

We are stardust: Dignity and right of non-human life on and beyond our planet



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Humankind is stardust, born of the evolution of life on Earth as part of the evolution of the universe. He is called to particular responsibility for all living beings and of creation itself. The article discusses whether and how, in the perspective of a theological ecocentrism, the dignity and rights of non-human beings are to be anchored in order to live according to this responsibility. The aim is to develop an ethic of self-limitation that is prepared to grant rights to non-human beings, which, however, can only be demanded by humans through advocacy. Some aspects are substantiated with a view to the Earth and beyond for the cosmos. The protection of the rain forests and oceans as well as the lower Earth orbit are mentioned as examples of an ethic of self-limitation. The spheres of the cosmos are also to be considered. It is about developing reverence for the cosmos as an expression of responsibility for creation.

Contribution: The article discusses in how far in a theological ecocentrism the dignity and rights of non-human beings are to be anchored. It argues for a reverence for the cosmos as an expression of responsibility for creation, as humankind is stardust, born of the evolution of life on Earth as part of the evolution of the universe.

Keywords: creation; dignity; rights; non-human beings; ecocentrism; anthropocentrism; outer space; reverence for the cosmos; National Aeronautics and Space Administration; NASA.

'Then the LORD God made man of the dust of the ground' (Gn 2:7)

'And the LORD God made of the ground every beast of the field and every fowl of the air' (Gn 2:19).

Man is an 'earthling' in a double sense. He is made of earth and becomes earth again, as we all know and as the Bible also states (Gn 3:19). *Adam*, Hebrew for 'man', is made of earth, Hebrew *Adamah*. And he is a creature of planet Earth and emerged from the evolution of life on this planet as part of the evolution of the universe, like his fellow creatures. His fellow creatures – like everything here – also consist of 'dust from the earth'.

This dust is 'stardust',¹ as we know it today. The various elements of which we are also composed were synthesised by the Big Bang and by generations of stars (cf. Moore 2022). Humans are made up of many different molecules:

which are themselves made up of individual atoms, which by weight are 65 per cent oxygen, 19 per cent carbon, 10 per cent hydrogen, 3 per cent nitrogen and 3 per cent everything else ... More than half of our body weight is made up of water. The hydrogen nuclei in water were made within the first second of the beginning of the universe ... The carbon and oxygen ... were forged in stars like our sun ... Some of the rarer elements in the human body were created in the cosmic explosions of dying stars or even in the mergers of neutron stars. (Moore 2022:197f.)

It is important to be aware of these natural cosmic connections.

As a rule, the relationship of humans to their fellow creatures is nowadays treated within the framework of *environmental ethics*, the morally determined treatment by humans of non-human nature

1.The visualisation of this was popularised by Carl Sagan, who said in a 1973 episode of the television series *Kosmos*: 'We are made of star-stuff'. As early as 1969, Crosby et al. sang 'We are stardust'. The priest and poet Ernesto Cardenal has also repeatedly taken up this idea. Cf. Cardenal (1994). Already in the *Book of Love* (first published in Spanish 1959) he formulated: 'The elements from the meteorites that came from the most distant stars ... are the same as those of our planet and our body'. (Cardenal 1977:100) His last poem reads: 'Star children/Trillions of galaxies and trillions of stars/The stars from which we come ...' (Cardenal 2020:37).

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(cf. Gräb-Schmidt 2015:651). Klaus Michael Meyer-Abich, however, problematises the concept of the environment as:

Our environment is the human living space in the cosmos. But we behave in nature as if the rest of the world were only there for us ... The whole world is then merely the human environment and nothing else. We stand at the centre and everything else stands around us, more or less within reach. In my opinion, however, this is a very misguided self-assessment, arrogance and hubris.

For we humans are not the measure of all things. Mankind emerged from natural history together with animals and plants ... as one of millions of species on the tree of life as a whole. With the elements of nature, they all belong to the world around us and hence also to our environment, and so they are not only *around us* but *with us*. Our natural fellow world is everything that is naturally in the world with us humans. To emphasise this, I speak of our fellow world instead of our environment. (Meyer-Abich 1984:19f.)

