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# Towards a relational view of corporate governance to preserve the biosphere

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## **Abstract**

Given the ecological emergency, companies have to consider the interests of the biosphere in their decision-making processes. Protecting the biosphere implies adopting a vision of the world in which this sphere embraces and restricts the social sphere, which itself frames the economic sphere, and in which all human and non-human actors should be considered (Petit *et al.*, 2022). We show that recent developments in French corporate governance practices, while allowing them to better address ecological issues, do not embrace this worldview developed by the field of Ecological Economics that we adopt in this article. According to this framework, corporate governance needs to include representatives of the biosphere in its decision-making structures, which poses challenges insofar as it implies allowing non-humans to have their say. Several proposals have been put forward to “green” companies by including employees, local populations or scientists in their decision-making processes. We show that each category of stakeholder cannot ensure the representation of the biosphere's interests on its own. Since talking about the biosphere implies considering the interdependencies within it, only a diverse collective, a common, seems relevant to represent its interests. However, giving a place to biosphere representatives does not prefigure the real political power of these representatives over corporate decisions. As the consensus-building process tends to lead to the triumph of economic interests over ecological interests (Nyberg and Wright, 2013), it seems justified to us to allow a veto right to these representatives, in line with Banerjee's (2018) proposals.

*Keywords: corporate governance; environmental sustainability; boards of directors; biosphere; collective action.*

## Introduction

According to the Stockholm Resilience Center, six out of nine critical variables regulating the stability of the biosphere now exceed the critical limit. These variables, also called “planetary boundaries”, describe the conditions under which a “safe and just” development for the human species can be guaranteed, and the more boundaries are crossed, the higher the risk of large-scale abrupt or irreversible environmental changes that will make our planet unfit for Human life altogether. Although companies are showing increasing concern for ecological issues, their investments in this area remain below the effort required to achieve the objectives set, even though they represent an essential element in the protection of the biosphere. According to a recent study conducted by IFA, ORSE and PWC among a sample of directors of French companies, in 64% of cases, climate issues are never or rarely taken into consideration in board decision-making processes, even though the urgency of taking this environmental variable into account seems to have been established, especially since the Paris Agreement of 2015. Even though, very recently, the issue seems to be put on the agenda of French listed companies' boards of directors for 2023<sup>1</sup>, there is indeed a growing need to design governance frameworks to make companies' management responsible (Lokin and Veldman, 2019) and to increase their capacity to make decisions for a truly sustainable planet and to act accordingly.

Lately, several French regulatory developments have sought to further integrate ecological issues into the internal governance mechanisms presiding over the decision-making of managers: the integration of ecological issues into the law and corporate governance codes, and the model of profit-with-purpose corporations (the *société à mission* model). This article seeks to identify to what extent these different developments allow for a more effective protection of the biosphere. Protecting the biosphere being the primary concern of the Ecological Economics (EE), as a condition to the viability of the Economic sphere, we chose to adopt this theoretical framework in this article. In the perspective of EE, indeed, the economic sphere is embedded into the social sphere, which is itself embedded into the biosphere. From this perspective, the reproduction of the economic sphere has to be managed on the condition that the reproduction of the social sphere and the biosphere are jointly ensured (Passet, 1979). We will show that the

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<sup>1</sup> <https://www.lesechos.fr/economie-france/conjoncture/exclusif-le-patronat-revise-son-code-de-gouvernance-pour-integrer-les-enjeux-environnementaux-1890721>

most recent developments regarding corporate governance do not meet the requirements of EE, which requires the biosphere to be formally represented within the corporate governance structures. We adopt Aguilera *et al.*'s (2021) definition of corporate governance “as the distribution of rights and responsibilities within the firm, which entails allocating power and resources to different corporate actors and managing the inevitable tensions among these actors (i.e., owners, management, board, and employees)” (Aguilera *et al.*, 2021, p.1469). The representation of the biosphere raises difficulties as it implies “allocating power and resources”, then “giving voice” to actors who cannot express themselves or elect representatives: the non-humans. How non-humans are represented depends on the status and power accorded to them. In other words, the conception of the relationship between humans and non-humans (in terms of discontinuities and interactions) conditions the form of representation of non-humans on the part of humans. However, this definition is not stable, as Latour (2004) points out, and as is shown by the diversity of terms used to refer to this relationship. The terms environment, nature, biosphere or even Gaia convey different conceptions of this relationship between humans and non-humans, different cosmologies in the philosophical sense of the term. We will show that to ensure the preservation of the biosphere, one single type of actor is not enough to represent its interests. Discussing the biosphere implies considering the complex and interdependent relationships between stakeholders within ecosystems rather than the stakeholders themselves, and as a consequence we propose to work on a representation of the biosphere through a diverse collective (Rambaud and Richard, 2021). It seems to be a fruitful approach, notwithstanding the difficulties of practical implementation, which we will try to uncover. Indeed, the precise composition of this collective remains a complex issue. Also, giving a place to representatives of the biosphere does not prefigure the actual political power of these representatives within the Board of Directors (BOD), whose decisions could lead to a consensus incompatible with the preservation of the biosphere.

