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How to see the invisible?
The "methods" of the rights of nature to represent future generations

1.

The aim of our paper is to discuss the issue of recognising the rights of nature as a means of constructing "methods" for representing the rights of future generations.

To justify this hypothesis, we have to formulate three questions:

- why might the rights of nature represent the future?
- what do the rights of future generations mean?
- what are "future generations"?

In order to answer these questions we have to fulfil a double ontological prerequisite.

If we speak of nature as a "subject", the concept of "future generations" cannot exclude this "subject".

If we include nature, "future time" cannot be calculated only on the human existential dimension, because nature knows different and non-linear biophysical times.

We often consider the time of nature and human time in opposition to each other, since the former is eternal and cyclical, the latter is destined to die and is essentially linear. Moreover, nature needs much longer time than a human individual, a generation or a species.

Therefore, the human being is always in a disproportionate relationship with nature. We can control many natural phenomena, but we cannot control everything. We cannot control nature's time.

For this reason, the recognition of the rights of nature makes it possible to include the subject of nature's time in the legal discourse. It means that time is no longer an "object" of legal rules, but of nature. The "natural" time becomes the parameter of the legal rules and its times.

2.

This perspective may appear purely theoretical or philosophical.

However, although it may seem paradoxical, it is "formalised in law" in the 1992 UNFCCC.

The Framework Convention provides interesting insights into the relationship between human action, nature, and time.

Firstly, it provides an indirect understanding of what "nature" is. Nature is the climate system, i.e. the Earth system with all its component spheres (atmosphere, hydrosphere, cryosphere, lithosphere, and biosphere). The climate system is a constant flow of matter and energy that has made life possible. Thanks to the laws of thermodynamics and biophysics, we know that the human being is also part of this flow. Therefore, the human being is as much matter and energy as the entire climate system. He is a part of the climate system.

In other words, there is no human-nature "relationship". There is a thermodynamic and biophysical "common identity" between human "matter and energy" and terrestrial "matter and energy".

Secondly, the Framework Convention bases its regulation on the assumption that human action has made the climate system "unstable". For this reason, in Article 2, it identifies the objective of "stabilising" the entire climate system in order to exclude "dangerous anthropogenic interference with the climate system". This means adapting the legal rules of human behaviour to the timescales of the climate system, i.e. the "natural" timescales of the earth system, governed by thermodynamic and biophysical laws.

It is no coincidence that the Convention adds this clarification: the stabilisation of the entire climate system "should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner".
Consequently, respecting the "natural" timescales of the climate system also means guaranteeing the future of human "matter and energy", i.e. future generations.
In this perspective, the central point of the "rights" of future generations does not concern their social or political content, but the human availability of the times of nature, under the same conditions as the present.
This means that the question of the rights of nature is not linked to our understanding of the rights of future generations, for example in the "classic" distinction between "*Choice Theory*" and "*Interest Theory*". It is linked to the conception of time as an order of survival of all vital components of planet earth in a perspective similar to the "One Health Approach" (*Shanghai Declaration on promoting Health in the 2030 Agenda for Sustainable Develpoment*: 9th Global Conference on Health Promotion, Shanghai 21-24 November 2016).
Certainly, "rights of nature" as a subject means "subjective rights". But the expression "subjective rights" can have different meanings.
Let us try, for example, to use the so-called "Hohfeldian" scheme, developed by the American jurist Wesley Newcomb Hohfeld (1913), still considered valid today (Hart 1955).
According to Hohfeld, discourses formulated in terms of rights always refer to four distinct elementary legal positions, defined as: claim, privilege, power, immunity.
Where does nature as 'subject' fit into this classification?
Apparently, it only fits into the "claim", i.e. the fact that someone is obliged to behave actively, or by omission, towards the holder of the claim. The other elementary legal positions of the subjective right presuppose a capacity for action which nature, as such, has neither in terms of "privilege", nor in terms of "power", nor in terms of "immunity".
However, if we instead consider the time factor in the thermodynamic and biophysical flow of matter and energy, we discover that nature is not a "claim" at all, but a "power". In the "Hohfeldian" scheme, power is the possibility, on the part of its holder, to modify the legal position of others, or even one's own, so that power has subjection as its correlative, and the inability of others to prevent it as its negation. In the field of the laws of thermodynamics and biophysics, this is exactly how it is: the temporal dynamics of nature prevail over human laws and we humans are incapable of preventing it. Nature is "power".
This means that the rights of future generations do not mean the "claims" of future subjects on today, but the rights of nature as respect for its temporal "power": and the temporal power of nature is that of the entire climate system in its entanglement.
The entire climate system, the subject of UNFCCC regulation, is the "intergenerational good" par excellence.
In fact, this realisation of nature as "power" over human time has become evident with the climate emergency as an intergenerational problem of the climate system. In the climate emergency, the problem of "time" becomes a priority and cancels out any distinction between human being and nature (Kim 2021).
We know that the climate emergency calls into question the timing of the climate system The climate emergency formula E = R x U, developed by Lenton, Rockström et al. (Lenton et al. 2019-2020), describes the urgency of acting quickly so as not to activate "tipping points". Defined as "a critical threshold at which a tiny perturbation can qualitatively alter the state or development of a system" (Lenton et al. 2008), "tipping points" mark an abrupt change in the

