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The mind of plants: Toward a vegetal philosophy in Hans Jonas

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Abstract
This article intends to analyze the main theses of Hans Jonas' ontological approach to plant life in his phenomenology of life. To do so, we will start with the hypothesis that plant life must be thought of as a carrier of mind (inwardness) and that this guarantees plants' ethical status. From there, we will analyze the two approaches Jonas developed, which, according to him, demonstrate the ontological superiority of plants in relation to animals and simultaneously their greater vulnerability: material *immediacy* (represented by their nutritive activity) and spatial *proximity* (linked to the problem of movement). From these two aspects derives the *indistinction* between acting and the objective of acting (which makes metabolism a process intrinsic to the vegetable being itself). We will conclude by suggesting that such a position brings Jonas closer to the post-humanists, insofar as he questions humanist anthropocentrism, opening the way for the recognition of plants not only as moral subjects but as legal entities.

Keywords: Hans Jonas, vegetal, plants, freedom, mind, responsibility

Introduction

"Why do the trees of a virgin forest fight each other?
For 'happiness'? – For power"
(Nietzsche, 11[11], 1887–1888)

"Nous ne défendons pas la nature, nous sommes la nature qui se défend."
(Marine Calmet)

The so-called "existential [and ontological][3] interpretation of biological facts" (Jonas, 1966, p. xxiii), that Hans Jonas proposed and developed in his 1966 work *The phenomenon of life: Toward a philosophical biology* aims at emphasizing the "dimension of interiority" as constitutive of life from its most primitive forms. To this end, he proposes breaking with the dualism that has existed since antiquity and the two modern post-dualist movements (materialist monism and idealist monism) in order to create an integral monism that understands life in its psychophysical unity. This project is already stated in the first sentence of the work: "A philosophy of life comprises the philosophy of the organism and the philosophy of 'mind'"

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[3] In the original version, *Phenomenon of life: Toward a philosophical biology* (1966), Jonas refers to an "existential" perspective, while in the German translation (*Organismus und Freiheit*. Anséitze zu einer philosophischen Biologie [Vandenhoeck & Ruprecht, Güttingen, 1973] later published as *Das Prinzip Leben. Ansiitze zu einer philosophischen Biologie* [Insel Verlag, Frankfurt a. M., 1994], he speaks about an "ontological perspective". Note that there are some differences between *The phenomenon of life* and *Organismus und Freiheit* as the German translation seems to have been done rather freely, especially Chapter 5 "Is God a mathematician?" whose third appendix – *Note on non-participation of DNA in metabolism* – has been removed, and the *Transition*. Furthermore, the German version included the text *Harmony, Gleichgewicht und Werden*, published in 1957, which is not part of *The phenomenon of life* and did not include the tenth essay, *Heidegger and Theology* (then already published in Germany in 1967 – "an unconvincing criterion," as Frogneux has rightly noted [2001: 153], "since it does not apply to other texts, notably "Homo Pictor" and "Gnosis, existentialismus und nihilismus," Chapters 9 and 11, which appeared in 1963 in *Zwischen Nichts und Ewigkeit*". For Frogneux, "a more fundamental reason might be the fact that this text is not intrinsically part of his argument".).

(Jonas, 1966, p. 1). Note that Jonas uses the word "mind"[4] to refer to this spiritual reality inherent in the living ("animate") in relation to the inorganic ("inanimate").

The consequences of this conception take effect through a new ontology that forms the basis of his ethics: By recognizing freedom as the guiding principle for understanding the phenomenon of life, Jonas' theses include the plant world, reflecting, given its ontological difference from that of animals, the urgency of protecting species by recognizing their intrinsic dignity, the appeal of which translates into a demand of duty for humans. Although he did not write a specific text on plant life, Jonas highlights its importance through two complementary aspects that demonstrate the superiority of plants over animals and simultaneously their greater vulnerability, namely material *immediacy* (represented by their feeding activity) and spatial *proximity* (linked to the problem of movement), from which derives the *indistinction* between action and the objective of action (making metabolism a process inherent to the plant being itself).

