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HARMONY OF THE ECOSYSTEM FROM THE LENS OF DELEUZIAN ASSEMBLAGE THEORY

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Abstract: In the 21st century, crises like the COVID-19 pandemic and global warming require us to radically change our visions with respect to the ecological world. This paper reveals a new horizon of harmony, heralds a non-anthropocentric vision where harmony may be perceived to be a process of the combination, connection, and detachment of various elements of the ecosystem, through the lens of Deleuzian assemblage theory. My arguments re-establish a new ontological framework that is based on the new materialism proposed by Deleuze, Guattari, and DeLanda. First, we will refute the mechanical and organic notion of the harmony of the ecosystem through the concept of 'machinic arrangement' proposed by Deleuze and Guattari. This will allow the traditional notion of harmonious world to be seen as an anthropocentric projection. Next, we will examine the notion of the world and that of harmony through complexity theory and chaos theory, which have guided the arguments of Deleuze, demonstrating the forces of dynamic interactions of elements which produce a fundamental change in the perspective of the ecological horizon. This revises the anthropocentric perspective, which distributes a finality to the world, to direct us toward a non-anthropocentric perspective, and a new materialist vision which consists in changing our ontological framework as well as our relationship with the ecological world.

Keywords: Chaos Theory, Complexity, Dynamic Process DeLanda, Machinic Arrangement, New Materialism, Non-anthropocentrism

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1. Introduction

We will begin by analyzing the notion of 'harmony' from a philosophical perspective. First, harmony refers to a quality of a whole, which results from the accordance of its parts and their integration to an end or an aim. The term presupposes a relation of coordination between the elements of a whole, aimed at a finality (*telos*). In this case, finality is seen as a goal toward which the elements of a whole are directed. One can ask if the finality which is aimed toward a harmony would be a predetermined direction, or if it would be a transcendent unity under which all the elements converge. In the history of western philosophy, the teleological idea of harmony is intimately linked to the conception of the harmony of nature or of the world (*cosmos*) as regulated by rational and divine law. Here, I would suggest viewing the harmony of the world not as a 'finality' that is an established direction or a predetermined goal but as the dynamic and immanent process of the matter through which their interactions emerge.[1] In this sense, to speak of harmony of the world would entail a dynamic process that involves interactions between, and correlative changes of, the elements.

Nevertheless, we could notice that the finalist conception of the harmonious world (*cosmos*) is linked to the term 'ecosystem.' We will examine and refute the conjunction of the conception finalist and harmonious of *cosmos* with the ecosystem, which is made up of various elements such as carnivorous, herbivorous, omnivorous, and human animals, bacteria, plants and earth, rocks, air, and water. The ecosystem, a concept introduced by Tansley, is "a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system" (482). Tansley emphasizes not just organisms but also "the complex interactions of biotic and abiotic factors" (Willam, 11)." These components of the ecosystem combine and interact to form different levels of systems to achieve 'the dynamic equilibrium' and ecological continuity. He insists on the finality of the ecosystem:

> Some systems develop gradually, steadily becoming more highly integrated and more delicately adjusted in equilibrium.

[1] I will explain later this expression of 'matter' because my arguments would try to adopt a new materialist vision according to which this world is composed of matter and of its morphogenetic process.

> The ecosystems are of this kind, and the normal autogenic succession is a progress towards greater integration and stability. The "climax" represents the highest stage of integration and the nearest approach to perfect dynamic equilibrium that can be attained in a system developed under the given conditions and with the available components (300).

Here, Tansley uses the concept "climax," which signifies the finality of the ecosystem and which indicates its "dynamic equilibrium." Dynamic equilibrium designates the stable state of a closed system where the rate of the forward reaction is equal to the rate of the reverse reaction. Since the two rates of opposite reactions are equal, there is no net change. We can deduce that, for Tansley, the concept of ecosystem is considered in a mechanical and closed structure which is regulated and ordered by a higher principle aiming at a stable state.

In fact, the idea of a 'mechanical system' is inspired by 17th century rationalism, notably, by Rene Descartes. In *Discourse on the Method*, Descartes describes the world as a harmonious world created and governed by a rational and superior principle, God:

> If God were now to create somewhere in the imaginary spaces matter sufficient to compose one, and were to agitate variously and confusedly the different parts of this matter, so that there resulted a chaos as disordered as the poets ever feigned, and after that did nothing more than lend his ordinary competition to nature, and allow her to act in accordance with the laws which he (God) had established (Part V).

According to him, the natural world functions as a mechanism regulated by the law of nature, which is conceived by God. Chaos and disorder are only transitory stages which will move toward a period concordant with the rational law. In this sense, the concept of ecosystem suggested by Tansley assumes the idea of a 'harmonious whole,' where ecological balance is realized as the finality of the natural world. Ecological balance refers to the condition of equilibrium among the components of an ecological community, such as the constancy of their relative numbers and of their ecosystem. It denotes that ecological alterations and the instability of their numbers are considered to be re-adjustable to the balanced composition of the ecosystem. This idea presupposes a perfectly organized and ordered whole as a mechanical structure,

where each part is fully integrated and non-detachable, and functions as a subordinate component to a higher unit. Ecological imbalance would be considered as a transitory state that will inevitably be replaced by harmonious balance, which is the purpose of the ecosystem.

Here, we will try to refute this idea of an ecosystem inscribed in a closed and mechanical structure, functioning as a regulated and stable organism. "The etymology of the term system is *synistani* in Greek: it means 'to combine, to associate'. The closed system consists of assembling, associating various elements in a unified and orderly way and rearranging and classifying them, dividing and totalizing according to rational order" (Yun, 342). In this sense, the idea of harmony of nature allows us to design an ecosystem capable of recovering its initial state or initial balance as the inherent recovery mechanisms of the ecosystem. This idea "served to reinforce the conception of nature as systematic, and to that extent, 'balanced'" (Holland, 2).