equilibrium state of the various elements of the climate system. These tipping points produce three temporal effects:
- acceleration of transformations in natural systems;
- new and unprecedented living conditions for mankind and other species;
- the impossibility for humans to control natural processes.

"Human time' will change in these three effects. It will no longer be the same as present time. Even future rights will not be able to have the same characteristics as present rights because of the new conditions (think, for example, of the transformation of "climatic niches") (Xu et al. 2020). Respecting the timing of the climate system, means respecting all those who live within it and make up its biophysical dynamic. By respecting the biophysical dynamic, we respect ourselves, eliminating our "dangerous interference" with our future.

3.

The rights of nature are now widely discussed in legal theory. However, there is also a need to experiment with new "legal approaches". For UN Resolution A/69/322 of 18 August 2014, these approaches should draw "from the holistic scientific knowledge provided by earth system science to develop laws and policies that better manage human behaviour in light of the interconnections between people and nature" (UNGA 2014, para. 50). The Paris Climate Agreement, in Article 6 n.8, also suggests holistic approaches. More recently, even the Human Development Report 2020 has recognized that long-term sustainability is more than meeting quantitative targets of reduction of carbon dioxide emissions or of biodiversity loss: «We need to aim for transformative changes in how societies relate to the biosphere […] the goals of sustainable human development must be rooted in integrated, transdisciplinary understandings of the connections of societies in the biosphere» (HDR2020, p. 98).

Among other things, holistic, interactional and systems-oriented ontologies are inherent in many indigenous cosmologies that have long preceded the emergence of systems approaches in modern social and natural sciences. This also explains the link between the rights of nature and the question of recognition of indigenous rights.

In contrast, in all legal systems of the Western tradition, nature is an "object", a sum of elements other than human beings. Moreover, Western tradition considers the human individual to be a "historical animal" as opposed to the "static" and "fixed" nature. The Oxford Dictionary definition of nature, endorsed by organizations such as the OECD, speaks for itself: "Nature is the phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, *as opposed to humans or human creations*".

This is a legal fiction, rooted in the history of Western law, because we all know, thanks to thermodynamics and biophysics, that the entire earth system is a metabolism of matter and energy, which also includes the human being. Just as the human being is a thermodynamic force on nature, so nature is a thermodynamic force on society and human legal rules.

Consequently, discussing the rights of nature also means getting rid of the presumption that law must be "autonomous knowledge" from the natural sciences. This presumption is simply epistemic reductionism, which obscures reality. Environmental law is the most obvious manifestation of this reductionism. It claims to "regulate" nature, instead of "enforcing" nature's laws. In this, it is simply dysfunctional.

It is true that a systems-based and complexity approach to earth sciences has emerged in the Western tradition, especially when oppositions to mechanistic and Newtonian views of natural phenomena began to become prominent.

