack of clarity about the underlying objectives or from a poor consideration of the context of reference and so on.

Therefore, in the next few paragraphs I will briefly describe those technologies that in my opinion are more suitable to be used in the paradigm of the harmonic innovation.

2. Artificial Intelligence: AI for good

In the context of technologies that today are currently going through greater development and a wider range of applications, we cannot fail to consider artificial intelligence (which we will abbreviate with the acronym, which has now become of common use). We adopt in this case the definition given by the European Commission [1]: Artificial intelligence (AI) systems are systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, and deciding the best actions to take to achieve the given goal. Clearly, a deep and thorough definition of artificial intelligence is beyond the scope of this contribution. I will simply consider the heuristic definition presented above and use it for our purposes.

Like any technology, AI has risks and opportunities associated with its use. If we are looking for harmonious technologies, we will clearly be interested in the positive aspects, which is why I used the locution "AI for good" (see in [2] what is said in this regard). But, to tell the truth, knowing the potential risks is not of secondary importance either, because it helps us prevent possible distortions. If we reason in technological terms, identifying harmonic technologies is an activity which must be associated to a knowledge of when, these technologies, may be "disharmonious" and therefore counteract the adoption of the paradigm.

But what is AI for Good then? In other words, what are the harmonic potentials of AI? Certainly the possibility of improving people's health care, which in a pandemic phase like the one we are going through is something that can certainly be appreciated. The possibility that the transport systems on which we travel today, but also those that are planned for the future, such as self-driving vehicles, are safer. But also the possibility of easier access to information and the possibility of creating personalized training systems. AI for good can also help to improve production processes, making them more environmentally friendly by increasing efficiency and energy savings. It can also reduce the waste of natural resources in agriculture, while helping agricultural and food traceability. Thanks to AI, it will also be possible to prevent fraudulent behavior online and speed up the administration of justice.

Alongside these benefits, however, it is also pertinent to be aware of the risks and how these risks may impact people's lives, thus requiring ethical use of AI and mitigation of these risks. Let’s start with one of the most sensitive aspects: if AI systems are used to make decisions, it is appropriate that these decisions are not potentially harbingers of a dramatic impact (sometimes people's very

lives may be at stake). This for example could happen in work-related issues, or justice, for example. AI-based systems can also theoretically violate the integrity or confidentiality of personal data. As a matter of fact, the wide spectrum of what can happen if algorithms are able to operate on systems without human oversight is vast, and it is only recently that mechanisms that can bring these situations under control have been developed.

This is only a very brief overview of the possibilities that this technology offers. We clearly refer to more comprehensive sources for a closer examination of these features [3], and here we simply address two examples: the possibility of using AI to identify violent, harmful or dangerous sources of communication and information (such as, for example, "online hate speech") and the leaps and bounds AI is making in the field of human health and well-being.

Let's start with the first example. The spread of the Internet, the development of social media and global communications have unfortunately encouraged the spread of so-called "online hate speech" [4]. According to the Council of Europe [4], hate speech "covers all forms of expression that spread, incite, promote or justify racial hatred, xenophobia, anti-Semitism or other forms of hatred based on intolerance, including intolerance expressed by aggressive nationalism and ethnocentrism, discrimination and hostility towards minorities, migrants and people of immigrant origin". Of course, such manifestations have existed well before the birth of the Internet, but with digital technologies and online connections, these phenomena have grown exponentially. What AI can do in this context is provide linguistic technologies that can detect and potentially curb such issue where it is detected early.

The second example opens up a potentially broader field. If we want to make a quick overview, we can start from the enormous possibilities in the field of prevention: from the analysis of large amounts of clinical data, it is possible to derive what are the virtuous behaviors that prevent the onset of certain diseases and then correct behaviors considered instead negative. It will also be possible to access personalized treatments, once the AI can have as input a sufficiently large amount of data regarding individual cases. AI can also support the doctor in the correct diagnosis of a disease, comparing a real case with the models at its disposal. Not only that, but AI-based robots and machines can perform certain tasks much more accurately and safely than humans can. From these hints, you can see how the scope of AI in healthcare can be boundless. It also becomes clear what precautions need to be taken from an ethical standpoint, which fall under the risks we addressed earlier.

3. Social networking

"Social" apps and platforms have entered our lives with absolute pervasiveness. They have changed our existence and the COVID 19 pandemic has further accentuated this aspect. The social implications of this phenomenon are wide and complex, we are interested in highlighting the harmonic potential of these technologies and I will simply stick to this.

Again, I give two examples that can get it straighter more than anything else. The first concerns community creation. Beyond the generalist platforms that aim at the "mass market" (Twitter, Facebook, TikTok, etc.), the platforms that we can call "vertical" are aimed at a precise, sectoral and typically fairly well-identified target. They are born and grow with the most varied purposes, but they often have an objective of social nature. Whether they are dedicated to the development and financing of social innovation projects, or to the exchange of good practices for environmental

protection, or to the so-called community projects, which leverage the resources of specific territories, or to urban regeneration projects, they have something in common, which I will try to underline.