## **An Ecological Economics perspective on Corporate Governance recent developments**

We adopt the theoretical framework of EE as it allows us to go beyond the modern vision of the world in which the environment is considered as a sphere external to economic activities, natural resources being liberally extracted and then disposed of together with used manufactured goods as if were a public dump. After detailing the main concepts developed by

the field of EE, we will assess to what extent recent developments in French corporate governance practices meet the requirements of EE.

### a) Ecological Economics: beyond the “environment as extra partes”

An interest in protecting the biosphere requires a clear definition of the term. The notion of “biosphere” was introduced by the proponents of Ecological Economics. This field developed from the 1980s onwards in response to the limitations of the so-called "modern" world view on which Environmental Economics was based.

The field of Environmental Economics considers environmental problems as economic problems that must be solved by applying neoclassical economic tools such as cost-benefit analysis and regulation by the market (Berta *et al.*, 2021). The environment is seen as an external set of resources for economic and social activities (Figure 1). This so-called “modern” worldview is broadly speaking based on Descartes' (1637) philosophical definition of nature: nature is made up of a multitude of inanimate components that are alien to each other; it exists *partes extra partes*, and humans should become “as masters and

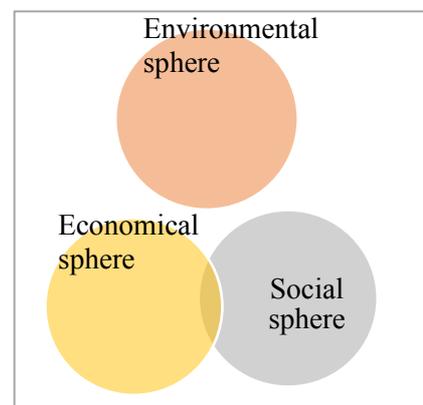


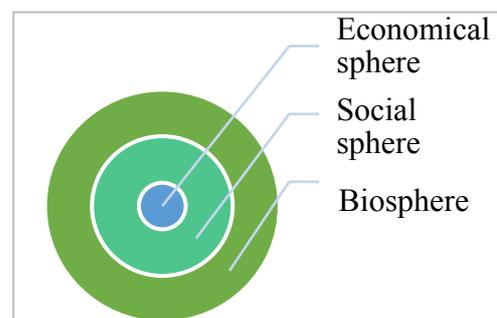
Figure 1: Environmental Economics' worldview

possessors” of it by means of science. The fact of representing non-humans evolving in an external and independent way from the humans allows us to consider them as resources and not and not as “partners” with which humans evolve in interaction. Representing the environment as external is therefore a form of denying the implications of human activities on the balance of the biosphere, and in turn denying that human life depends on this balance. Thus, in companies, the managerial applications of this conception consist in caring for “the environment” only to the extent that its degradation could give rise to claims from “injured [human] stakeholders” (Richard and Rambaud, 2021, p.141). Several critics have stressed the deleterious consequences of this representation of the world in economic models. As an example, Couix and Giraud (2021) denounce the results of Nordhaus's DICE model, according to which a 6° rise in average global temperature by the end of the century would only result in a 10% loss in GDP. Indeed, they point out that “a +6°C rise in temperature would mean the melting of the Siberian permafrost, which would lead to the release of the methane it contains, resulting in the disappearance of humanity in the short term” (Couix and Giraud, 2021, p.24).

Ecological Economics differs from Environmental Economics in that it considers the social and

economic spheres to be embedded in the “biosphere”. The biosphere represents the fraction of the Earth on which terrestrial life is located, where humans and non-humans co-evolve within what EE calls “socio-ecological systems”. These systems “are the result of interdependent relationships that associate elements of the natural environment (ecosystems) with the organization of human societies that shape them and depend on them” (Petit et al., p.62). It is this “set of ever-changing feedback loops” that Latour (2015) named Gaïa, borrowing a concept coined by James Lovelock in the 1970’s. The biosphere thus encompasses the social sphere, which in turn contains the economic sphere, and these three spheres interact. This idea was already present in Polanyi (1944), who emphasized the primary nature of the environmental issue in economics by defining the economy as “an institutionalized process between man and the environment resulting in the continuous provision of material means to satisfy needs”. For him, the economy is embedded in the social (“institutionalized process”), which is itself embedded in the environment (“man-environment relations”).

Passet (1996), who drew up this diagram (*Figure 2*), prefers the term “biosphere” used by the ecologists to that of “environment”, because this notion implies a definition in relation to another system on the basis of which the boundaries are defined, and which is therefore anthropocentric (Vivien, 2019). Representing these three spheres as concentric allows us to account for their hierarchy. The economic and social spheres



*Figure 2: Ecological Economics' worldview*

cannot exist autonomously without the biosphere, while the reverse is true. For the proponents of Ecological Economics, this biosphere has the particularity of not being extensible. Among the founding economists of the Ecological Economics movement, Georgescu-Roegen (1971), who was trained in Mathematics, applied the rules used in the Physics and Biology to the study of economic processes, in particular the Thermodynamic Entropy Law, to show the impact of the production process in terms of energy. Production transforms “free” (usable) energy into “bound” (unusable) energy in an irreversible way. In his view, given the state of depletion of natural resources, neither “sustainable development” nor “zero growth” will succeed in keeping the planet fit for living. Indeed, the development of our industrial economy depends on non-renewable energies and mineral raw materials with a limited life span, which must therefore be replaced, “so that, necessarily, the 'endowment' of all humanity is irrevocably exhausted” (Grinevald and Rens, 1995, p.14). In this vein, Passet (1996) therefore advocates

for a “bioeconomy”, in which the reproduction of the economic sphere would be managed on the condition that the reproduction of the social sphere and the biosphere are mutually assured.