The French Catholic theologian Fabien Revol also addresses the problem of the Kantian distinction between person and thing, between the dignity of *persons* alone and the purely instrumental value of the 'environment' in his remarks on the meaning of biodiversity. Yet 'the consideration of living beings as consumable things is at the heart of the historical causes of the ecological crisis, moreover of its biodiversity side' (cf. Revol 2023). Echoing Pope Francis' seminal encyclical *Laudato Si*, he reminds us that 'everything is connected'. And that is why we not only *need* biodiversity, but it has its own *value*. We can now say: it has an intrinsic value like our *fellow world*.

We express this interconnectedness of human beings with their fellow world with the image of *stardust*, in which the close connections and intrinsic interrelationships become clear on a cosmic scale.

Impulses for transcending an anthropocentric perspective to biocentrism or ecocentrism

In the German-language debate, the aforementioned Meyer-Abich developed the concept of an 'intrinsic value of the natural environment' (cf. Meyer-Abich 1989) that goes beyond human interests and needs.² Starting from the 'natural-history kinship(s) of human beings with their natural environment' (Meyer-Abich 1989:255), he emphasises 'what is common to human beings and all other living beings, animals and plants, as well as to the elements, the commonality in which they equally stand' (Meyer-Abich 1989:258). On the basis of this natural connectedness, he develops a graduated model of ethics that not only, as in classical ethics, includes the interests of all fellow human beings and also of future generations in an anthropocentric perspective, but ultimately includes the entire ecosphere. Meyer-Abich first integrates the pathocentric view of the sensation of pain in animals, and then, because 'suffering (goes) further ... than pain' (Meyer-Abich 1989:262), he

2.The perspective of conferring rights on all elements of nature was probably first developed and attempted by the US jurist Christopher Stone. Cf. Stone 1972.

emphasises the 'reverence for life',³ adopting Albert Schweitzer's position. But even this biocentric perspective must be transcended because the inorganic world is not only to be understood as a basis and resource for the living. The elements of the inorganic world also have an intrinsic value. Meyer-Abich speaks in this regard of a 'holistic' (Meyer-Abich 1989:262) position; it is probably more precise to speak of an intrinsic value of the ecosphere or a physiocentric perspective (cf. Huber 1996:308f.). Meyer-Abich justifies this position by recourse to the universalisation principle of Kant's ethics. Going beyond Kant, he argues that no part of the world, neither humans nor other living beings:

[M]ay (behave) as if the rest of the world, and thus the world as a whole, were only there for them, as if the part were the epitome of the whole. (Meyer-Abich 1989:263)

Accordingly, the natural world with its demands is to be included in every generalisable maxim.

In a further step, Meyer-Abich tries to make this ethical concept legally concrete and in this way binding. In analogy to the development of the welfare state since the late 19th century, which has clearly minimised the social crises of industrial society, this is to be expanded in view of the ecological survival crisis by a 'natural state' (Meyer-Abich 1989:269). In this sense, the protection of human dignity must be supplemented constitutionally by respect for the intrinsic value of the natural environment and, with regard to property rights, a 'nature bond' of property must be established in addition to the social bond, as it is anchored in the German constitution (Grundgesetz Art. 14, 2). From this constitutional anchoring of human interaction with the ecosphere with references to the idea of dignity and the concept of property, Meyer-Abich develops the pioneering idea of also conferring rights on the fellow world in order to recognise its intrinsic value. Similar to commercial law, which includes companies as legal persons in the legal sphere and has them represented by natural persons, living beings and elements of the ecosphere are to be recognised as legal persons and represented by nature conservation associations or 'nature lawyers' to be appointed. Human legal representatives can articulate and enforce the interests and need structures of the natural fellow world in order to contribute to people's willingness to subordinate themselves to the whole of nature.⁴

Wolfgang Huber has developed a differentiated critique of this view. Similar to Meyer-Abich, he advocates the task of a legally binding design of human interaction with nature, but problematises the concept of 'natural rights' and wants to develop other legal instruments based on the idea of natural dignity to anchor human obligations towards nature (cf. Huber 1996:301). Huber emphasises that the concept of 'rights' was developed with human persons in mind and it

3.Cf. Schweitzer's precise description of his ethical maxim of 'reverence for life': (Schweitzer 1981/1923:331).