An organic mind

The Jonasian concept of mind proceeds from a rejection of the epiphenomenalist version derived from materialist monism (Jonas, 1966, p. 128) or even from a mere conception of the mind as a physical "iridescence" or a function of the body (Jonas, 1966, p. 128) brought about by the ontology of death prevalent in modern science (including biology) through the invention of "pure matter" (Jonas, 1966, p. 123), which Jonas considers one of the great theoretical fallacies of modernity. Another source of controversy, of course, would be Cartesianism, which supposedly "had removed mind from the very terms of physical science" (Jonas, 1966, p. 110) and made it inaccessible to the physical or mathematical languages that gave legitimacy to the scientific method, since it was not, after all, a measurable quantity. For Jonas, the scientific project based on a Cartesian foundation was nothing more than an insufficient strategic measure: "Having rid 'body' in general of any relation to mind, and the science of body of any obligation to deal with the phenomena of mind, Descartes and the Cartesians could feel safe in treating the organism as just another instance of the *res extensa*" (Jonas, 1966, p. 56). Ultimately, it was only a sanitizing measure to purge the world of matter of alleged metaphysical extravagance.

The problem remained, however, in that "since the claims of mind or inwardness were still honored by their allocation to a separate substance, with its independent set of phenomena under their own laws, even if its domain had to be contracted to the sphere of *human* consciousness" (Jonas, 1966, p. 56). This was precisely the basis of dualism and post-dualism, which left the body to the control of the sciences, while the mind remained a "nonenigmatic, if metaphysically meaningless, nature of the entire extra human biological realm" (Jonas, 1966, p. 56). This is precisely the case that Jonas opposes when he formulates a "philosophical biology" that, as it were, opposes the limits of "scientific biology". However, this is one of those curious cases where one opposition is fueled by the other: For Jonas, it was precisely the theory of evolution

[4] In the first version, written in English and published in 1966, Jonas uses the word "mind", as in other works in the English language. In the German version "Organismus und Freiheit", which he himself translated in 1973, Jonas uses the word "Geistes". It is from this German version that the Italian translation by Anna Patrucco Becchi, coordinated by Paolo Becchi (1999) originates, which uses "spirito"; the same happens with the Spanish translation by José Mardomingo Sierra (editorial Trotta, 2000), which uses "espíritu"; the Portuguese translation by Carlos Almeida Pereira (2004) also uses "espírito"; Danielle Lories also translates the word as "esprit" in the French translation (*Le phénomène de l avie, vers une biologie philosophique*; Paris: DeBoeck Univsersité, 2001). Finally, Jonas, a scholar of the Gnostic movements, was aware of the difference between the concepts of "soul" and "mind": he had already mentioned this difference between *Soul* and *Mind* when explaining the tripartite division of man. This question reappears in the 1952 text *Gnosticism and Modern Nihilism*, when he states that knowledge is "not proper to the 'soul' but to the 'mind'" (Jonas, 1966, p. 248).

that superseded the problem of the mind as a theoretical problem, insofar as it deprived human beings of the privileged position on which they had rested since Descartes. For Jonas

> [T]he *continuity* of descent now established between man and the animal world made it impossible any longer to regard his mind, and mental phenomena as such, as the abrupt ingression of an ontologically foreign principle at just this point of the total flow. With the last citadel of dualism there also fell the isolation of man, and his own evidence became available again for the interpretation of that to which he belongs. For it was no longer possible to regard his mind as discontinuous with prehuman biological history, then by the same token no excuse was left for denying mind, in proportionate degrees, to the closer or remoter ancestral forms, and hence to any level of animality: common-sense evidence was reinstated through the sophistication of theory—against its own spirit, to be sure (Jonas, 1966, p. 57).