However, Western views have favoured an autopoietic view of complexity, as products of anthropocentric social and biological processes, within which law has become a tool for governing complexity, through the multiplication of its sectoral disciplines.
Therefore, the Western legal tradition has not elaborated the "sympoietic"' perspective of the indigenous cosmogonies.
But what does "simpoiesis" mean? "Sympoiesis" is a heuristic of the whole earth system. Heuristics provide essential tools for understanding living systems, their characteristics and their behaviour.
However, "autopoietic" heuristics are very different from "sympoietic". The term "sympoiesis" was created by the environmental scientist Dempster (Dempster 1998) to argue, in the light of ecosystem studies, that complexity consists of a collective production of actions and feedbacks that have neither spatial nor temporal boundaries that can be controlled by a single subject. In "sympoiesis", there is no "subject" and no "object". There are only subjects. After all, the term "sympoiesis" derives from Greek and means, "doing together". "Doing together" does not mean "interacting" but "coacting", in a real "symbiogenesis" of creation of matter and energy (Margulis 1998). In "sympoiesis", everyone is a "subject", but not in "autopoiesis".
The autopoietic perspective imagines a process of "self-reproduction" of a "subject" with respect to other "objects" external to it, thus creating a "system". Consequently, complexity would operate as a plurality of systems with four fundamental characteristics. They are self-reproducing in an independent and closed manner (e.g. law produces law, economy produces economy, etc.). Have self-defined and autonomous content (e.g. law is not the economy, the economy is not society, society is not the family, etc.), with different functioning mechanisms (e.g. law functions differently from the economy, the economy functions differently from society, etc.), which allow each system to reproduce and control itself independently of the others. In practice, autopoietic heuristics totally ignore thermodynamics and the biophysical fact that everything is matter and energy, regardless of the living "'system" considered (legal, economic, social, human, etc.).
On the contrary, the "sympoietic" heuristic interprets complexity as an integrated ecosystem of non-separable subjects, as they are all composed of matter and energy, just like the climate system. Just as the climate system has no boundaries, because it involves the entire earth system, so the idea of non-separability of human matter and energy and "nature" suggests that there are no boundaries within the climate system.
With this heuristic, there is no contraposition between subjects and objects. There is a sharing of biophysical conditions, which affect all subjects, human and non-human. Biophysical protection concerns everyone because everyone is "matter" and "energy" in the climate system.
A "biophysical" law cannot disregard this "sympoiesis".
In this perspective, we can understand why the recognition of the rights of nature does not produce the invention of a new subject as opposed to the human subject, but the "method" for sharing the common biophysical conditions of matter and energy between humans and non-humans.
In practice, by recognising the rights of nature, we recognise the "sympoietic" heuristics of the climate system. The rights of nature are the "magnifying glass" of this heuristic.
Within the climate system, all subjects contribute to its dynamics. Nevertheless, not all actors play the same role (Petersmann 2021).

Once again, the UNFCCC reminds us in its Preamble and Article 2 of this difference. Only humans have produced "dangerous" interference in the climate system, not other actors. Then humans must re-establish a responsible synergy with the other actors in the system, eliminating "dangerous interference".
The human being has only one way to achieve this "responsible symmetry". To answer for his actions in front of nature and not only in front of his fellow human beings; and, to do this, the only way is to recognise 'rights' also to other subjects different from himself: precisely the rights of nature.

4.
As is well known, law is a set of words and rules. If we do not share words, rules will not change reality. Our legal vocabulary is "unnatural"; it speaks of the environment as an "object" external to human life. It would be enough to agree that law must conform to the earth system as a flow of matter and energy to bring about a real revolution in legal language. As mentioned, the UNFCCC, in Article 1, contains legal definitions of thermodynamics and biophysics (in fact, it does not speak of "environment" but of "climate system"). This is also, why today, in the face of the climate emergency, the UNFCCC has become like a "picklock" for claiming the inadequacy of policies to terrestrial biophysics (i.e. the "stabilisation" of the climate system in its flows of matter and energy) in so called "climate change litigation strategies". If law and policy do not adapt to the biophysical conditions of the earth system, we have little prospect of changing our human condition on earth. Technology can help us, but technology is a tool. We need a legal system that reformulates the purposes of our coexistence in the earth system. The theme of the rights of nature has the merit of clarifying the dysfunctions of current environmental law.
Giving voice to nature means giving voice to the biophysical dynamics of planet earth. It does not simply mean protecting a "new" "vulnerable" subject. It means respecting the "laws of nature".
In this perspective, an "ecological analysis of law" becomes necessary.
Law must be interpreted and applied according to the acquisitions of thermodynamics and biophysics.
This requires the renunciation of the hermeneutic autonomy of law and the opening of law to the knowledge of ecology and earth sciences. Only a common path of evolution between legal science and earth sciences makes it possible to "give voice" to nature not as "other" than man, but to "give voice" to the unitary natural dimension of existence on earth, within a common destiny and which makes it possible to give "visibility" to the future time and thus to future generations.
In this subordination of legal knowledge to biophysical and ecological knowledge, the "sympoietic" rather than "autopoietic" perspective is realised. This perspective requires a radical discussion of modern legal categories.
Additionally it also requires a reorganisation of legal procedures and deliberative bodies. I will give an example: judging bodies should become multidisciplinary with equal discussion and voting rights. Not just judges, but ecologists, geologists, physicists, etc... Their function should be deliberative and not merely advisory. Not only that, but the reasons for the acts should not be exclusively legal but scientific, with the possibility of concurrent or dissenting decisions by all members of the body, including scientists. This approach would favour a new "holistic" episteme of a non-autopoietic kind.