4.Cf. Meyer-Abich (1989:273–275). In our view, this could also represent a positive take-up of the critical observation by Lynn White, who recognises a root of the ecological crisis in the de-tabooing and de-sacralisation of nature by Christianity (cf. Losch 2022:chap. 14).

remains unclear to what extent natural objects should be recognised as 'legal subjects ... (and) how nature itself could assert its rights' (Huber 1996:303). Huber does not consider the notion of a legal person to be helpful with regard to nature, since this status can be granted or withdrawn by 'state determination ...' (Huber 1996:3049). On the other hand, the broader perspective of recognising rights that cannot be withdrawn, developed by analogy with human rights, does not apply to legal persons.⁵ According to Huber, only those who 'are to be recognised as free subjects', that is, human persons, have human rights in their full scope.

In order to stop the current 'process of irreversible destruction of nature' (Huber 1996:305), an attribution of rights to nature is, according to Huber, 'misleading' (Huber 1996:317), as this ultimately obscures the legal concept without deriving concrete protective measures for nature. He develops an alternative orientation by emphasising the distinction between an anthropocentric responsibility for a physiocentric understanding of life preservation and an anthropocentrism of self-preservation. While the biblical and many other religious traditions differentiate between these two attitudes by linking a special position of human beings with their responsibility for their fellow world, modern times have allowed the anthropocentrism of self-preservation in the sense of an exclusive orientation towards human interests to become dominant.

This problematic form of anthropocentrism is overcome by introducing the idea of natural dignity and establishing a corresponding human responsibility. 'Natural dignity' means that the inherent dignity of nature is not dependent on human recognition but has 'its existence in itself' (Huber 1996:313). Modifying Kant's concept of dignity, which links dignity to the endowment of reason, Huber (1996) argues in terms of creation theology:

All creatures are related to the Creator and dependent on his goodness; all have only a limited living space and a limited life span; all are dependent on ... finding a solution that makes life possible for the individual in the midst of other life. (pp. 1996:314)

The special human position in the creation accounts can only be understood as a form of dominion, which includes the responsibility to preserve and promote nature. Accordingly, as specified by Huber, 'the limitation of the concept of dignity to humans' must be overcome 'so that non-human nature can also be considered and treated with respect for its inherent dignity' (Huber 1996:314). In this way, humanity learns to respect nature's own measure, which cannot be replaced by an equivalent. In this sense, the concept of dignity is to be applied to nature in accordance with Kant's distinction between a value and dignity, according to which a value can be expressed by a price and replaced accordingly, and non-substitutable dignity.⁶ From this follows an ethics of self-limitation, which is essentially to be reflected in an

5. Meyer-Abich speaks of a 'recognition' of rights of human nature, which goes beyond granting them. How this is to be conveyed with the legal figure of legal persons remains open.

6. Going beyond this argument, the theologian and *expressis verbis* first bioethicist, Fritz Jahr, extended the self-purpose formula of the categorical imperative to all living beings: 'As a matter of principle, respect every living being as an end in itself and treat it wherever possible as such!' (Jahr 1927:2).

'ecological restructuring of the legal order' (Huber 1996:317). Thus, the natural foundations of life are to be protected, also independently of human interests, which has so far been insufficiently anchored in the German constitution.⁷

Dignity and rights for non-human life and for the eco-sphere

If one includes the biblical tradition in the considerations beyond the creation story, then the idea of integrating non-human creation into the legal order is also plausible as a concretisation of the dignity of nature, which is undisputed between Meyer-Abich and Huber. From today's perspective, the biblical texts thus reveal an impressive ecological sensitivity that needs to be taken up productively (cf. Jähnichen 2021). In that all elements of creation communicate with the Creator and some of them are even integrated into the covenants; the recognition of a dignity of creatures arises directly from a theological perspective. The bestowal of rights on nature is also to be discussed in accordance with these basic biblical ideas. The theological perspective of the community of creation and the recognition of a corresponding dignity of all creatures are to be brought into the debates of pluralistic societies as 'natural dignity', as has been exemplarily shown in Huber's legal ethics.