They promote instances that arise "from the shallow", or that in any case take up topics decided at a high level, but for which a wide participation is necessary. They typically speak of limited, punctual and very concrete initiatives, with which the members can easily identify. They push participants to take a leading role that results in some tangible results. Sometimes, in the most ambitious cases, they even aim at profoundly changing the standard models that characterize a given market, as is the case for example in the so-called "community tourism". This is a form of tourism that assumes that those who travel are interested not only and not so much in a quick and superficial consumption of the places visited, but in a "slow" and deep knowledge of the social fabric and communities of those places. [5]

The second example refers to the educational value of the game. We are used to considering game essentially as a recreational moment, but lately it has been discovered that using the game in non-recreational situations can be a useful tool for transferring knowledge and improving relationships among people. The game, in other words, becomes an element of construction of communities that aim to learn. 6] In this way, the audience can be introduced to topics or issues that would be otherwise more difficult to appreciate with other tools; these are often topics with a social purpose, such as, for example, the importance of protecting the environment, contrasting wrong behaviors, raising awareness of issues of particular educational importance. Now I think it is clear why this can be a technology that has every right to be considered harmonic.

4. Cyber security and physical security

As the network becomes the catalyst for many everyday experiences, a problem regarding its security clearly arises [7]. Not only for what concerns little or not at all "safe" interactions, but also for what concerns information and data that people have or make available on the net or upload more generally on supports that then connect to the net. All of us have a current account on-line by now, or we buy goods and services on-line for example. But there are hundreds of examples of this in other contexts too.

Ensuring that people live in a safe environment is certainly a principle that can be fully framed within the paradigm of harmonic innovation. Technologies can then play a fundamental role, also because, as we have just seen, some of our current insecurities are derived from a technological context. Therefore, all technologies that allow to prevent frauds become important. First and foremost, we are thinking here of the financial system and all the hardware and software mechanisms that have been developed with this goal in mind. By extension, we can include in this category all the frauds that involve processes that are enabled by information technology (which then end up producing an invoice that reaches a customer). In raising this issue, we must always remember one thing that I made clear at the beginning of this contribution: technologies are only one aspect at play, and basically not even of primary importance (contrary to what many people think). By way of example, in fraud prevention a pivotal role is played by organizational measures.

Just to mention another harmonic technology in the field of security (which can also be considered a sub-case of the previous one), which takes on a not secondary role, we can mention the set of technologies that can be put in place to protect the digital identity of a person. They are typically

software systems that allow to uniquely recognize a person in his activities of digital nature and avoid the so-called "identity theft" that can cause even huge damages to those whose identity is stolen.

If we move into the area of physical security, the field becomes vast. First of all, we must mention all the devices based on sensors and developed specifically to ensure the physical security of people. Some examples could be anti-intrusion mechanisms, but also sensors that guarantee the security of various types of equipment, from household appliances to motor vehicles, including industrial machinery for safety at work, or sensors able to detect anomalies potentially harmful to human health or behaviors considered unsafe.

A different approach to physical security is based on trying to ensure the proper performance of one or more procedures that underlie the maintenance of security in a given activity. These procedures may or may not involve the use of technology. For example, let's think about the security of people during a journey using a means of transport (car, train, plane, etc.). If we focus on a particular case, for example driving a car, we understand that there can be procedures that do not use technology, such as properly fastening seat belts, and procedures that use technology, such as turning on the indicator lights on the car dashboard. In order for a warning light to come on, a number of automatic technology-based controls that can be very complex must be work. Since in certain circumstances these controls can be an indispensable guarantee for the safety of people, it is advisable that the underlying technologies are reliable and effective. It is not necessary to use rivers of words to understand that this type of technologies can definitely be fully included in the field of harmonic innovation.

5. Environmental Protection

The last chapter, which reviews some examples of harmonic technologies, is dedicated to a very broad field: that of technologies capable of protecting the surrounding environment from the potentially harmful effect of certain human activities. The macro-theme in this case is the identification of the technologies that have two properties at the same time: to be renewable technologies, that is, that guarantee not to deplete the surrounding environment of resources that may run out and also to be sustainable, that is, not to burden excessively on the environment, thus generating devastating and irreversible consequences. Specifically, this means making the most of natural sources of energy, gradually eliminating dependence on fossil fuels, improving construction techniques to build homes and plants that allow for a reduced consumption of resources, and act on production cycles to ensure that these too can be made with a minimal consumption of resources and a reduced impact. This is clearly an enormous field, in which there are dozens of technologies that it would be too much to describe even briefly (new electric propulsion engines, new ways of storing energy, hydrogen as a vector and so on).