For companies, this vision would therefore imply pursuing only those activities that would not harm the proper reproduction of the biosphere. The offsetting measures widely used today by companies to counterbalance the negative effects of their activities on the biosphere are not compatible with ecological limits. This implies that companies must be able to assess the extent to which their activities are compatible with the reproduction of the biosphere, and therefore develop a knowledge of the ecosystems with which they interact and subject their productive investment decisions to this. This can lead to tensions as companies would potentially have to abandon activities that are beneficial from an economic point of view (e.g. because they are sources of profit) and/or from a social point of view (e.g. because they provide employment). It is therefore necessary from this perspective to address the issue of the “distribution of rights and responsibilities in companies”, to quote the definition of corporate governance proposed by Aguilera *et al.* (2021, p.1469).

## **b) To what extent the recent developments in French corporate governance practices meet the requirements of Ecological Economics?**

Recently, several French regulatory developments have aimed at a better integration of ecological issues into the decision-making of managers: the integration of ecological issues into the law and corporate governance codes, and the model of purpose-driven corporations (the *société à mission*). To what extent do these different developments meet the requirements of Ecological Economics and allow for a more effective protection of the biosphere?

### **The integration of the environmental issue in law and governance codes**

The 2019 PACTE law (*Plan d’Action pour la Croissance et la Transformation des Entreprises* / Action Plan for the Growth and Transformation of Business Enterprises) stipulates that the company must be “managed in its social interest, taking into consideration the social and environmental challenges of its activity”, and that “the board of directors determines the orientations of the company's activity in accordance with its social interest and taking into consideration its social and environmental challenges, and ensures their implementation”. However, it does not specify to what degree these social and environmental challenges should be integrated into decision-making. The two governance codes that are the rule in France seem incompatible with the theoretical framework of EE. Although the MiddleNext code stresses in

the introduction to its latest version of 2021 the need to create a committee dedicated to Corporate Social Responsibility (CSR) and to train directors so that they are competent to “take account of climate change”, the biosphere does not seem to be conceived in this code as a boundary for economic and human activities but as an economic resource, with CSR being described as a “lever for economic performance” as soon as its “postulates” are presented (p.6 of the 2021 version). Furthermore, the ifa-Orse-PwC 2022 barometer shows that ecological issues are still poorly integrated into decision-making: more than half of board members reveal that the conclusions of consultations with stakeholders “are only occasionally, if at all, taken into account in decision-making”.

The recent version of the corporate governance code for listed companies (AFEP-MEDEF Code) claims to “place CSR strategy, particularly with regard to climate change, at the heart of the board's missions”. A new section entitled “The Board of Directors and Social and Environmental Responsibility” stipulates that “on the proposal of the General Management, the Board of Directors shall determine multi-year strategic orientations in terms of social and environmental responsibility”, which does not seem to go much further than the PACTE law. On the contrary, by specifying in this same section that the board may modify the objectives or the plan of action proposed by management “in view of the evolution of the company's strategy, technologies, shareholders' expectations and the economic capacity to implement them”, the code endorses a modern vision of the world in which economics occupies a hegemonic place.

In the end, only the company's actions are questioned, without questioning its values and objectives, highlighting a “simple loop” reflexivity (Veldman and Willmott, 2016). The creation of shareholder value remains therefore the basis for evaluating governance practices.

### **The *société à mission* model**

The *société à mission* model introduced by the 2019 PACTE law is interesting since it allows companies to include in their articles of incorporation a mission related to social and environmental issues and to set up a mission committee to act as guarantor. Levillain *et al.* (2021) characterize this evolution of governance by mobilizing the notion of management norm, defined by Hatchuel and Segrestin. The idea is that the manager can be held responsible if he or she has not done everything possible to avoid the risks generated by his or her decisions, in light of the body of knowledge about these risks at a given time, a “shared managerial corpus” that would be developed by the mission committee and, more generally, by standardization bodies.

Nevertheless, this corporate governance innovation does not yet seem to reach the objectives of EE. There is currently no guarantee indeed that the mission includes objectives set out to a strict preservation of the biosphere, nor that all the company's "stakeholders", especially those affected by the ecological impacts of its activities, are formally invited to contribute to the definition of the mission at first (Levillain *et al.*, 2022). Thus, in the case of a company whose mission would be made of social commitments but no ecological objective strictly speaking, control would be restricted to the aforementioned commitments (Levillain *et al.*, 2021) and the impact of the companies' activities on the biosphere would be overlooked. Moreover, even with a mission committee designed to promote the preservation of the biosphere, the law would not provide it with sufficient decision-making power. According to Article 210-10 of the French Commercial Code, the mission committee "is exclusively responsible for monitoring the execution of the mission"; "presents an annual report, attached to the management report, to the meeting responsible for approving the company's financial statements"; and "carries out any verification it deems appropriate and obtains any document necessary for monitoring the execution of the mission". In practice, even if the Danone-Faber case study (Levillain *et al.*, 2022) reveals that the mission committee played a robust role as a counterweight to the shareholders, allowing the company to maintain its status as a *société à mission*, one might think that its capacity to oppose the shareholders is more attributable to the individual profiles of the committee members than with the remit of the committee as such. In the case of Danone, its mission committee is composed of "representatives or former representatives of prestigious international organizations", an employee and a union representative "known for their ability to provide critical feedbacks" and voice concerns).