In addition, a multidisciplinary body would make it possible to know the facts in their biophysical dimension and not only with regard to human interests.
It would not be a matter of entrusting decisions "to" scientists, but of deciding "with" scientists in a dimension of equal discussion and deliberation (precisely through the right of concurrent or dissident decision). In this way, the democratic method would also evolve as a method of knowledge of reality and not only of opinion. This perspective would give rise to a common awareness of the "rights of nature" as a dimension common to all living subjects, including the human being.

5.
In the "sympoietic" perspective, future generations does not only mean "human future". It means common biophysical conditions of permanence in the future time of "sympoiesis", with the absence, as the UNFCCC envisages, of "dangerous anthropogenic interference".
Currently, legal comparisons offer some insights into methods of recognising and applying the rights of nature from this perspective.
We can consider at least three possibilities:
- the "5-pillar" method of the "ecological mandate" (inspired by the Constitution of Ecuador)
- the precautionary method of the "climate mandate" (based on Article 3 no.3 of the UNFCCC;
- the ecological analysis of law.
We have already said that the "Rights of Nature" formula means the radical transformation of current law through a new paradigm of relations between subjects as "matter" and "energy".
This can also be summarised as an "Ecological Mandate", i.e. the recognition of new legal rules that promote change based on scientific knowledge about the Earth System Science and the rules of Nature.
The "Ecological Mandate", as a realisation of Earth Jurisprudence, is characterised by three elements:
(a) the introduction of the substantive rights of nature;
b) the identification of new rules and methods for the interpretation and application of law.
c) the introduction of the obligation to take the rights of nature into account in all policies, and not only in court decisions.
5) Rule of the five responsibilities towards nature, with reversal of the burden of proof.
These rules not only receive consensus in the international *opinio iuris*, but are also demanded by the natural sciences and ecology.
By introducing the Rights of Nature, the Law must not simply attribute a "value" to goods and functions. It must respect the rules of operation of these goods and functions. Through the Rights of Nature, the "imperative reasons of overriding public interest" concern the rules of functioning of the ecosystems on which everyone's life depends.
Ecological assessments are very complex, but scientists have identified the main ecosystem rules to be respected.
These rules are compatible with the "pillars" of the Rights of Nature.
Ecological analysis of law serves to verify that human rules conform to these rules of ecosystem functioning. In this perspective, for example, the introduction of "ecological impact analysis" of policies has been proposed.
However, the introduction of the Rights of Nature also changes the economic analysis of Law, as it imposes intertemporal economic assessments of the costs and benefits of any policy with

respect to the natural cycles of the Earth system. In this perspective, the economic analysis of the Rights of Nature is similar to the economic analysis of the rights of future generations.

6.

From all said thus far, it appears compulsory for the legal science to learn from all the new knowledge emerging from Earth System (ES) science; but also, from the ancestral knowledge transmitted through centuries by the chtonic legal tradition that still survives within indigenous peoples. As a consequence, a major reconsideration of the foundations of our constitutional systems, of legal personhood and of the concept of "subjective right" is required.

The sympoietic heuristic described above introduces legal scholars to a completely different hierarchy of values, in comparison to the ones at the basis of the social contract philosophy of the XVI century, from which constitutionalism was born. The fundamental goal of a constitutional system should be the preservation of the integrity of the Earth System (see above, § 2, and Camerlengo 2020). In fact, only since recent times the integrity of the ES has been rightly understood as the precondition for human survival as an individual and a species; whereas the autopoietic perspective that feeds the current legal framework simply equates the Earth System with the human environment, a set of physical elements that man can manage and model at his stake.

Kim and Bosselmann propose considering the protection and restoration of the integrity of Earth's life-support system «as a potential *Grundnorm* or goal of international environmental law» (Kim, Bosselmen 2013, p. 305). Nature as "*Grundnorm*" could guide the evolution of global constitutionalism (Carducci & Castillo Amaya 2016) as a set of rules on the permanence of rights over time (in Cooter's "strategic" meaning of Constitution 2000).