Evolutionism, then, would have undermined dualism and made possible again the question of what constitutes the mind in the history of life. This is precisely what Jonas wants to use to formulate an interpretation not only of animal life (as opposed to the position of Cartesian automata) but also of plant life. With this "contraction" caused by evolutionism in the old interpretations of Christian transcendence and Cartesian dualism, according to Jonas, "The province of 'soul', with feeling, striving, suffering, enjoyment, extended again, by the principle of continuous gradation, from man over the kingdom of life" (Jonas, 1966, p. 57). It is precisely this "principle of continuous gradation" derived from evolutionism that Jonas uses to understand how, in the history of life, the evolution of the body occurred simultaneously and together with the evolution of the mind. For Jonas, this evolution passed through stages or phases, from the most primitive to the most developed.[5] The author has characterized these stages as steps of freedom, grounded in the opening of each organism to the environment as a form of self-transcendence in search of its own survival. Jonas makes use here of the "ontological postulate, the principle of qualitative continuity" derived from cognition (which he attributes to Spinoza and even Leibniz) and which he considers a "logical complement to the scientific genealogy of life" (Jonas, 1966, p. 57) of evolutionism, insofar as it makes possible the so-called gradations by which "the highest could have been reached from the lowest only through all intermediary stages, whether these were merely transitional or left in being as permanent representatives" (Jonas, 1966, pp. 57–58). Thus, it becomes impossible to identify a point in the evolutionary series at which one could "we draw with reason a line with the 'nothing' of inwardness on its far side and the incipient 'one' of it on the near side" (Jonas, 1966, p. 58). Interiority, as mental life and as an act of freedom, has no other starting point than, according to Jonas, precisely "at the beginning of life", in a "co-extensive" way with it. It is this conclusion that has rendered dualistic and even monistic explanations of a materialistic and idealistic nature inadequate.

Metabolism as the first form of freedom

For Jonas, this integral evolutionary series of life begins with metabolism and extends through "moving and desiring, sensing and perceiving, imagination, art and mind"[6] For him, this

[5] Remember that Jonas appropriates the main arguments of Darwin's theory of evolution (although, in his text on "the philosophical consequences of Darwinism", present in The phenomenon of life, he remains critical of the materialistic stance of this theory). For Jonas, however, the history of evolution proves the idea that there is a gradation of complexity of life, which enables the understanding of "degrees" of interiority ranging from the most primitive organisms to the most "evolved" ones (such as humans). It is, therefore, a gradual theory of ontological interiority and not a valuative element. We could even speak of evolution as synonymous with the complexification of life.

[6] Jonas does not always very precisely describe these steps, so one can find variations throughout his work. In the 1966 version, this enumeration ends in the preface with the word "mind" (Jonas, 1966, p. xxiii). In the German

"progressive scale of freedom and peril" (Jonas, 1966, p. xxiii) begins with plants and culminates in humans, proving how deeply the mind "uniqueness" of the community of organisms maintains an interdependence in the face of its uncertainty and vulnerability – something Jonas characterizes as the "*principle of mediacy*"[7] (Jonas, 1966, p. 102) and refers to in the ethical terms of *Das Prinzip Verantwortung* as the "Solidarity of Interests" (Jonas, 1984, p. 136), according to which "the interest of man coincides, beyond all material needs, with that of life as his worldly home in the most sublime sense of the word" (Jonas, 1984, p. 136).

For the philosopher, every living organism "expresses individuality" "even at the unicellular stage" in the form of the "venture of freedom" (Jonas, 1966, p. 106), that keeps it open to the environment that changes it without losing its identity. This risk—which ultimately concerns the complex relationship between matter and form—is characteristic of the kind of freedom Jonas identifies in the biological sphere: a "dialectical freedom" (Jonas, 1984, p. 130), which is a freedom to do but not to not do it. As a "fundamental ontological feature of life" and a "guiding concept that can guide us in the task of interpreting life" (Jonas, 1984, p. 130), freedom is constituted as a *continuous principle* and *constant result* and accumulates the various forms of life to a higher degree.

Based on the hypothesis that metabolism is the first form of freedom and therefore affects both plants and all kinds of animal organisms, Jonas considers that it already exists as an expression of this primary organic freedom, in the form of a "capacity of organic form, namely to change its matter, metabolism denotes equally the irremissible necessity for it to do so" in such a way that "Its 'can' is a 'must,' since its execution is identical with its being" (Jonas, 1966, p. 83). For Jonas, the degree of freedom is synonymous with the degree of need and, consequently, risk: Freedom could be seen as a way for organisms to fulfill their organic need through openness to the world. In this scenario, humans would be more needy and vulnerable than animals (which would give them more freedom precisely because they are also more risky and dangerous), and animals would be more needy and vulnerable than plants (which, in this case, would have evolved more efficient capacities due to their vegetal constitution, which ultimately minimized the dangers but also reduced their horizon of freedom; in other words, since the index of mental activity is a reaction caused by the index of neediness and risk, plants have become mentally lazier, being able to satisfy their needs without much effort).