We have shown that recent developments in terms of corporate governance, while they do allow for a greater consideration of "environmental issues" in economic activities, do not meet the expectations of EE, in which the biosphere encompasses and limits human activities. In our view, as long as the biosphere is not formally represented in corporate governance structures, it will remain an external "stakeholder" in a modern worldview that is incompatible with effective biosphere protection.

## **Innovating in CG modelling to ensure the viability of the biosphere: looking for new ways to include biosphere representatives in Boards**

If we take seriously not only the interdependence of the biosphere and economic sphere but also the fact that the biosphere encompasses the economic sphere, it then seems relevant to us that the biosphere should be formally represented in the corporate architecture, and even status and purpose (Veldman, 2019). “Our findings suggest that if the interests of ‘the environment’ are to be treated equally in decision making, it may be necessary to ensure that the environment has human representatives with an explicit mandate” (Tomlinson *et al.*, 2020, p.2). However, as mentioned above, representing the biosphere raises difficulties as it implies giving a voice to non-humans, i.e. designating legitimate spokespersons without the possibility of their being elected by the community they represent.

The boundaries between the different spheres (their existence, and their place) are a matter of collectively constructed conventions. Latour emphasizes the political character of the definition of “Nature”, as what he calls a “constitution”, the “distribution of beings between humans and non-humans, objects and subjects, and the kind of power, speech capacity, mandate, will they receive” (Latour, 2004, p.360). By representing the three spheres as concentric, the distinction between the biosphere and the social sphere becomes thinner, since part of the biosphere is social, but it still does not clarify the boundary between what would be social and what would be non-social. Is the social/non-social distinction equivalent to the human/non-human distinction? Who can represent the biosphere? If shareholders represent the interests of the economic sphere, and employees those of the social sphere, who would be the legitimate representatives of the rest of the biosphere? According to Favereau (2019) and Ferrerras *et al.* (2020), making the representation of employees equivalent to that of shareholders would make corporations more attentive to ecological issues. Moreover, the latest Intergovernmental Panel on Climate Change (IPCC) report (2022) emphasizes the need to include local and indigenous populations in decision-making. Finally, for Richard and Plot (2014), “scientists [...] should play a major role” (p.38). We will discuss here the potential for these actors to represent the interests of the biosphere.

## **a) Who is capable of standing for the biosphere?**

### **The Employees?**

Employees should be more concerned with the sustainability of their company than with the short-term profitability of its activities. One might therefore think that a company giving more weight to employees in decision-making would move towards a more sustainable trajectory, and therefore more respectful of the environment. In the collective work *Manifeste travail: démocratiser, démarchandiser, dépolluer* (2020), the authors assert that “the democratisation of work” should make companies more responsible towards the planet. Their main recommendations are based on the model of economic bicameralism proposed by Ferreras (2012). She considers that companies are political entities made up of two antagonist classes of investors: on one side, the capital investors, and on the other side, the labour investors”. Based on the observation that only capital investors have decision-making power within companies, she proposes to give the Social and Economic Committee (SEC) a substantial countervailing power by adopting a two-chamber (bicameral) governance model, each chamber representing a type of investor. In this model, the company's strategy would have to be approved by the SEC, which would exercise a veto right on all matters dealt with by the board of directors, including the distribution of profits and the designation of the CEO.

Favereau also considers that improving employee representation in corporate governance is a necessary condition for companies to take the biosphere into account: “only the generalization of co-determination can provoke the institutional and intellectual shock necessary for the ecological transition” (Favereau, 2019, p.82). Scholz and Vitols (2019) analyze the link between co-determination in German firms and their CSR commitments. They show that the stronger the co-determination, the more firms invest in “substantive” CSR practices, i.e. that actually involve internal resources, such as the adoption of emission reduction targets.

Nevertheless, we note here several limitations that suggest that employees alone cannot represent the biosphere.

Favereau (2019) mobilizes the social identity theory to show that a rational individual will necessarily think of himself as a member of the human species and thus be concerned about future generations. According to this theory, an individual chooses the way in which he or she defines him or herself in relation to other individuals before any rational choice involving relations with others. There are three hierarchical ways for an individual to define himself in relation to others and therefore to choose his social identity: the “individual level” (...); the

“social level” (...); and the “human level” (...). According to Favereau (2019), an individual would not choose an inferior level to the human level, because, by doing so, he or she would give up part of his rationality: “*a rational individual cannot, without contradiction, work to reduce the field of application of his own rationality by refusing to integrate the 'human' level*” (Favereau, 2019, p.96, in italics in the original text).