There are also other technologies and issues that lie in the background of the scenario just described. Let's think, for example, of all the technologies that make it possible to monitor, on the one hand, and prevent, on the other, environmental pollution. Just to mention a few examples, let's think of sensor networks to detect the presence of harmful substances, but also of software platforms to analyze the data collected by the sensors themselves. Or all the filtering systems that make it possible to avoid the spread of harmful substances in the air or water, which can instead be treated through special processes that guarantee greater safety. It is worth remembering once again that technology is only a tool that helps achieve a certain objective, but even in this case

behaving correctly is what really matters. A lot can be done to prevent undesirable effects on the environment by acting on behaviors before technologies.

Another area in which technologies can be of great help is certainly that of waste disposal and recycling. These technologies can enable the paradigm of the circular economy, which has been gaining great momentum in recent years and can definitely be considered a branch of harmonic innovation. I'm thinking of all those chemical and physical processes that can intervene on waste materials and, by treating them appropriately, try to reinclude them into the production process (or include them in a primary way if they are organic materials). In addition to this area, we can eventually point out a related one: all the investments that are being made in new materials that can be more environmentally friendly. We are talking about the increased use of natural materials within production cycles, as well as the synthesis of new materials designed from the very creation of the production process in order to minimize environmental impact. And in this last category we can include both products which have been discovered to have a high impact that are appropriately "manipulated" thanks to innovative technological processes, as well as real new materials (such as nanomaterials).

6. Conclusions

As clearly shown in the previous chapters, in the emergence of the new paradigm of harmonic innovation, technologies are a candidate to play an important role, even if, as already mentioned, technologies are not the only and the main "ingredient" of the new recipe. However, in a world in which technological aids are becoming increasingly pervasive, it is important to have a very clear map of what these tools can do, as well as to identify the risks associated with their careless use. It is neither a matter of demonizing nor acclaiming, but only of knowing the tools available and understanding how they can be used to accomplish the objectives that one has in mind when imagining harmonic innovation.

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Harmonious innovation, the only possible strategy for sustainable growth

by *Giorgio Scarpelli*

Addressing the topic of innovation is always fascinating.

It demands an imagery of positive factors such as passion, determination, creativity, courage, curiosity, etc.

Innovation starts with ideas. The embryo of ideas are our dreams and it is legitimate, in dreams, to have no limits (even if their transformation into reality requires discipline and rigor) and to dream of things that make us happy.

The happiness we strive for is the result of a proper balance between all the dimensions of our lives. We seek well-being not in the economic sense that was once intended, but in the sense of being truly well.

It is easy to transpose this aspiration from an individual dimension to a collective consciousness. It leads the entire society to give itself new rules, to reward virtuous behavior and gradually exclude those processes and behaviors that appear disharmonious.

This new awareness requires us to radically rethink the process of creating corporate value. Sustainability, circular economy and social innovation represent central elements for business, in manufacturing as in services, in large companies as in startups.
There are therefore a series of challenges to be faced collectively, which require combining economic growth with sustainability, if necessary reconfiguring business models or developing new ones. All this in a scenario in which changes linked to the exponential growth of technologies follow one another, making it even more complex to define appropriate strategies for the future.

Technological change is advancing at an unprecedented rate, most recently on the Covid-19 pandemic-induced push for digitization. The relentless pace of technological innovation is shortening the business lifecycle and forcing management to make decisions and commit resources much more quickly. After all, the trend of an aging population and inadequate fertility rates persists. On the one hand, this increases the need for technology linked to the automation of an increasingly wide range of services, and on the other generates a gap between those who can easily access technology and those who have objective difficulties in using it, such as the elderly population. And today it is technology that connects us globally and enables unlimited mobility of trade, people, capital and information in the various areas of a complex, multifaceted, diversified and complicated world, leading to changes in markets and customers, who are increasingly educated with sophisticated needs, aware, informed and demanding. A non-inclusive technology, therefore, appears totally unacceptable both ethically and from an economic and social point of view.

The world therefore has to confront social, environmental and financial challenges of unprecedented scale and complexity. No one can solve these problems alone.

If you want to be competitive, you must be innovative. This is a perspective that is bringing together an increasing number of organizations and companies on a global scale, and that has been designed by the United Nations in the form of the so-called *Sustainable Development Goals*.

Sustainable innovation must be considered the core element of new business strategies. The good news is that reconsidering economic growth models consistent with sustainability goals generates new market opportunities worth around $12 trillion (source: United Nations).

Innovation and sustainability are increasingly linked and overlapping. Businesses and leaders of the future must be able to grasp and interpret this new way of doing development and creating shared value. For companies, this means a commitment to fair, impartial and equitable behavior, which takes into account the economic, social and environmental repercussions of their actions and is expressed in Social Responsibility, Business Ethics and eco-sustainable production strategies. For example, if we look at the manufacturing industry we are still engaged in building the model of Industry 4.0 but there is already talk of Industry 5.0, in which technological issues run in parallel with the issues of sustainability. Collaborative robotics, augmented reality, artificial intelligence are seen as opportunities to improve both production processes, the welfare of workers and environmental impact. The factory model becomes open and permeable to innovation, easily adaptable to change and able to positively fuel the growth of the entire territory in which it is located.