Two aspects of the organic superiority of plant life

Now, if this seems somewhat more certain when analyzing the scope of animal life, it becomes somewhat less evident and more complex when considering plant life, which Jonas regards as possessing a dialectical characteristic between organic superiority and ontological vulnerability, manifesting in two aspects: *material immediacy* (nutrition) and *spatial continuity* (movement), leading to an important ontological consequence concerning the *indistinction* between the action and the objective of action, precisely tied to metabolism.

Nutritional capacity and material immediacy

Regarding the *first aspect*, Jonas begins by recognizing that everything seems to contribute to the fact that the plant is less affected by the principle of mediacy, since its way of life experiences a more direct relationship with the world around it, which is evident in a first aspect of its ontology: *nutrition*. This is because,

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version of 1973, Jonas ends the same enumeration with the word "Begriff" (Jonas, 1973, p. 4), which, indeed, seems to denote rationality, the intellectual activity of man himself. The word "concept" also appears in the essay *Matter, mind and creation: Cosmological evidence and cosmogonic speculation* (1996).

[7] In the German version: *"Prinzips der Mittelbarkeit"* (Jonas, 1973, p. 156).

> in roots, plants 'invented' the most efficient means of exploiting the inherent advantages of a photosynthesizing organism. Possessing them, the plant is relieved of the necessity (as it is also deprived of the possibility) of movement. Through their continuous contact with the source of supply, the organism-environment relation functions automatically and no further apparatus for adaptation to short-term changes is necessary. Here we have immediacy guaranteed by constant contiguity between the organs of intake and the external supply. In the uninterrupted exchange the current need, though ever renewed, cannot take on the keen edge of want. As satisfaction is contemporaneous with the vital activity, there is no gap across which need could become felt by itself and activity would have to be performed by itself, under the spur of appetition (Jonas, 1966, pp. 103–104).

In other words, plant life has no appetite (something described as characteristic of animal life) precisely because plants' relationship with the world is immediate and contiguous, expressed in the constant supply of nutrients plants receive through photosynthesis and the consequent production of glucose—the plant food *par excellence*, which is so strong that plants do not need to feed on anything else and are the only living things that do not feed on other living things in order to live (with the exception of parasitic and carnivorous plants, which are not capable of photosynthesis). Furthermore, the residue of this process is oxygen, which is essential for other organisms' lives.[8] Being autographic, each plant is a factory that produces its own food.

Finally, it is about the difference between plant and animal metabolism: "By its ability to synthesize inorganic matter directly into organic compounds the plant is enabled to draw its sustenance from the ever-ready mineral supply of the soil" (Jonas, 1966, p. 103), while the *anima* has a volatile supply and depends on specialized organic bodies. Whereas animal nutrition is characterized by the "intake of solid food", plants feed by the "mere osmotic absorption" of soluble food components, without the "involves the interposition of an auxiliary 'mechanical' stage (of conveying, shredding, etc.) before the direct, chemical stage of metabolic appropriation" (Jonas, 1966, p. 103). For this reason, according to Jonas, that is, from the viewpoint of its metabolic capacity, the plant, because of its ability to synthesize nutrients directly, "shows a superiority rather than a deficiency", although it was precisely this that prevented it from developing "other features which the animals were constrained to evolve on the basis of their more precarious mode of metabolism" (Jonas, 1966, p. 103). The conclusion is that independence cannot be regarded as the ultimate value of life, for it can only represent a mode of existence in which "being has exposed itself to dependence", as is the case with plants, which did not have to extend their freedom (and independence) precisely because of their potential for immediate gratification.

In a note on this subject (Jonas, 1966, p. 76, n. 13), Jonas clarifies that the living body (and this therefore includes the plant body) must be understood as a "metabolizing system". This means that it must be recognized that every living thing, as a system, uses its metabolic activity in which it itself performs the act of metabolizing (so the metaphor linking metabolism to a machine is false). In this case, "metabolism is more than a method of power generation" that turns food into fuel; in addition to providing energy, its role is to build the organism itself by constantly renewing form from content.