However, although employees seem to have a more distant view and are thus more concerned with the preservation of the planet's habitability, their vision remains anchored in the social sphere. Employees would speak in the boardroom as “members of the human species”, which leaves the question of representation of non-humans unresolved. Moreover, why would the social identity theory argument apply exclusively to employees and not to shareholders? Favereau (2019) argues that employees, contrary to shareholders, have a territorial anchor, a spatial and organic bond to the company, that makes all the difference. The same argument is found in the *Manifeste Travail* (2020): it is argued that “democratic” organizations, in which workers would have equivalent decision-making power than shareholders, would “react differently” to the adverse environmental impacts of investment projects. In her chapter, Landemore argues that local workers would not accept projects that pollute their territory and jeopardize the future of their living environment and children. It is clear here that the workers would not only act as employees, but as much as local residents, and therefore as representatives of the local territory as much as representatives of the company they work for. Nonetheless, how would employees react to investment projects that would contaminate communities far from their workplace?

An element of response can be found in the writings of Ferreras (2012). For her, employees are driven by a rationality that she describes as “expressive” because they see their work as a means of expressing values. We assume that it is in this sense that the authors of the *Manifeste Travail* (2020) postulate that a better representation of employees in corporate governance would result in a better consideration of the biosphere.

“The term expressive, which we use to describe the relationship that workers have with their work and the company in general, refers to the register of meaning and values, in opposition to that of instrumentality. It refers to the realm of meanings constructed through lived experience, values, ultimately, conceptions of justice” (Ferreras, 2012, pp.81-82).

The reference here to conceptions of justice echoes the Convention School, and in particular Boltanski and Thévenot's (1991) model of Economies of Worth. If employees do indeed carry their values into their work, there is nothing to say that these “conceptions of justice” embody a perspective compatible with the theoretical framework of EE, even when it comes to CSR managers. The interviews conducted by Nyberg and Wright (2013) with CSR managers show a reference to the “Market World” in their discourse, with companies taking ecological issues into account being justified because it would make the company “more viable and more profitable” (Nyberg and Wright, 2013, p.412). Also, Normann and Tellmann (2021) show that the position of unions on the issue of biosphere preservation differs from one industry to another. While the unions in the non-oil industries seem to associate the ecological transition with a necessary decline in oil activity, for the unions in the oil industries, a “just” ecological transition does not necessarily imply a reduction in the use of fossil fuels. Nevertheless, “trade unions are one type of actor that in most circumstances have had a preference for creation policies whilst resisting decline policies” (Normann and Tellmann, 2021, p.430).

We finally agree with Favereau (2019) that co-determination is a necessary but not sufficient condition to ensure that companies fit into the theoretical framework of the ecological economy. However, unlike Favereau, who advocates the creation of an environmental committee external to the board of directors, we believe it is important to include representatives of the biosphere directly in the governance bodies. We pointed out that some of the arguments put forward are based on the employees' status as local residents. The populations affected by the company's activities in a given territory could therefore be integrated into the governance structures to represent the biosphere. We will therefore discuss below the extent to which the populations affected by the company's activities in a given territory could legitimately and effectively represent the biosphere in corporate governance structures.

### **The Local and Indigenous Communities?**

The 2022 IPCC report stresses the need to include local and indigenous populations in decision-making, as “they have relevant knowledge to take into account the environmental issue”. If indigenous communities seem legitimate to represent the biosphere because their vision of the world goes beyond the distinction between nature and culture, the western populations rather belong to a modern vision of the world that is incompatible with the above-mentioned theoretical framework.

Descola (2005) proposes a typology of four approaches to thinking about the world, four

systems of differences for classifying living beings according to the interiority and physicality that are attributed to living beings: naturalism, animism, totemism and analogism. He points out that these four ways of thinking about the relations between humans and non-humans can coexist within the same territory and time, but generally one is systematized and is therefore considered the adequate way of thinking about the world. According to him, the naturalist ontology prevails in the West. Naturalism consists in thinking that only human beings are endowed with an interiority (capacity for reasoning, symbolic thought, communication via language). It is this interiority that distinguishes them from non-humans, not their physicality, which is subject to the same biological laws as non-humans. Godard (2004) specifies the different representations of Nature with regard to the “Worlds” (in the sense of Boltanski and Thévenot's model of Economies of Worth, 1991) to which they refer. Whatever “World” is referred to, none of the representations of Nature thus classified considers the interdependencies within the biosphere between humans and non-humans. Moreover, some representations could even be detrimental to the preservation of the biosphere. Western local communities could have a representation of nature that Godard (2004) calls "renown" and wish, for example, to preserve the landscape for the purposes of tourist notoriety rather than to see the installation of wind turbines whose impact would be more positive for the biosphere as a whole.

In contrast, the three other ontologies (animism, totemism and analogism) consider differently the relations and interdependencies between humans and non-humans. Indeed, animism holds that most non-humans have a subjective interiority. The different classes of beings (including humans and non-humans) are determined according to their physical capacities which condition their perception of the world. It was this classification of the world that Descola (2005) discovered while living among the Achuar Indians. Totemism consists of identifying different classes that share physical and moral qualities, encompassing humans and non-humans. Finally, in analogism, all beings are singular in their interiority and physicality, and the world is given coherence by establishing a correspondence between individuals according to the qualities they have in common.