As Schmidt notes, the protection of the ES is a goal, from which to extrapolate a new *Grundnorm*, as a criterion of validity of the system's sources of production (Schmidt 2019, p. 728). The validity of norms no longer coincides with compliance with internationally assumed constraints, but with their conformity to the 'natural' rules that guarantee the stability of the ES (Carducci et al 2020, p. 170 ff.). So, in constitutional law, norms' legitimacy should be measured first of all having in mind the tipping points that scientists have indicated with respect not only to climate stability, but in general of the ES resilience, that is the capacity of maintaining or recovering the equilibrium that allows life as we know it to prosper on our planet. Climate change is in fact one among the nine indicators of the Planetary Boundaries Framework, even if, together with the biosphere integrity, both have been considered the two core ones, through which the other boundaries operate (Steffen et al 2015, p. 8).

It is quite evident that the acceptance of this new *Grundnorm* affects the formulation and interpretation of many other legal concepts.

First of all, the ES in herself should be considered a legal subject, as indigenous worldviews have always recognized the Pacha Mama. In fact, in ecology, different levels of organization of the living and non-living matter can be pointed out: individuals, populations (species), communities of populations, ecosystems and the ecosphere. Scaling up, the degree of complexity increases; scaling down, the degree of specialization increases. The hierarchy is not at all determined by the human nature of these components. Besides, the law is one of the most typical products of human societies, it is a cultural human phenomenon. This does not mean that law can only consider non-human components of the ecosphere as objects. On the contrary, it means that their legal status depends on which type of cultural relations we are able to recognize between ourselves and non-human individuals, species and ecosystems. The

"sympoietic" heuristic, the whole-systems approach on which rights of nature are based, the ES law approach, are all cultural frameworks that recognize the status of legal subjects to all elements that compose the ecosphere.

Odum introduced in this analysis the concept of "emergent property", that means that each level gains some additional characteristics from the layers below. Emergent properties do not correspond to the sum of the characters of all inferior unities, but are instead the product of their interrelationships. As already stated in § 3, all players in the game of life have different roles, but a hierarchy among the layers remains, and generates more and more complexity in the organization of living and non-living matter. From a legal point of view, this hierarchy is relevant when applying dispute resolution criteria into legal conflicts.

The legal tool that society has produced to solve conflicts among individuals without using violence is the concept of "right". In common law systems, where remedies precede rights, it is easier to understand why it is fundamental to recognize legal personhood to natural elements, in order to implement an ecological legal paradigm. In civil law systems, a right is an individual or collective claim legally protected by the law. The recognition of a situation abstractly worthy of protection by the legislator comes prior to the remedies. This means that a major cultural shift on the understanding of our role in the ES is necessary in order to pave the way for a legal change. Moreover, the same concept of "right" could appear inappropriate. The ecosphere, the ecosystems, the non-human species, they do not have any claims to make to the legislator. They simply exist and follow the intrinsic rules of survival in their DNA and the interdependency paths that evolution has forged. How humanity represents herself inside this framework, if as an insider or an outsider, does not depend on Nature's claims, but on our own cultural understanding.

At constitutional level, all rights have the same legal force, so balancing is the technique used to solve constitutional conflicts. Two different principles can be applied. The principle of proportionality requires limitations of fundamental rights to be adequate, necessary and proportional to the aims pursued. On the other hand, the principle of protection of the essential nucleus of fundamental rights prevents the total sacrifice of one of the conflicting rights.

At legislative level, conflicts of rights become conflicts of rules, and various criteria apply, among which there are temporality, speciality, competence and hierarchy. This last one gives preference to the superior source of law from which the discipline of the right comes from. As all subjects of law are humans (or equiparated to humans through the fiction of legal personhood) their personal status does not affect the applicability of these criteria.

When all "ecological" subjects are recognized as "legal" subjects, the different role they play in the organization of the ecosphere and in the resilience of the ES is relevant and must be taken into consideration, on a case-by-case method, when a conflict arises.

The ecological *Grundnorm* we have recognized obliges to prohibit any action or omission that affects the safe operating space for humanity (identified by the planetary boundaries framework or by the overcoming of the tipping points of the ES). This means that the balance of the ES should always prevail over the other legal subjects' rights. This corresponds in legal terms to the application of the "*in dubio pro natura*" principle, where "Nature" is holistically interpreted as the ecosphere.