Movement skills and spatial continuity

As a consequence of this issue, Jonas highlights a *second aspect*, because the "material contiguity between the plant and the environment nourishing" (Jonas, 1966, p. 104) must be understood as one of the reasons for achieving such perfection: In addition to immediate

[8] In plant mathematics, this means, in practice, that six molecules of carbon dioxide, twelve molecules of water, and solar energy result in one molecule of glucose, plus six molecules of oxygen, plus six molecules of water.

gratification (which renders appetite superfluous), proximity also renders *movement* superfluous, so that the plant, unlike the animal, which must change location to feed and thus has invented locomotion, maintains an integrative neighbor relationship with the environment, in which "the plant forms one permanent context into which it is fully integrated, as the animal can never be in its environment" (Jonas, 1966, p. 104). This neighborhood means that in the case of the plant, its environment consists of "adjacent mater and impinging forces" (Jonas, 1966, p. 183). Therefore, "Direct chemical commerce with the environment is the vegetative mode of outwardness, and it remains the basis for all organic existence" (Jonas, 1966, p. 183).

In Chapter 9 of his *Philosophical essays* (1973), entitled "Biological foundations of individuality",[9] Jonas states that the kind of mobility ("peripheral and variable") present in animals is part of the animal identity and "on principle closed to the vegetative level" (Jonas, 1974, p. 203). This means that Jonas does not ignore the possibility of thinking about the movement of plants, but he considers that this is not one of their relevant features, insofar as it is meant to emphasize their difference from animals and, even more, that this has implications for understanding the concepts of individuality and the freedom of organisms.[10] For him, in contrast to plants, movement in animals has an "external character" that "lends to the animal 'situation' an essential fluidity which strongly contrasts with the settled and unidirectional periodicity of plant life" (Jonas, 1974, p. 203). In a long and illuminating note (Jonas, 1974, p. 203, n. 8), he analyzes phototropism (i.e., the tilting movement of plants toward light) and states that this movement is a "response to external changes".

> [It] is relatively fast and perceptible; and since it returns to the initial condition upon appropriate stimulation, it can even be called reversible". For Jonas, this type of movement differs from that which characterizes animal life precisely because the "turning of the leaves is, as to occurrence, rate, and rhythm, entirely governed from without", and "only owing to the cyclical nature of the light-changes involved, that is, to the external agent, that the phototropical motion does 'revert' (Jonas, 1974, p. 203).

Thus, any change in the environment would also change the direction and rhythm of this type of movement, which, unlike animals, does not come from within; that is, it is not necessarily a product of organismic freedom; as a purely reactive movement, the direction of this type of movement is not "under the control of the agent".

For Jonas, the same argument applies to the process of flowers opening and closing and even relates to "the startling performance of certain insectivorous plants", in which "[T]he outward likeness to the animal pattern is indeed strong" (Jonas, 1974, p. 203), whether in relation to the

[9] Originally published in *International Philosophical Quarterly* 8 (June 1968). The text is similar to the essay "Motility and Emotion" published in *The Proceedings of the XI International Congress of Philosophy* (Brussels, 1953, vol. 7) and later included as the sixth chapter in *The Phenomenon of Life* (1966), entitled "Motion and Sensation – On the Animal Soul".

[10] Jonas, in this case, probably does not ignore the works of Charles Darwin (especially "The power of movement in plants," from 1880, a work written in collaboration with his son Francis Darwin; cf. Baluška, Mancuso, Volkman & Barlow, 2009). However, what he intends to emphasize is that this is not a characteristic exclusive to plants. For the debate on this subject, cf. the works of Jagadish Chandra Bose (1958), who developed various devices to measure the responses of plants to external stimuli (especially "The Nervous Mechanism of Plants", from 1926); Frederick William Went (1928), who researched plant hormones and phototropism (especially in "Phytohormones", published in 1936); or Němec (1900) who insisted on the existence of a plant stimulus linked to gravity. Several current philosophers, especially Mancuso & Viola (2015), Calvo & Lawrence (2022), and Marder (2021), resume the debate, offering their own interpretations of the problem. For us, this debate position does not invalidate Jonas's argument, precisely because Jonas does not deny the possibility of movement but merely asserts that it is not a "strong" characteristic, so to speak, as it is in the case of animals.