Including populations that the IPCC calls “indigenous” would then make it possible to integrate into the decision-making process individuals who refer to an ontology other than that of Western naturalism, i.e. one of the three other ontologies in which discontinuities within the biosphere are not thought of in terms of the quality of human or non-human. However, if indigenous populations seem legitimate to represent the biosphere in companies whose activities have an

impact on their territories, what about companies that only operate on Western territories? The representation of the biosphere by indigenous populations, while interesting, cannot be generalized to all Western companies.

### **The Scientists?**

In order to provide companies with information about the actual impact of their investment decisions on the protection of the biosphere, we might advocate the integration of scientific ecologists into their governance structures. For Richard and Plot (2014), “scientists [...] should play a major role” (p.38). Indeed, they remain the privileged source of information for predicting the current and future impacts of economic activities on the stability of the biosphere.

However, it does not seem legitimate to consider the scientists as a good-enough representation of the biosphere. Indeed, this would imply that the results of scientific research are considered “accurate” enough to legitimate their voice to speak in the name of non-humans. As Stengers (1993) wrote, representation constitutes “the power to confer on things the power to confer on the researcher the power to speak in their name”. Latour (2004) stresses that the hegemonic place granted to scientists is nothing but the result of the distinction between “Nature” and “Society”. He criticizes this opposition between society and Nature by invoking the Platonic myth of the Cave: inert Nature would be the “Truth”, human society would be the ignorant community in the Cave and the scientists would be the shuttle between the two. By continuing to oppose Nature and Society, “scientists are the politicians in charge of representing the non-humans” (Latour, 2018), and the rest of the humans then remain trapped in the blur of the Cave.

Nevertheless, scientific results are not only a social construction. “Providing a social explanation, thus, means that someone is able in the end to replace some object pertaining to nature by another one pertaining to society, which can be demonstrated to be its true substance” (Latour, 2000, p.109). Scientific results are the result of elaboration and validation by several actors forming a network. Callon and Latour, who originated the “actor-network theory”, highlight that an innovation can only take place if it is the result of a network of actors (whom they call “actants”) comprising all the elements concerned by the said innovation, whether human or non-human, living or not (objects are also included). Callon (2006) thus takes the example of the statement “the hole in the ozone layer is getting bigger”. The socio-technical network mobilised to validate this statement “includes all the laboratories working directly or indirectly on the subject, the environmental movements, the governments that meet at international summits, the chemical industries concerned and the parliaments that enact the

laws, but also and above all the chemical substances and the reactions they produce as well as the atmospheric layers concerned” (Callon, 2006, p.269). Therefore, even if the integration of “representatives of ecological knowledge” in the governance structures of companies seems essential, scientists alone cannot represent this knowledge, as it is the result of the coordination between the different actants of the network mobilized by the scientific work.

### **A Collective**

Given the limits of each categories of actors, as well as the interest we have just emphasized in the construction and dissemination of innovations through the constitution of a network, it would seem relevant to us that the biosphere be represented in companies by a diversified collective. The theoretical framework of EE emphasizes indeed the interdependencies within the biosphere: socio-ecological systems are complex systems that combine elements from the natural ecosystems with the organizations of human societies. Both are interconnected in a sense that the latter shapes the natural ecosystems while being dependent on them for their subsistence (Petit *et al.*, 2022). Representing these interdependencies calls for the creation of an innovative collective representing not only the diversity of actors present in a system or combination of systems, but rather their relations and interactions. Latour (2004) suggests the creation of a “Parliament of things”. The idea here would be to seek to represent not only the constitutive elements of the biosphere, but rather the relationships interwoven between these elements; to be more concerned with the links between humans and non-humans than with each living entity. This “relational approach” (Rambaud and Richard, 2021) thus goes beyond the subject/object, nature/culture, human/non-human divide. Callon uses the term “collective”: “the notion of a society made of humans is replaced by that of a collective produced by humans and non-humans” (Callon, 2006, p.272).

The difficulty for a company would therefore be to determine who should be included in this collective and how to bring these relationships to life. Even though we have highlighted the limitations of each actor in representing the biosphere, the fact remains that these actors (employees, local communities, scientists) can each bring a relevant perspective to this collective. The legitimacy of the “actants” belonging to this collective will depend on the territory concerned by the activities of the companies. Latour et Schultz (2022) speak of “ecological materialisation”, proposing to focus on a scale that would be relevant to the problem under consideration: climate change issues require a global scale, the protection of a forest requires a local scale, green tides require different actants in Brittany...