The magnitude of these transformations requires a type of innovation that can't just be incremental. It requires a new mindset, new business models and new technologies. Companies must be prepared to meet this challenge. And to do so, they must invest in human capital, in restructuring the organization's operational processes, in eliminating any friction to internal and external collaboration and in promoting ideas at all levels.

It is possible to develop a sort of "Innovation readiness" to understand and measure how ready a company is to confront this scenario. The foundation of a company's attitude towards innovation is made up of four intangible assets that are in fact four characteristic elements of the company culture: the attitude towards knowledge sharing, the attitude towards collaboration, inclusiveness and lateral thinking. The more these elements are pervasively present, the more the company will be able to progress along the path of innovation. They are mirrored in the behaviors and attitudes of individuals and influence the entire business organization. As far as people are concerned, we can make a list of the characteristics that we could define as "Individual Innovation enablers", such as: the perception of a common identity, flexibility, dynamism, curiosity, ethics based on shared values, emotional intelligence, a transparent attitude, the willingness to leave the "comfort zone", being prepared to take the initiative, the attention to seize opportunities. Similarly, and as a direct consequence of individual attitudes, also the business organization can be measured on the basis of factors such as: inter-departmental collaboration, creativity, internal and external connections, widespread sense of community, freedom of expression, absence of fears and concerns, openness to dialogue, structuring of competencies without "silos", acceptance of diversity, complementarity of roles and structures, team motivation, fairness as a preliminary remarks to any comparison, absence of disparities, transparency.

These elements ensure that there are no stops on the transformation processes that a company must put in place. Innovation is precisely the predisposition to transformation that directs change in an evolutionary and non-sectorized sense, and that can take place, depending on the

circumstances, gradually or in a clear and disruptive way, as sometimes happened to survive radical changes in the business scenario or the emergence of new technologies.

The oriental culture defines three transformation models, called "**KAIZEN**" (incremental transformation that guides the evolution of an organization in a progressive and non-traumatic way through the gradual introduction of changes); "**KAKUSHIN**" (more sectorial transformation that places, for example, brand new products and services alongside consolidated lines of business, aiming to renew the value proposition of an organization); "**KAIKAKU**" (radical change of one's own business model, necessary to survive disruptive factors that can potentially destroy an entire sector). Obviously the "KAIZEN" transformation model is the one to adopt in the majority of the cases. It can represent a connotation of constant innovation for a company. The KAIZEN transformation model provides for a capacity for strategic planning enabled by the adoption of smart models and processes, conducted with short iterative cycles, based on experimentation of the new and on the acceptance of failure as an opportunity for growth: "lean thinking" as a step of constant change to which the company must go through and which can be organized in cycles of four phases. The first ("*Understand the direction*") concerns the definition of the strategic direction towards which to move; the second ("*Grasp the current condition")* aims to objectively define the current state; the third (*"Establish the* next target *condition"*) sets the next target to in order to move towards the established direction; the fourth ("*Iterate towards target condition*") consists of the *implementation* (*execution) of* the set target and in the evaluation of the effectiveness of the addressed objective and of the possible need to define a further iteration phase towards the achievement of the established strategic objective.

But, as mentioned earlier, the magnitude of the transformations of this time of ours requires more than just incremental innovation. It's a time for big choices. It's the time to be brave and let established habits and practices go to embrace a scenario that is emerging with the disruptive force of epochal changes. A change determined primarily by the response that technology is giving to an unpredictable and unexpected fact that has accelerated the processes of digitalization by decades, and from which there will be no turning back. And obviously the resources of a single entity, company, nation, social community, cannot suffice to master such complexity.

As far as companies are concerned, we are talking about the ability to transform themselves into a collector of opportunities made possible by a network of relationships. They turn it into an *Open Innovation Hub*: an open and collaborative ecosystem, practical in focusing on challenges, where sustainability is one of the strategic drivers, which is based on digitalization and adopts Design Thinking as a method and technologies as an operational tool. The greatest emphasis is often placed on technologies. They are often associated with innovation, so much so that innovation is sometimes identified simply as the ability to proceed rapidly in the adoption of state-of-the-art technologies. But technology itself is not the end; rather, it will achieve its purpose when it is used without people being aware of it. The deepest technologies are the ones that disappear. They weave themselves into the fabric of daily life until they become indistinguishable.

After all, technologies and digital data allow us to exercise a new form of creativity to give life to a society in which everyone can build their own lifestyle and pursue happiness according to their personal expectations and aspirations.

Combining digital transformation with the imagination and creativity of different people will facilitate not only problem solving, but also value creation for the entire society and the planet.