"digestive use" of the captured protein or the "mechanism of capture".[11] Hence, Jonas asks directly–with the aim of highlighting the difference in the movement of the two types of organisms – "Can the plant close and open those leaves? The animal can close and open its jaws freely, when – ever it feels like doing so-to chew, yawn, or merely to exercise the faculty-and can stop and reverse each movement while in progress." For him, the answer is simple: "it is not 'the plant' that moves 'its' leaves, as the animal moves *its* limbs: it is those leaves that by a predetermined mechanism react to determinate affections of their own condition" (Jonas, 1974, p. 203). According to Jonas, strictly speaking, one cannot call the kind of movement that is present in the plant movement because it does not imply "control of action" (Jonas, 1974, p. 199).

It should be noted that Jonas, unlike other authors, does not treat this subject pejoratively and therefore does not use terms such as "plant sedentariness" or "immobility". According to Marder (2021, p. 265), these terms have been used to characterize plants since the ancient Greeks due to this "tendency to immobility" (Henri Bergson's expression) that characterizes the etymology of the word "vegetation", which Marder defines as the state of that which *vegetates*, that which is *vegetabilis*, which means *to grow* or *to develop* and which is associated with *vegetare* (*to animate*, *to enliven*) and *vegere* (*to be alive*, *to be active*), as well as with the adjective *vegetus*, which means "force" and "activity" (Marder, 2021, p. 266), thus contradicting the negative view associated with passivity and inactivity (inherent in animals that behave like plants). In this sense, as Marder points out, "the subterranean history of the term" is associated with the exuberance of life, vitality, and activity (Marder, 2021, p. 266), and it is with this history that Jonas seems to be connected.[12] He rejects the notion of an ontological insufficiency or even imperfection of the plant to affirm, in opposition to a certain tradition that includes Aristotle, Thomas Aquinas, Hegel, Descartes, and even Heidegger, its superiority that derives from its own way of realizing the self-affirming tendency of life in the midst of the adventure of freedom. Plants are neither deficient nor poor in the world nor without a world. On the contrary, they not only have a world; they *are* a world, insofar as they form an immediate neighborhood with it. Thus, Jonas argues, plants (like all other forms of life) have intrinsic value insofar as they fulfill the purpose of life, which is their own self-affirmation, and thus, they attest to the good and value to be found in the phenomenon of life.

The plant is thus the first step where they *ought to be* meets the *being*, that is, the ontological foundation of ethics. The plant, then, is the first object of human responsibility, for in it, responsibility encounters life in a primordial way. In its exuberant exuberance, the plant sprouts, reproduces, and multiplies with an extreme capacity for replication, regrowing severed limbs, or emerging from grafts with other species, testifying to the importance of such an object to which human duty is appealed. Its life, camouflaged in the slowness of time and the passing of the seasons (trees wither or hibernate to survive droughts or severe winters), and translated into myths and cults that worship fertility, is a manifestation of the phenomenon of life in its self-affirming evidence—between fragility and vital fullness. Again, Jonas recognizes

[11] At this point, Jonas specifically cites the example of the Venus flytrap, which, according to him, "stimulate their sensitive hairs, fold together over the prey and interlock their toothed edges", much like "a feat of goal-directed animal motility" (Jonas, 1974, p. 203), although this is not the case, for their direction is a mere response to stimuli, and the return to the previous position after finishing digestion is nothing like the "reversibility of muscular movement".