Therefore, as different categories of individuals may ultimately be legitimate to represent the biosphere, who would be able to appoint the representatives of the biosphere to the BOD? We could consider assigning this responsibility to the Parliament of Things proposed by Rambaud and Richard (2021), but the authors do not specify exactly who could be part of it, under what modalities, nor why they make a difference between “spokespersons of Nature” in this Parliament of Things, and “representatives of natural capital” in corporate governance bodies. Since August 2021, French law explicitly recognizes an environmental role for the social and economic committee (CSE) in companies with at least 50 employees (law no. 2021-1104 of August 22, 2021, articles 40 and 41). This role, which today is mainly confined to information, consultation and alert missions, could be enriched by a mandate to identify the ecosystems with which the company interacts, and to nominate actors to represent these ecosystems on the BOD. Tomlinson *et al.* (2020) conducted a simulation to identify the implications of the mandate given to board members on the different “stakeholders”. They found that, regardless of the quality of each stakeholder, as long as representatives are told that they are acting “on behalf of the environment”, because they have been elected by “a committee of scientists who study the local and global environment” (Tomlinson *et al.*, 2020, p.1), their decisions promote the protection of the biosphere.

In the end, more than the intrinsic quality of each member of this collective, what matters most is the capacity of these members together to engage in collective action in order to represent the biosphere. Ostrom (1990), who highlighted the possibility and effectiveness of collective management of the commons (in contrast to Hardin (1968) and his famous “Tragedy of the Commons”), places greater emphasis on the importance of establishing rights and obligations for each member of the community rather than on the designation of community members. Ost produces an interesting critical analysis of the different developments in Law regarding the personalization of nature. He criticizes initiatives that give legal personality to Nature “for its own sake”, due to the “primacy given to the category of rights (at the expense of that of duties and responsibilities), and [because of the] tendency to develop a monistic thought with a dominating vocation (the primacy of nature after the primacy of humans)” (Ost, 2018, p.38), revealing a naturalist conception of the world in which the interdependencies between humans and non-humans are denied. He believes that the New Zealand initiative, that gives the Maori community the right to protect its animistic, biosphere-protecting cosmology, would be more effective. “What is essential here is not so much shared ownership as the development of community-based modes of resource management: a collective 'doing', and not just an

individual or shared 'having'" (Ost, 2018, p.41).

Ostrom (1990) and the authors of the actor-network theory insist on the importance of communication between the different actors so that the way of "thinking" about the object to be managed in common is understood by each actor in order to build a shared convention. In the following paragraph, we will examine the operating rules that would allow this "extended" board of directors to adopt a shared convention compatible with requirements set by EE in order to effectively protect the biosphere.

### **b) How to secure a convention protecting the biosphere?**

Although the diversity of the actors mobilized seems to be a necessary condition for the representation of the biosphere in corporate governance, the fact remains that this collective is made up of actors, each of whom has a particular representation of interactions between humans and non-humans. For a company to decide to invest in protecting the planet's habitability, the board would have to agree on the same representation, the same convention.

The firm can be seen as "a common good constructed and being constructed in and by a project, in and by a collective of actors" (Desreumaux and Bréchet, 2013, p.91). The coordination between the actors of a company around a common project, a common convention, is then a necessary condition for the efficiency of its activity. But the convention that the actors adopt is far from anodyne, since it determines the importance attached to each type of actor. Consequently, divergent interests may come into conflict over the convention to be adopted (Eymard-Duvernay, 2004). Spash (2020) points out that taking into account the complexity of interactions between the economic, social and biosphere spheres gives rise to plural representations and conflicts that must be resolved to ensure social stability. Once the collectives have been established, the difficulty then lies in reaching a consensus. To this end, the authors of the actor-network theory propose a "sociology of translation". The translation of the problem into the different logics of the "actors" determines their cooperation and therefore the success and adoption of an innovation. "By translation we mean the set of negotiations, intrigues, acts of persuasion, calculations, acts of violence by which an actor or a force accords, or allows itself to be accorded, the authority to speak or to act in the name of another actor or force: 'your interests are our interests', 'do what I want', 'you cannot succeed without me'. As soon as an actor says 'we', he or she translates other actors into a single aspiration of which she or he becomes the master or spokesperson" (Callon and Latour, 2006, pp.12–13).

However, the collective representing the biosphere may not be powerful enough to have this “authority to speak”. Giving a place to representatives other than shareholders in the governance bodies does not ensure they will have actual power in the decision-making process. For example, co-determination does not always give the same power to employee representatives due to different practices in companies, which led Scholz and Vitols (2019) to construct a co-determination intensity index for German companies. Moreover, stakeholders who appear to be legitimate according to the EE framework may not be legitimate for the other actors of the board, if they do not refer to the same worldview. Studying CSR arrangements that include indigenous communities, Banerjee indeed points out that adopting a configuration that gives “new” actors a legitimate place in a deliberative process does not foreshadow the actual power that these actors will be able to exercise in the discussion because of different “values and rationality” (Banerjee, 2018, p.804). In the case of a plurality of values, a consensual decision will favour the dominant point of view: “deliberative processes may seek out a plurality of voices but they do not provide spaces for dissent and conflict. As a result, ‘consensus’ becomes more of a hegemonic accommodation to dominant interests” (Banerjee, 2018, p.803). Indeed, Nyberg and Wright's (2013) analysis of CSR managers' discourses using the “orders of worth” framework (Boltanski and Thévenot, 1991; Thévenot et al, 2000; Boltanski and Chiapello, 2005) shows that the tension between the Green worth and the Market worth results in a compromise that favors the Market worth, thus corrupting the original idea of environmental protection: “by employing compromise, organizational actors temporally settle disputes between competing claims used in promoting environmental activities. These compromises are however one-sided and contribute to the degradation of the environment in favour of the market through the corruption of the environment as a social good” (Nyberg et Wright, 2013, p.406). Although Rambaud and Richard (2021) propose several elements to limit the power of “anonymous shareholders”, such as including representation of all public and private entities financing the company, or specifying that voting rights would not be proportional to the size of the capital invested, there is no guarantee that these solutions would, in fact, give sufficient power to the representatives of the biosphere in the decision-making process.