Computers are now everywhere at all times and embedded in everything around us. The device "disappears" into the enriched environment of our daily lives. Computers are no longer just work tools but essential elements of our world. Even the places in which we live may have a new appearance. Until now, we have lived in social contexts that are often unbalanced. City centers revolve around work and commercial needs, leaving room for aggregation, entertainment and shopping only at certain times. Other districts, as well as immense rural areas, are simply places where "nothing happens." Smart Working and the relocation we are becoming accustomed to will gradually change this scenario, recreating the balance and expanding the places where we will live and work. The same "smart cities" will therefore no longer be static physical points but digital ecosystems, rich in services for "5.0 citizens", who are responsible, informed, connected and attentive to the impact of their activities on our ecosystem.

The challenge, therefore, is to invent technologies that can be transparently integrated into everyday life, without anyone being excluded. Computational capacity and distributed intelligence in the environment require interoperability and integration of data, from the Cloud to sensors, to make optimal use of information. Providing a solution to data integration means being able to create knowledge and move from a concept of technical information for a few specialists to distributed knowledge for everyone.

The benefits that result from a connected society are significant, disruptive, and transformative. However, along with the many benefits, the connected world represents an attack surface. The more digital transformation advances, the more dependent processes become on technology, which exposes new vulnerabilities. For this reason, the adoption of technology must entail the adoption of security countermeasures, which are also both effective and "transparent" to the end user, for a digital world that builds relationships based on trust. Not only that, in a world in which the physical and digital dimensions are increasingly integrated, it is necessary to be able to transfer some categories hitherto considered purely human to digital spaces. In digital relationships mediated by technology, it is necessary to reconstruct the empathy of human relationships. The interaction with an artificial intelligence, for example, which is able to learn, must reach a level of simplification of cognitive effort and create a pleasant experience to surprise users, anticipate their needs and propose alternative solutions to facilitate their work and their lives. The concept of Transparent Technology aims precisely to "dilute" technology in the objects around us, so as to bring the benefits of the digital world in the one naturally perceived by human beings, without the technological content manifesting itself or altering the nature of human-human or human-world interaction. Internet of Things and Machine Learning provide "senses" and "intelligence" to objects, respectively, but an unresolved question is how humans can interact with "augmented objects" in a natural yet effective way. This is not just a "user experience" issue. If, for example, we analyze the increasingly important role acquired by artificial intelligence in supporting choices and in making decisions, it would be clear that categories hitherto considered typically human, such as ethical issues, the correctness of interpersonal evaluations, the absence of prejudices, are factors to be approached in the same way as more technical issues related to the processing capacity of information, performance, maintainability of the system, etc.. But artificial intelligence expresses its possibilities on the basis of the data on which it is trained. An informative base that contains inherent elements such as discriminating factors, racial or social prejudices will cause the artificial intelligence behavior to be vitiated by these elements, even if not appreciable by a purely human evaluation of the data base used for the "training" of the system.

These are the new challenges induced by digital transformation. In order to solve them, we need new ideas and approaches, which can be often recovered outside the most structured business organizations. This is why Startups represent a central element of the Open Innovation model. Not only because they bring good ideas but also because they implement them with that load of curiosity, passion, courage, enthusiasm and determination that are essential ingredients to implement a real transformation. After all, Startups experience a very dynamic situation, often unstable and precarious, looking for their own dimension in an increasingly competitive market. This is why Startups need partners able to support and accompany them towards the market, with long-term perspectives, in the mutual respect that is part of the ethical dimension of business without which nothing lasting can be built.
Innovation thus becomes synonymous with contamination. And the attitude to contamination is the essential element of the transformation we need. This is the basis of the model of open and harmonic innovation that inspires us. It is the alternative that allows big companies to work by creating constructive relationships with each other, start-ups and universities to create innovations that are truly fundamental to the challenges they face. For central and local government bodies to reconsider resources and growth trajectories for the common good. Ultimately to create a system in new ways to generate value and well-being.

Open innovation ecosystems allow all of these players to combine their strengths, budgets, and best practices to invent new solutions to the challenge of creating innovative, inspiring, and transparent technology.

Contamination, then, is the way to share the road to success. Which means: leaving the comfort zone, taking risks, betting on the new, opening up and welcoming, along a stormy and arduous path without being afraid to take the plunge, aiming for the top.

Harmonic Innovation. The new paradigm for digital, green and social transition

by *Antonio VISCOMI*

1. The order of the intense and prolonged works of this seminar suggests that we should try to share some reflections on harmonic organization, bearing in mind, however, that a great deal, really a great deal, has been said in the speeches that preceded me. I do not aim at the ambitious project of formulating some kind of conclusion to our discussion, that is, of enclosing topics that are complex by extension and problematic intensity in a few words, but by the complete awareness that conceptual innovation, the change - if you like - of heuristic paradigm, passes through the wise interweaving of perspectives, knowledge, cultures, visions - some time ago we would have said also of *Weltanschauung* - marked instead, from an academic point of view, by barriers and clear boundaries. In fact, rather than setting itself at a border point, harmonic innovation occupies a borderland. That is what it is: a place of transition, to represent openness and integration and to allow practices of hybridization, where instead the boundaries have to do with the closure of identity and practices of distinction, with little tolerance for nuances and uncertainties. Even in business organization. Even in the organization *tout court*.