[12] Marder also emphasizes that, according to the Aristotelian view of *De anima*, plants are not completely motionless but, on the contrary, would be capable of three of the four types of motion enumerated by Aristotle: Although they cannot change space, "they move by changing their state, growing and decaying" (Marder, 2021, p. 266). Such a perspective opens the possibility of thinking about the existence of a "vegetative soul". Thus, the claim that plants do not move, as Jonas does, has much more to do with comparing what movement means in animal life, and perhaps even with the human difficulty in grasping such movement, than with its ontological absence, so to speak.

propagation (proliferation) along with nutrition as a way of life ontologically superior to that of animals: Before being deficiencies or expressing the poverty of plants, these characteristics translate their never-dormant vitality, their ontological primacy enriched by the global understanding of the teleology they realize through these aspects of their being. The deforestation and mass extinction of plant life underway in today's world therefore represent a catastrophic impoverishment in the general scheme of existence of all beings and become (in themselves and in terms of their implications for the future continuity of life) an ethical problem of acknowledged magnitude. To this end, Marder's words, with which Jonas would fully agree, serve: "The body of a plant exists for the sake of its soul (therefore, for itself), not for our sake" (Marder, 2021, p. 273).

Metabolism: Acting and purpose of acting; *be* and *do*

Thus, if the *first* feature is temporal (Jonas speaks of a "temporal continuity between need and satisfaction"), this *second* aspect is spatial. In both cases, the plant renounces this activity in contrast to animal life, whose relation to the environment is characterized by a temporal and spatial gap that must be filled from "within", so to speak, by an act of freedom. The *third characteristic*, in turn, concerns the absence of the difference between the action and the goal of action in plants; for Jonas, "The typical plants activity is part of the metabolic process" (Jonas, 1966, p. 104) and therefore does not have a significant energy expenditure that must be compensated with the final satisfaction, as is the case with animals, where the sum of action must be properly planned over space and time, taking into account the energy needed to achieve the goal in terms of investment of forces for locomotion, chewing, and eventual confrontation with prey.

The plant does not need energy reserves because it has no risk other than that imposed on it in the immediacy of its relationship with the world. Thus, while "the mediacy of animal existence is at the root of motility, perception, and emotion" (Jonas, 1966, p. 105), the result of which is the enrichment of inner life, plants were, by nature, exempt from such an effort and thus have also lost their inwardness. While the animal lives exposed to risk and is forced to "vigilance and effort", "plant life can be dormant" (Jonas, 1966, p. 105), freed from the tension of the hunt but also from the pleasure of satisfaction. For Jonas, "Motile existence is fitful and anxious: plant life is nothing of the kind" (Jonas, 1966, p. 106). Such an advantage does not necessarily concern duration. For Jonas, "If mere assurance of permanence were the point that mattered, life should not have started out in the first place" because it "is essentially precarious and corruptible being, an adventure in mortality, and in no possible forms as assured of enduring as an inorganic body can be" (Jonas, 1966, p. 106). Such a statement is obvious for animal life but not so much for plant life, since their capacity for duration exceeds that of animals in many cases, so that many trees can reach hundreds or even thousands of years of age, apparently thanks to their exquisite immune system,[13] although they are easily affected by droughts and pests, a vulnerability that makes them important victims of the current climate change.

Conclusions

Although they are excluded from the concept of *anima*, according to the important note on the concept of the animal, in which Jonas refers to Plato's *Timaeus* and Cicero's *De natura deorum* (Jonas, 1966, p. 227, n. 14), Hans Jonas' philosophy of life begins to recognize an important place for vegetable beings, since they represent the first degree of freedom that characterizes

[13] Some research developed at the University of North Texas in the United States and published in *Monday* magazine in the Proceedings of the National Academies of Science has shown that, for example, Ginkgo biloba (Wang et al., 2020) has a vascular cambium that never ages. It should also be remembered that "fossil leaves are increasingly used as bioindicators of old levels of the greenhouse gas CO2", as Sun et al. (2003) have demonstrated.

the history of animate beings. He opposes the diagnosis that reserves for the plant a mere place next to the inorganic, as a worthless being, "the cosmic tumor of humanism, the waste that the absolute spirit can't quite manage to eliminate", to use the harsh words of Emanuele Coccia (2021, p. 294), for whom movements for the liberation of life have not yet reached plants because plants (unlike animals) are considered to be "without personality and dignity, deserving neither benevolent empathy nor the exercise of the moralism that the living superiors are able to mobilize" (Coccia, 2021, p. 296) due to a persistent "animal chauvinism"[14] that makes us insensitive to what is happening in the plant world. Indeed, there is a "persistent neglect" of plants (Coccia, 2021, p. 296).