The further consideration of granting rights to nature as a whole or to individual subjects or areas must be discussed in a differentiated manner. In addition to Huber's criticism, Ebach argues that 'a separate right for a living being ... should be tied to the unconditional right to life' (Ebach 2013:16). Since humans kill animals and other living beings for different, even justified, reasons, they are not granted an unconditional right to life and it is therefore, in his opinion, 'difficult to speak of animals' own rights' (Ebach 2013:16). Instead, it is more plausible that 'the rights of animals are subject to the care of humans' (Ebach 2013:17). Against this argument, it can be objected that rights are not necessarily tied to an unconditional right to life, but that equally graded rights of protection are of importance, as is the case – and is tendentially the case in Germany and in many countries worldwide – for unborn human life with differentiations from the fertilised egg cell through the early phase of embryonic development to prenatal life. In an analogy, other living beings and the natural elements (natural objects) can also be granted graded rights in order to protect them better than has been done so far. Although such rights can only be asserted by human beings acting in an advocatory manner, this also applies to prenatal human life. Just as the latter can be clearly protected by certain rights, a new quality of protection of nature is possible, in a certain analogy, through the enshrinement of natural rights. An example of this is the law in force in Spain:

7. The amending law introduced in 1994 in Art 20a Grundgesetz, the German constitution, speaks of a protection 'also in responsibility for future generations' of the 'natural foundations of life', but under the reservations of the actions of the legislature, executive and jurisdiction. As a result – according to Huber's justified criticism – 'not the nature compatibility of economic activity, but the economic compatibility of nature conservation ... must be proven' (Huber 1996:320).

The Mar Menor lagoon was the first ecosystem in Europe to be given the legal status of a 'legal person', so that all citizens of Spain can sue for damages for this ecosystem. The additional goal of such a legal status and the associated granting of rights is ultimately a reversal of the burden of proof, in that economic actors, for example, must prove that they are not causing irreversible damage. *In general, in the future, it will no longer be necessary to prove the economic compatibility of nature conservation measures – as is widely the case today, – but rather the nature compatibility of economic activities.* In the future, every intervention in the rights of animals and plants and in the integrity of the natural elements could be linked to such a reversal of the burden of proof. No irreversible processes of destruction of living beings may occur through human intervention, in order to limit or ideally stop the process of dramatic species extinction. In particular, the protection of non-replaceable living beings must be linked as an expression of natural dignity with correspondingly enforceable rights. In this way, the necessary ethos of human self-limitation becomes concrete.

Another form of human self-limitation aimed at protecting natural objects is the creation of national parks and other nature reserves. This process was already started towards the end of the 19th century and has, as a consequence, clear legal regulations that can be interpreted as an early form of granting natural rights (cf. Wustmans 2015:135–138). In the present, a significant expansion of nature conservation areas, for example in the remaining rainforests, as well as the further development of this concept with regard to other habitats, parts of the oceans or even the near-Earth orbit, is of utmost urgency. However, this is more difficult to implement than the creation of a nature reserve by a nation state since international agreements or even worldwide regulations must be made. The international agreements of international humanitarian law for collective security rights are so far the least developed regarding 'collective environmental security'.

In many countries of the South, such as Brazil, Congo or Indonesia, it would be ecologically necessary to protect the rainforests there for the sake of global ecological stability. However, the fact that these countries are allowed to use their natural resources less economically than today's industrialised countries have done or are still doing regarding their land areas is hardly ethically justifiable. The economically plausible but politically difficult solution to protect the environment is to prevent the respective states or the landowners from using certain areas economically by making monetary payments, which can be interpreted as an ecological variant of neo-colonialism. Nevertheless, for reasons of ecological stability, it is necessary to enforce such self-limitations of the economic use of space or the protection of vital biotopes and natural areas. For reasons of fairness, the global community of states – above all the industrialised

nations – would have to compensate for actual or potential economic gains that the areas to be protected could yield. However, in view of the increasing global demand for land for agricultural products, for the absorption of greenhouse gases, etc., and the corresponding investments in land, enormous sums would have to be raised (cf. Bommert 2015:111–128). The 2022 climate conference in Sharm-el-Sheikh, for example, fell far short of the necessary steps with regard to financing climate protection and compensation payments for climate-related damage to countries in the South.