2. Precisely because of its position in a borderland, it is necessary to avoid that distorted resonances or inertial approaches might weaken the new element embedded in the conceptual framework of "harmonic innovation". In this perspective, the first element to pay attention to is given by the term "harmony", whose ambiguities are certainly not veiled by the suggestive and euphonic character of the same term, such as to refer to an ideal world in which everything resonates and vibrates without being out of synch: it is not by chance that Harmony is mythical daughter of a renewed union of Ares and Aphrodite. The fact is that harmony has a plurality of meanings so much to expose itself, if not well understood and specified, to the typical instrumentalization of every neo-language, that is the one for which - as you would remember - *war is peace, freedom is slavery, ignorance is strength*.

3. As far as we are concerned, I believe it is important to point out from the outset that the term harmony, even (and indeed especially) when referring to a productive organization, has more to do with issues of "*sense*" than with the need for "*consent*": this, in fact, concerns the means; that, instead, concerns the ends. If we look closely, consent can be sought, sustained and consolidated even with proactive instruments (think of economic incentives) or coercive ones (by resorting also to punitive instruments). In short, it can be traced back (or scaled down) to the assumption of behaviors that are even only externally consistent with an expected code, without any regard to a sort of internalization or intimate adhesion to that same code. Sense, on the other hand, if considered in its belonging to the order of ends, imposes adequate consideration of the very meaning of individual and collective actions, of their deepest raison d'être as embedded in the sphere of experience, whether individual or collective.

4. This distinction seems extremely necessary when the complex scenario of a productive organization is in the background. In this specific context, in fact, the use of the signifier harmony could lead to significant misunderstandings. The productive organization is, in fact, the typical place of conflict. Suffice it to think of the conflict between authority and freedom: the very invention and legal construction of the subordinate employment agreement, as an instrument of integration of individual performance in a work organization, has had the historical function of founding and legitimizing, limiting it, the exercise of the employer's powers, that is, of allowing,

recognizing and protecting the exercise of a position of authority. To this end and in this way, it has been possible to transfer what is rooted in the concrete organizational foundation to the formal level of the agreement. And think again of the conflict between capital and labor: the industrial conflict has historically been, and in part continues to be, the driving innovation force. It is now generally recognized that the urgent technological innovation is correlated (also, obviously, but not only) to union struggles for better working conditions. It is not without significance that by some, now in times past, the law of collective labor relations has been reconsidered in the same way as international law and the same collective agreement assimilated to a sort of peace treaty, albeit temporary while waiting for a new conflict put in place with that formidable weapon that is the strike.

5. It seems to me that these brief recalls are sufficient to highlight the need for a strict control of the argumentation in order to avoid that the desired harmony may be resolved, in the end, with the instrumental elimination of the conflict of the productive organization through an emphatic exaltation of consent, if not of the identity of interests between subjects engaged in the same productive enterprise. It is worth remembering how the formulation of art. 2094 of the Italian civil code of 1942, in which the subordinate worker is defined as a "collaborator" in the enterprise (with all the ideological significance innervated in considering the conflict between capital and labor resolved in the perspective of the superior interest of national production), then finds its real limit in art. 2086, according to which the entrepreneur is the "head of the enterprise" on which "his collaborators" depend "hierarchically". Harmony is therefore the result of the transformation of a plurality of subjects into an ordered collectivity, organized on the military model, with a head, his hierarchical lines, which operates through orders whose execution is supervised by sanctions.

6. For these reasons, in my opinion, harmony is a term that asks to be appreciated in relation to the sense, the final value of the poietic action, creative and transformative at the same time, that animates, inspires and conforms a productive organization. It is not a matter of squelching the conflict, but rather of understanding the very perspective in which that conflict finds reason and meaning, going beyond the mere technical, technological and technocratic data and its claimed and exclusive rationality. To this end, it could be useful to look at the regulatory framework and compare art. 2082 of the Italian Civil Code with art. 4 of the Constitution. The former defines the entrepreneur as the person who professionally organizes human, instrumental and financial resources "for the purpose of producing or exchanging goods or services". Mindful of this rationale, the distinctive feature of entrepreneurial work is obviously that of technical and organizational rationality with respect to the market and this is why it is assumed that the entrepreneur is, as mentioned above, the hierarchical head of the company.