Many scientific reports and studies have denounced that we have already crossed the safe operating space for humanity, at least in the two core indicators of climate change and biological integrity. As a consequence, the "*in dubio pro natura*" criterion must be declined in two sub-principles: "*in dubio pro clima*" and "*in dubio pro conservatione*". This last one was already recognized by the CITES with respect of biodiversity and in principle 5 of the

ecosystem approach endorsed by the COP of the Convention on Biological Diversity UNEP/CBD/COP/5/23). Biodiversity is the engine of evolution in the planet. Moreover, we are not still able to understand all the complex relationships and feed-back loops deriving from the interaction of all the levels of organization of the ES, so the precautionary principle should be called to justify not only the preference assigned to the protection of species from extinction, but in general the preference of the solution that guarantees the highest rate of biodiversity, even if not at risk of extinction.
If the ecosphere stability is not endangered, in order to determine which competing right must prevail, we have to look at the status of the legal subjects involved, following the hierarchy of living and non-living components of the ecosphere. Ecosystems' stability must prevail over species' and individuals' rights; and the species existence must prevail over individuals' rights.
Only when the previous conditions are satisfied, a safeguard clause in favor of human rights should apply. The common condition of vulnerability of all individuals and species in front of a planetary ecological disaster justifies a restriction of the "*pro-homine*" principle. But from a "sympoietic" perspective, even when only human interests are in conflict, dispute resolution principles must be applied taking into consideration that human actions are never ecologically neutral, and always co-create the relationships with other forms of matter and energy. For this reason, proportionality should become "eco-proportionality" (proposed by Gerd Winter 2013) and the defense of the "essential core" of human rights must always try to reach a reasonable balance with Nature's rights and to preserve the fundamental right to life of non-human individuals.

7.
The concept of "emergent property" cited above is an ecological reason for which in a new legal paradigm inspired by the ecological mandate, not only the concept of legal personhood should be reframed, but also the definition of "rights".
In § 3 we have explained that the sympoietic heuristic represents life as a never-ending process of creation of matter and energy resulting from the co-action of all the components of the ecosphere. So, we are not only interdependent as for our survival, but also co-creators of the system in which we live. This means that the most important function in the ES is the set of relationships existing among all its components. The stability of the relations of interdependence and co-creation among individuals, species, communities and ecosystems should be the main goal of policies and rules. So "relation" must shift from the periphery of law to the centre of its institutional tools.
However, from a legal point of view, this goal is very complicated to be reached with existing legal instruments, because the concept of "right" has been defined in terms of individual or collective "claims" that clash with opposite claims of other subjects. So, the concept of "rights" generates an adversarial and confrontational system of dispute resolution, where (usually) a part wins and the other succumbs. As stated in the EESC Report "*Towards an EU Charter of the Fundamental Rights of Nature. Study"* «We also need to reframe rights from adversarial to synergistic, moving us from "rights" to "right relationship", a "right relationship" being one that supports the wellbeing of the whole» (Carducci et al. 2020, p. 10).
So, in which way can we legally protect the relationship between the parties instead of focusing only on their singular claims? In order to answer the question, I will try to analyse different academic contributions on the idea of a "relational approach to law". Even if the