If the current environmental crisis requires a radical change in our relationships with nature and living things, this can and undoubtedly must begin with a new way of approaching our relationship with plants. This definitely includes a new kind of botanical knowledge encompassing their immense biodiversity[15] and the effects of global warming and human exploitation on the overall balance of life, and above all, new ethical, political, and legal relationships, the germs of which comprise part of various initiatives around the world, such as the declaration of legal rights for three rivers in New Zealand, the recognition of the status of legal personhood for two rivers in the Himalayas, and nature as a legal subject in the Constitution of Ecuador.[16] In this case, the more we know about plant organisms, the clearer the urgency of their recognition as moral and legal subjects, as the American jurist Christopher D. Stone pointed out in 1972 in his text *Should Trees Have Standing? Toward Legal Rights for Natural Objects*.[17] Stone recognized rights for trees especially, which he believed "should acquire the capacity to litigate through representatives", something that for him, unlike Jonas, does not require moral and certainly not metaphysical recognition. Here, Jonas' thesis agrees with the post-humanist movement at the very point where it challenges humanist anthropocentrism.[18] The ontology Jonas proposes (which ultimately leads to a new anthropology, as we have seen) is the basis for his challenge to anthropocentrism and for the recognition of the proper right of all beings—including plants. With plants, we reach the most exact sense of what it means to speak of an "ontological revolution" (*cf.* Tibaldeo, 2009) in the thought of Hans Jonas.

To conclude our reflection, it is worth noting that contemporary biological science has been making efforts that confirm how Jonas's intuitions were correct. Among the most relevant works are those developed by Humberto Maturana and Francisco Varela. The latter, in fact, in his latest published work (2000), pays homage to Hans Jonas: first, through the title of his book,

[14] Coccia refers here to Darley, for whom "As animals, we identify much more immediately with other animals than with plants" (Darley, 1990, p. 356), and Arbor (1986).

[15] With the idea of biodiversity, we want to refer to biological diversity, that is, the variety and variability of living organisms in a particular environment or ecosystem. This includes the diversity of plant species, animal species, fungi, and microorganisms, as well as the genetic diversity within each species. Thus, biodiversity is essential for maintaining healthy and functional ecosystems, playing important roles in the stability and resilience of natural systems. It also provides a variety of benefits to humans, including ecosystem services such as pollination, water and air purification, climate regulation, as well as providing natural resources for food, medicine, and building materials, among others.

[16] On March 15, 2017, the New Zealand Parliament recognized the legal status of the Whanganui River in the Maori community, which was designated as its legal representative. In the same year, the court of the Indian state of Uttarakhand (North) in the Himalayas recognized that the Ganges and Yamuna are "living entities with the status of a legal person," and their rights are recognized as such.

[17] Christopher D. Stone, *Should trees have standing? Toward legal rights for natural objects* (Southern California Law Review, vol. 45, no. 2, 1972, p. 450 501), reprinted 1974 (Los Altos, Cal.), with a foreword by Garrett Hardin; 1975 (Avon Books); and 2010 (Oxford: Oxford University Press, 2010; the text was translated into French in 2022 (Stone, 2022) with a preface by Marine Calmet, and an afterword by Catherine Larrère.

[18] In this case, in direct opposition to the positions of Luc Ferry (1992), for whom the recognition of rights for natural objects is nonsensical because it contradicts the modern humanist tradition, according to which only human beings can have legal personality.

which directly references Jonas's work published in 1966, and then by inserting as an epigraph of his work the phrase by Jonas: “only life can know life”. Regarding the choice of this phrase, Varela clarifies

> Not only is the phrase concise and evocative, but I place it there because the title of this book is an intertext to Jonas's magisterial work, ‘The Phenomenon of Life,’ which was published in 1966. I discovered Jonas a few years ago, when the ideas of the present book were already settled. With passion, I found a philosophy of biology that gave an amplitude to precisely the whole phenomenon of life in a way hitherto unparalleled. Therefore, this thinker, still little known, gave me confidence in my own intuitions. I bring him here as a tutelary figure who continues to be a source of inspiration. Where Jonas was a precursor, and where this book is situated in continuity (...). (Varela, 2010, p. 15).

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