7. Article 4 of the Italian Constitution, on the other hand, takes a completely different view of labor, not only and not even so much as an object of contractual exchange, but rather as an instrument for the realization of one's talents and participation in the construction of the common city. For these reasons, work is not only a (social) right, but also - and this point is often overlooked - an (individual) duty towards the community. "Every citizen" - so says art. 4 - has the duty to carry out, according to his own possibilities and choice, an activity or a function that contributes to the material or spiritual progress of society". In the constitutional perspective, labor, protected in all its forms and applications (art. 35), is not only a technical activity but, if anything, a human experience that becomes most significant if and when set in a wider dimension. In this same perspective, harmony is no longer the result of the imposition of limits (such as, for example, the social utility mentioned in art. 41 of the Constitution as a limit that private economic

initiative cannot go beyond), but becomes a direction of sense, such as to recompose in an ordered universe what elsewhere appears to be the chaotic effect of industrial conflict and, even before, of a merely incremental most often autistic economic initiative.

8. In the perspective of sense, harmony is given by the suitability of the productive organization, understood as a technical factor, to operate proactively not only for the generation of value, but also for the promotion of the development of the human being and his/her potential, as well as for the social growth of the community in which it operates. Harmonious, therefore, is every innovation capable of contributing to the construction of a good society, of thinking about the common good, that is, how to ensure the set of those conditions of social life that allow both groups and individual members to reach their own perfection more fully and more rapidly: this is, as we know, the classic definition of the common good. For this reason, it can be said that harmonious innovation, insofar as it is attentive to the common good, goes beyond the purely corporate dimension to give back and return to individuals and communities. "Can industry give itself ends?" - Adriano Olivetti asked in his speech to the workers of Pozzuoli - "Are they simply found in the profit index? Isn't there, beyond the apparent rhythm, a destination, a vocation even in the life of a factory? We can answer: there is a purpose in our everyday actions. And without the first awareness of this end it is vain to hope for the success of the work we have undertaken."

9. For this reason I believe it is reasonable, after having pointed out its pertinence to the order of sense rather than to that of consent, to propose now, albeit in a brief way, a second element: if harmonic innovation is consistent with a demand for sense in human experience then it calls for overcoming the logic of *interest* and takes on the different perspective of *inter-being.* It is not a question, let it be clear, of denying the diversity of individual or group interests in the name of a superior interest that dissolves everything, nor of adopting a perspective that the overcoming of conflict intends to lead back to and reduce in the synthesis of opposites. If anything, it is a matter of understanding the radically, I would say ontologically, relational dimension of experience, and even before that of human presence in the various vital spaces in which it takes place. And also understand (and almost say: finally) the consequences of assuming a precise anthropological image as a parameter on which to model our living together. Just think of the evolution of economic research where it is now increasingly evident, on the one hand, that it is impossible to consider the idea of an individual, rational, omniscient agent who always seeks only the maximization of his or her interest (a monad, in short) as fundamental and, conversely, on the other hand, the progressive spread of the ambitious project proposed by the theorists of *behavioral economics*, that is, to bring together the acquisitions of economic, political and psychological sciences in a *unified theory of individual and multi-person decision theory.*

10. In view of this, it is necessary to avoid the error of drawing on traditional economic essays without realizing that the manual conceptualization of the free market not only does not exist but probably cannot exist in reality. For these reasons, too, there is a growing call for a stronger ethics of responsibility (towards creation and the creatures of today and tomorrow, always operating in contexts of limited rationality) as an alternative to recourse to the easier ethics of conviction (*et pereat mundus*, someone would have said). After all, I think it is well known the consolidation, in the field of the theory of games, of a particular analytical and heuristic consideration of the "strategic rationality" at the expense of the one traditionally called "parametric": the latter - as is well known - synthetically describes the maximizing behaviors adopted by individuals in the assumption that individual actions leave unchanged the environment in which others also make their choices; that, instead, takes its cue from the fact that the choices of individuals, insofar as

they modify the surrounding environment, are conditioned choices, that is, choices whose outcome depends on the interactions established with the choices of other operators.

11. Being in relationship is therefore constitutive of human experience which is meaningful and generates value when it does not close in on itself but opens itself to encountering what surrounds it. It took us many years to understand that organized economic activity also bears the burden not only of the commitment to avoid damage to social utility, but also, in a more meaningful way, of taking on social responsibility, in this way meaning the integration of ethical concerns within the strategic vision of the company, whether we are talking about CSR - in order to more effectively manage the problems of social and ethical impact within their internal and external scopes of application (this concept was first expressed in 1984 by R. Edward Freeman in his essay "*Strategic Management: a Stakeholder Approach*") - or looking in the different direction of the *B-Corp* where companies give up being organizations that extract value from the world for their exclusive benefit to become companies that not only give back but generate value for all *stakeholders*, first and foremost for the community of reference.