In order to give real decision-making power to the representatives of the biosphere, we could consider extending Ferreras' (2012) bicameral model by adding a chamber representing the biosphere. Managers' decisions should be approved by a majority in each of the three chambers: a chamber representing Capital, one representing Labor, and one representing the Biosphere.

The point of this option is that it gives the representatives of the biosphere a real power to select the investment decisions that are proposed to it, and thus makes it possible to effectively to effectively impose the environmental limit on business decisions. However, its major drawback is the lack of interaction between these three chambers. The search for compromise solutions is left in the hands of the managers, and no discussion seems to be envisaged between the three chambers, contrary to what Ostrom (1990) advocates for collective management of the commons, where communication between community members is paramount to ensure “self-organization”. Moreover, representing the Biosphere, Labor and Capital in specific councils would be to think of these spheres as three distinct circles and not three concentric circles, contrary to the theoretical framework we have adopted. It would therefore be interesting to transpose Banerjee's (2018) idea of giving indigenous communities a veto right in translocal governance bodies, giving representatives of the biosphere in the board the ability to voice opposition to investments that would harm the reproduction of the biosphere. Nevertheless, in order for the company's project to sustainably include the interests of the biosphere, whether these interests are negotiated or imposed, it is necessary that these interests be understood and perceived as legitimate in order to gain the support of a majority of stakeholders (Desreumaux and Bréchet, 2013). Encouraging training to improve the actor's knowledge of environmental issues and collective learning exercises to develop a shared understanding of the ecological stakes of the company's activities. Ultimately, collective learning is considered as a key element to the success of governing “common-pool resources” (Ostrom, 1990) and a prerequisite to a genuine change in corporate values and project.

## **Conclusion**

Faced with the ecological emergency, companies must necessarily take the interests of the biosphere into consideration in their decision-making processes. Protecting the biosphere implies adopting a vision of the world in which this sphere encompasses and limits the social sphere, which itself frames the economic sphere, and in which all human and non-human actors are considered (Petit *et al.*, 2022). If recent developments in corporate governance improve the way ecological issues are considered, they do not embrace the vision of the world developed by the field of EE. In order to meet the requirements of the EE framework, corporate governance should include representatives of the biosphere in its decision-making structures, which entails giving a voice to non-humans. We came to the conclusion that no single type of actor could legitimately represent the biosphere.

Employees, despite their territorial anchor, cannot alone represent the interests of the biosphere since labor's interests could go against them, particularly in terms of job preservation (Normann and Tellmann, 2021). Including local communities impacted by the company's activities is especially relevant but not sufficient, unless they refer to an ontology compatible with the EE framework (Descola, 2005). Finally, even if the integration of "representatives of ecological knowledge" in the governance structures of companies seems essential, scientists alone cannot represent this knowledge, as it is the result of the coordination between the different actants of the network mobilized by the scientific work (Callon, 2006; Latour, 2018). Taking the biosphere seriously implies considering the interdependencies within it, which means that only a diversified collective could effectively represent its interests, in line with the actor-network theorists, Ostrom (1990), and Rambaud and Richard (2021), as well as recent legal innovations for the protection of ecosystems through the personalization of collectives tied to the territory concerned (Ost, 2018).

The contribution of this article is to raise the difficulties of implementing such a relational governance, and to propose ways to overcome them. We have shown that giving a place to the representatives of the biosphere does not prefigure their actual impact on the decisions of the companies. As the consensus-building process clearly tends to make economic interests triumph over ecological interests (Nyberg and Wright, 2013), we believe that granting a veto right to these representatives, in line with Banerjee (2018), is justified.

The precise composition of this collective remains a thorny issue that we have not fully addressed. Even if what seems important is the willingness of actors to be part of a collective to represent the interests of the biosphere, more than their individual skills or qualities, the fact remains that companies will still have to formally mandate them. The issue of the legitimacy of the appointment process is one avenue for further research.

Also, the focus of this paper remained on the corporate governance structures and the necessary rules to ensure that the interests of the biosphere are effectively taken into account, setting aside how actors would act upon them, and the construction of their legitimacy – key elements for understanding corporate governance (Gomez, 2021). Indeed, our proposition of a veto right can be problematic as the interests of the biosphere would then be imposed on the members of the BODs, without them agreeing to their importance. This raises questions that we believe deserve further research: how to legitimize this veto right with the other members of the board? What governance mechanisms would make it possible to build and stabilize a common convention

promoting the preservation of the biosphere? How to integrate the protection of the biosphere in the structuring project of the company as a common good? As Desreumaux and Bréchet (2013) point out, awareness and education can lead to changes in individual values and we believe that further research is needed to study what kind of training and underlying organizational learning is needed to build this common convention on solid grounds.

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