concept has been mainly applied to solve intercultural conflicts among humans, its premises can offer meaningful insights into the process of shifting to an ecological legal paradigm.
In the introduction to her seminal book *Law's Relations: a Relational Theory of Self, Autonomy, and Law*, Jennifer Nedelsky hopes that the audience of her book could be formed also by environmentalists because, as she stresses, "*The very concept of ecology is relational*" (Nedelsky 2011, p. 12). Meeting those expectations, her arguments will be applied to our proposal, as a powerful step in the direction of a re-orientation in how we shape and understand our world. By re-defining the self from a relational perspective, she supports a new concept of law and a new language for rights[1]: «A relational analysis provides a better framework for identifying what is really at stake in difficult cases and for making judgments about the competing interpretations of rights involved […] Both law and rights will then be understood in terms of the relations they structure—and how those relations can foster core values, such as autonomy. (p. 4)
One of the main difficulties is to understand "relation" not in opposition with "autonomy". In fact, the more common understanding is that the claim for autonomy is a reaction to the limits and constraints posed to the self by the community in which one lives. On the contrary, the author tries to defend a relational concept of autonomy, that generates from the relationships in which the self is always re-created. She not only focussed on how the law can shape our relations, but also on a relational approach to rights, because rights' rethoric appears to be universally accepted and applied, even in undemocratic context. The relational approach can be used to enhance some core values such as autonomy and equality and, moreover, it produces some new values such as care (p. 82).
In her studies about Singapore's relational constitutionalism, Li-ann Thio starts from the premise that even among legal scholars the model of contemporary Western liberal constitutionalism is intrinsically considered as hegemonic and taken as a granted point of departure for every constitutional analysis. Instead, with the aim of pluralising the idea of constitutionalism, she considers the Singapore experience as a valuable and original product of a different cultural and legal sensitivity, based on non-liberal views: «be is to exist in relation to other beings and relationalism prioritises the longevity or durability of mutually dependent relationships, rather than
treating relationships as discrete short-term transactions. (Thio 2019, p. 233)
Even if the main objective of relational constitutionalism in Singapore is managing inter-group conflicts and assure religious harmony, its cultural basis and the methods followed to reach the goal can offer food for thought on how to shape the ecological legal paradigm. First of all, relational constitutionalism focuses on the maintenance of a peaceful relationship within and among religious groups: «a primary goal of relational constitutionalism relates to sustaining healthy, durable, on-going relationships—in this universe, rights co-exist with other-centric responsibilities, reciprocity and the common good […] The vision of the individual within a relational framework is not the vision of an atomistic rational being asserting rights against the state, which many liberal theorists favour. Instead, individuals are situated in communities, shaped and constituted by the network of relationships they interact with and are fundamentally connected to (Thio 2019, p. 206-207).
Following Thio's arguments, a constitution that imposes specific values, or better, a particular idea of what is good, such as environmental conservation, must be ascribed to non-liberal

[1] My point throughout is that law needs an alternative conceptual framework to do its work optimally, and new concepts need to be given life in the law. (p. 4)

Constitutions, where the State pro-actively encourages the formation of a collective identity among citizens based on selected values. So, depending on the specific ideas that the State puts at the basis of the common identity of the people, different non-liberal forms of State can be classified. We could consider the stability of the ES as the common value at the basis of a sustainable and harmonic society, where people are aware of their vulnerability and interdependency with respect of the other non-human livings, and the matter and energy we co-produce by our interactions. As in Singapore's relational constitutionalism, the maintenance of social harmony would not be guaranteed by the judicial protection of atomic individual rights, but by the preference for solidarity and care responsibilities among all legal subjects of this relation. This idea corresponds to the interpretation Silvia Bagni gave of the constitutional architecture of the State designed by the new Constitutions of Ecuador and Bolivia in 2008 and 2009, that she called Caring State. Not by chance, this concept emerged as attached to experiences that were incorporating the Rights of Nature into the legal system, both at constitutional and legislative level. The Caring State was based onto two main pillars: environmental and social justice. These goals were to be understood in the light of what we have called in this article a "sympoietic" perspective. In fact, "environmental justice" was intended in a broader sense, opposite to the international idea of the "environment". Its foundations are rooted in the indigenous cosmovisions that consider the Pacha Mama as a subject. Meanwhile, the Caring State, as plurinational and intercultural, embraces a more powerful concept of social justice, giving voice and representation to the most vulnerable members of the society, including indigenous and afro-american peoples.

However, the Caring State has been trapped in liberal structures and legal mechanisms, being unable to develop original forms of interaction. Singapore's relational constitutionalism could be helpful in highlighting an original path of implementation for the Caring State.

Relational constitutionalism in Singapore is aimed at pursuing religious harmony through soft constitutional norms, that is non-binding acts and documents, that suggest common principles of behaviour and call for the responsibilities of citizens. When this type of norms are widely accepted, they determine the limits of anti-social behaviour. Disobedience can be pursued by public rebuke and shame, and also by temporary exclusion from the community. This same mechanism can be seen in the idea of traditional justice among indigenous peoples, where the goal is to preserve harmony within the community and forgiveness is a fundamental part of the restoration process. From this perspective we could consider that "soft constitutional law" (as defined by Thio) can be used as an instrument for implementing the ecological paradigm. Of course, we cannot imagine to tackle climate change and the environmental crisis only by soft law or nudge. However, the stick must go with the carrot. As a radical change in our own lifestyles is the indispensable premise of every legal change, we absolutely need to install into people a renewed sense of belonging to a community of livings, where everyone gains from the others' good. So, concrete experiences of co-living in harmony with Nature, such as the public rituals of reconciliation between the religious chiefs in Singapore, can help to strengthen this sense of a shared fate, that at the moment seems lost among the recrudescence of State particularisms and populisms. To this aim, another formulation of relational constitutionalism can help to build a methodology for enhancing relationships over individual claims.