12. The Italian legislative formulation specifies that benefit societies are those which, in the exercise of an economic activity, in addition to the aim of sharing profits, pursue one or more purposes of common benefit and operate in a responsible, sustainable and transparent way towards people, communities, territories and environment, cultural and social goods and activities, bodies and associations and other stakeholders. People, community, environment: from interest to inter-being. I believe that these brief remarks are enough to confirm the fact that only that innovation which is capable of generating sense by placing inter-being at the center, that is, the awareness of the constitutive dimension of being in relationship with people, the community and the environment in which it operates and therefore of the responsibility that derives from it in the perspective of the common good, deserves to be qualified as harmonic. Even innovation, as open as it may be, remains closed within the proprietary and extractive logic of the company which, for these purposes, opens up to the outside world. Vice versa, harmonic innovation proposes that the same ends of the productive activity are rethought and introjected in a generative logic by the company that, for this, gives itself (and not only opens itself up) to the outside world.

13. It is quite evident that the harmonious approach to innovation is rooted in a precise anthropological representation and in an ethical aspiration: to create the optimal conditions for a good life, capable of allowing the various dimensions in which human experience is manifested to be realized in an integral and integrated way. After all, however, isn’t it true that economics, as a practical science that deals with the relations between men concerning the production, exchange and consumption of material goods and services, was already developed, for some essential features, by the ancient philosophers as part of politics? And isn't it true that political economy as an autonomous discipline began, so it is believed, with Adam Smith, professor of moral philosophy in Edinburgh, author of the treatise *The Theory of Moral Sentiments*, where he discusses the "sympathy" that cements cohesion among members of society? For this reason, reasoning about *Harmonic Innovation* necessarily leads us to reflect on a model of humanism capable of reconnecting the soul of man to technological development and orienting both to a responsible openness towards the world. This is why we need a new humanism, capable of taking charge of others and caring for the world. And we need it now that the potentialities and risks of digital innovation, artificial intelligence, big data, and indeed simple data, which now seem to be the gold standard of the 21st century, are starting to become evident, even to the general public.

14. However, it is quite clear, and I am about to conclude, that assuming a perspective of this kind does not mean proposing an ideal model of society to be regarded aesthetically as a praiseworthy utopia, but rather attempting to elaborate a framework within which the essential elements of economic and juridical-institutional life are allocated and shaped. To realize this, it is sufficient to propose a few examples. Think, for example, of the legal configuration of the meeting between employer and employee, traditionally ensured by an agreement of exchange that defines reciprocal rights and duties, in turn qualifying as an employment or self-employment agreement. In an organization oriented to harmonic innovation, the participation of the worker in the productive project of the company and the responsibility of the employer towards the working community called to realize that same project represent elements exceeding the mere logic of exchange, yet still not fully decipherable with the glasses of the positive jurist, nor - and this is a serious point to be taken into consideration - with those, even if possible, of the inspection authorities. The fact is that generating value by enhancing the participation of workers in the work objectives clashes with the question that for a long time, for too long, the jurist has been asking himself: does that worker work in a subordinate or autonomous way? Because from the answer to this question, as can be guessed, radically different and in some ways, indeed in many ways, even opposite consequences derive. The issue, for example, of work via platform shows how traditional tools do not always help to understand (let alone govern) digital innovations. The fact is that labor law was born to divide the hand from the press, to prevent the press from crushing the hand. But now? Now that the hand and the press talk to each other with *machine* or *deep learning* procedures, with sensors such that robots are now *cobots*, that the *human is* now increasingly *plus*, empowered? And what can we say about company codes, i.e., those documents in which the mission is intertwined with the company's vision and which pose and impose on workers behaviors, even in their private lives, that are consistent with the ethical perspective that the company believes to privilege and embody, so much so as to suggest the doubt that the contractual exchange no longer includes only work and pay but also other and different elements. And this is without considering the fiscal and corporate aspects that pose even more relevant problems: just think of the spread of forms of *work for equity* that translate personal work into a participation in the creation of corporate value, or the need to consider the specificities of start-ups marked by the high possibility of failure, as a normal fact of the creative game, yet considered by the legislator, except for small traits, as traditional businesses. It is clear that in the absence of an adequate legal-institutional framework, innovation will be slowed down and harmonious innovation will be brought back into the realm of a logic that has now passed.

15. And perhaps, on closer inspection, this is the real question. There are those who while setting sail always look back, as if to measure the distance, because that distance also marks their fear. And there are those who, instead, while setting sail look forward to the open sea; whether calm or rough, they know that the route must be traced by looking at the point of arrival, not the point of departure. My hope is that in the face of the great transition that marks these times of ours, we will drop out the attitude of those who look to the past, trying instead to find new paths. *Harmonic Innovation* is a possible path, for those who believe that the future cannot be created without rediscovering the profound unity that gives meaning to human experience. And it is a path that is compliant with the Constitution, which indicates the road to a well-ordered individual life and collective organization. It is Article 2 that traces the boundaries of this path, where it requires the Republic to recognize and guarantee the inviolable rights of man, both as an individual and in the social formations (including the company) where his or her personality takes place, but also to require the fulfillment of the mandatory duties of political, economic and social solidarity.

Fundamental inviolable rights and mandatory duties of solidarity. From the "I" to the "we": this is the necessary paradigm shift that makes human experience, be it individual or collective, harmonious.