Creation responsibility beyond our planet

If God created 'heaven and earth' (Gn 1:1), 'heaven' is also a creature. The concept of 'the heavens' is ambiguous, and this ambivalence of the 'heavens' between cosmological and theological meaning has been preserved until our day (cf. Losch 2022:chap. 10). We do not want to understand the 'heavens' here as the place of God, nor only as 'our' firmament, but also as our space environment and as the infinite expanses beyond our planet. If we recognise ourselves as stardust, it would also be necessary to discuss here with reference to outer space how human beings and their environment relate to each other.

If heaven is a 'creature', it must be preserved just like the Earth (cf. Losch 2022:253:footnote 1001). When man sets out into the sky, he must at least consider what he will do with it, how he will deal with what is there, how he will relate to it. Can he simply 'freely use' his space environment, as the internationally valid Outer Space Treaty states?

There are different legal opinions on whether the free use of space also includes space mining.⁸ Because what is mined is consumed and cannot be used further. And orbital resources, our orbits, are also limited. Because of the mega-constellations that are already installed and planned in extremely large numbers, the lower Earth orbit (LEO) is becoming more and more crowded, so that there is even the danger of the so-called 'Kessler Syndrome', a chain reaction in the increase of space debris, which in the worst case could lead to us no longer being able to leave the planet. Our time here, however, is limited; we must one distant day leave for space to survive in the long term. A major asteroid impact is also unfortunately statistically overdue (cf. Losch 2018).

Furthermore, the question must also be asked for our celestial bodies: do they and their regions have an intrinsic value? If the highest mountain in the solar system, Mons Olympus on Mars, contained gold, should it be allowed to be removed?⁹ Or should it better remain a landmark?

8. See, among others Losch (2018); Hoffmann/Bergamasco (2020).

9. For this example, thanks are due to Persson (2019a).

Now the Artemis programme is going to the moon first. At least the Artemis Accords of the National Aeronautics and Space Administration (NASA) and cooperating partners also include the clause that the Apollo Landing Site on the Moon should be protected. Therefore, the idea of parks worth protecting already exists in space (cf. Cockell & Horneck 2006).

And does not our co-environment also include the inanimate co-environment in the cosmos? If everything is interconnected and interrelated, then we must pay as much attention to the near and, in the future, to the more distant space environment as to the lagoons?¹⁰

We are stardust. Reverence for the cosmos as an expression of responsibility for creation

Humans are causing dramatic (self-)destructive changes with their increasingly extensive interventions in the natural interrelationships of life, both spatially and temporally. In contrast to this, an ethos of respect for all fellow creatures in the broadest sense, that is, respect for the cosmos, is to be cultivated (cf. Schweitzer 1981/1923:331), as it corresponds exemplarily to the biblical tradition – despite a partly problematic history of the impact of Christianity. From this ethos follows a recognition of natural dignity that can also be understood by other religious or philosophical traditions and that must be concretised in ethical rules of human self-limitation. This natural dignity applies not only to the Earth, but also to the celestial bodies in our space environment and to the vastness of outer space.

In order to make this self-limitation sustainable beyond mere rhetoric, rights of nature must be incorporated. Although these are based on the advocacy action of humans, they are binding as rights – mostly in the form of rights of legal persons – and can thus lead to a significant strengthening of the protection of nature. In this sense, the instrument of natural rights is suitable for concretising the basic ethical idea of respect for fellow creatures.

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¹⁰Also, as 'Earth' one does not have to consider only the planet Earth. The biblical authors meant the *inhabitable land*, and why should this not also be found on other planets? (cf. Losch 2022:158). On distant exoplanets and even some icy moons of our solar system there could be traces of extraterrestrial life, and here the question would be repeated: what is the position of humans in relation to this? (cf. Persson 2019b).

Authors' contributions

T.J. contributed the draft of sections 1 (Impulses for transcending an anthropocentric perspective to biocentrism or ecocentrism) and 2 (Dignity and rights for non-human life and for the eco-sphere). A.L. contributed the draft of the introduction and Section 3 (Creation responsibility beyond our planet). Both the authors edited and supplemented each other's contributions.

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