Peggy Cooper Davis compared American and South African constitutionalism under the lens of feminist critique, in order to explain why South Africa after apartheid produced a reactive Constitution, in Ackermann's terms, whereas the same did not occur in the US with slavery. She argues that in the US people were no more able to think relationally, recalling Carol

Gilligan's work on the rejection of relational thinking in public spheres. Both authors support their position on a patriarchal interpretation of the history of human development. Besides, what is interesting for our purpose is the explanation on how we conceptualize public issues, such as the environmental and climate ones. Reasoning from a position of detachment, proper with individualism and rationalism, affirmative actions can be perceived as investments only if directed to the benefit of the self. Otherwise, they will always be seen as a sacrifice. «But if I share a bond of community with those who benefit from my tax dollars, and if I value our collective well-being, then, once again, I can feel that I have made an investment rather than a sacrifice» (Cooper Davis 2008, p. 248). This does not mean at all a total sacrifice of the self. On the contrary, «maintaining the voice of the "I" is necessary to the health of the "we"» (Cooper Davis 2008, p. 250). This approach totally corresponds to the basic rules of the ES, and encourages to take a holistic view over our choices and actions, considering ourselves as part of the whole, that never correspond to an arithmetic sum of each unity.

Last but not least, a different legal paradigm based on the principle of "relationality" comes from Andean jurisprudence. Maria Elena Attard Bellido imagines a dialogue on legal pluralism between two Goddeses: Themis, the Greek Goddes of Justice, and Mama Ocllo, the female ancestor of the Inca culture. Themis explains to Mama Ocllo the origins of liberal constitutionalism. Mama Ocllo, on the other hand, offers the epistemological tools for an intercultural translation of her legal argumentations, based on a plurinational, communitarian and decolonizing perspective (Maria Elena Attard Bellido 2019, 93). This alternative jurisprudence rejects the binary code of legal disputes, in favour of solutions that defend harmony and sustain the "vivir bien". Within this understanding of the law, jurists are called to "feel the reality", before and above "knowing" or "thinking" it[2]. Knowledge is the result of collective experiences and practices, transmitted through generations. The author proposes to apply to the analysis of legal conflicts the methodology of the *chakana*, that represents the Andean Cosmovision. The *chakana*, as an intercultural interpretative tool, invites the lawyer to consider the legal facts from the four dimensions of: being (ser), knowing (saber), doing (hacer) and power (poder). This multidimensional approach (sentipensar, "thinking our feeling") guarantees the harmony of the human being with his environment, and aims at the realization of the vivir bien. This methodology aims at reaching the jaqi[3], a solution that produces a balance between the parties in conflict. The four dimensions of life are interconnected by principles such as relationality, correspondence, complementarity, reciprocity, that together build a relational logic.

We are sure that a relational approach to law could be seen by many as a dangerous erosion of individual rights and freedoms; by others it could seem utopic. As for the first critique, we have tried to explain with the concept of "sympoiesis" and the new hierarchy of conflict resoultion criteria, that the individual is not erased by our proposal, but instead powered by its relational dimension, that can foster a more inclusive and respectful community. As for the second critique, we are deeply convinced that our mental structures of thought produce a strong impact on how we behave. It's more, our language, as a product of our thinking, shapes our behaviour. So, we absolutely need to create a "habit of relational thinking". This can generate a shift in our epistemological paradigm, from a liberal to a relational/ecological one,

[2] «desde esta ética aymara, el runa/jaqi —el ser humano como parte de la naturaleza— siente la realidad, más que conocerla o pensarla» (Josef Estermann (2009), cited by Maria Elena Attard Bellido 2019, p. 93).

[3] «propugna una decisión jurisdiccional que tenga la finalidad de consagrar el jaqi, lo que superaría la lógica binaria de las partes ganadoras y perdedoras en un litigio —que, por cierto, en pocas ocasiones contribuye a la paz social en términos de armonía y equilibrio— (Maria Elena Attard Bellido 2019, p. 97)

in order to expect from humanity a real change in the pattern of consumption and exploitation of our Planet and our fellows.

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