The idea of harmony, however, is vastly different and dynamic from the idea of ecosystem, when viewed from the lens of a new materialism as proposed by Deleuze and Guattari. In *Anti-Oedipus*, Deleuze and Guattari rethink the relationship between the elements and the whole, while criticizing the idea of a mechanical and totalizing system: "The problem of the relationships between parts and the whole continues to be rather awkwardly formulated by classic mechanism and vitalism, so long as the whole is considered as a totality derived from the parts, [...] or as a dialectical totalization" (44). The system is not a seamless totality, but "is constantly confronted with gaps, divergences, dispersions that intermittent" (43). In this sense, the parts, or components, are no longer fixed, glued and subordinate elements of the upper unit, but can be articulated differently and can also detach and reassemble themselves in a flexible way. Deleuze and Guattari insist that the whole is no longer the mechanical summation of the parts but is the dynamic product of the interactions of the parts; and that these interactions can bring divergences and dispersions, as well as concordances and synergies.

These interactions emanate machinic arrangements' which oppose mechanical structures. Žižek notes that "the image of nature as a balanced circuit is nothing but a retroactive projection of

man" and that "'nature' is already, in itself, turbulent, imbalanced" (38). The idea of a balanced nature presupposes homeostatic states that remove the instability and change of their interactions. In fact, nature, as an ecosystem, is not a closed system or a perfectly regulated whole since it inherently involves chaos and turbulence. Assuming an ordered finality in nature is an anthropocentric projection. In this article, we defend the machinic ecology of Deleuze and Guattari rather than the traditional mechanical ecology.

In *A Thousand Plateaus*, Deleuze and Guattari discuss the concept of machine' in relation to the ecosystem: "The nature is like an immense Abstract Machine… its pieces are the various assemblages and individuals, each of which groups together an infinity of particles entering into an infinity of more or less interconnected relations" (512). This concept of 'machine' provides us with a new way of conceiving relations between parts and whole and allows us to wisely handle "environmental and non-anthropomorphic relations within ecological systems" (Herzogenrath, 4). While mechanics is an ordered structure regulated by a fixed and totalizing principle, for Deleuze and Guattari, machines are made of connections (*Kafka*, 82) and assemblies of interconnections between heterogeneous elements. As DeLanda, a new materialist from the Deleuzian school of thought, observed that the ecosystem involves "assemblages of thousands of different plant and animal species" (DeLanda, *Assemblage Theory*, 11*)* and environments, where these various elements form multiple processes of interactions, and are combined and detachable in a flexible and contingent manner. For example, the symbiosis of plants and pollinating insects is a machinic assembly where two heterogeneous components interconnect and inter-affect constantly in a process of coevolution, established in a contingent manner.

"All ecosystems are open and hyper-dynamic systems that resist closure, homogenization and require a continuous circulation of a flow of energy and matter in their interactive network (Herzogenrath, 6-7)." If we approach the concept of the ecosystem with a new materialist vision, nature as matter "is productive and equipped with capacity for self-organization; nature as the production of the diverse can only be an infinite sum, that is, a sum which does not totalize its own elements… Nature […] is conjunctive" (Herzogenrath, 6-7) with heterogeneous elements. Our

arguments are inspired by the vision of Spinoza and Deleuze: the ecosystem is an open system in the sense that each element, as matter, can be dynamic since it is composed of infinities of molecular particles that exhibit speed and slowness, motion, and rest, and where each element, is correlative with the other heterogeneous matters which have the capacity to affect and be affected (Yun, *Feminism's Geologico-economico-affect*, 150). According to Spinoza in *Ethics*, the elements of nature, having bodies, are indeed materials composed of molecular particles which have speeds, and these bodies weave relationships with the capacity to affect and to be affected, namely, to possess "capacities to interact with other bodies" (DeLanda, *A New Philosophy of Society* 10). These abilities to interact are not already given or predetermined, but "form a potentially open list" (DeLanda, *A New Philosophy* 10).

In this sense, ecosystems are hyper-dynamic, open, and immanent systems where biotic and abiotic components such as carnivorous animals, herbivores and plants, and Sun are flexibly linked and affected together through the food web. Capacity is always relational, and these elements, having the capacity to interact with heterogeneous elements, form "machinic arrangements" in the ecosystem. According to the idea of Deleuze and Guattari, the multiplication of interconnections in a network system is irreducible to any unity (Jayani, 98). DeLanda explains that "the term 'machinic' refers to the synthesis of heterogeneous elements" (DeLanda, *Agencements Vs Totalites*, 140), and their assemblages and combinations can become detached and do not submit to a higher unity. The elements or components acquire "a certain autonomy in their relations with the whole" (DeLanda, *Agencements Vs Totalites*, 140) and can flexibly establish machinic connections as well as machinic disjunctions. This is the "exteriority of relations," which is one of the characteristics of machinic arrangements or assemblages. Machinic arrangements are opposed to mechanical structures, where the combinations of elements are coordinated and fixed by a rational principle. The arrangements of combinations and disjunction of various elements are established by the networks of circulation of energies and biomasses. The ecosystem is meant to be autopoietic and productive with a dynamic interaction of elements. So, we can say that the ecosystem is a machinic arrangement and that the harmony of the ecosystem

is not an end to be followed, but one that must be approached from the point of view of the dynamic process of the nature. "We no longer believe in a primordial totality that once existed, or final totality that awaits us at some future date. We no longer believe in the dull gray outlines of a dreamy […] dialectic of evolution, aimed at forming a harmonious whole" (Deleuze and Guattari, *Anti-Oedipus*, 42). We will now explore the concept of 'assemblage' to better understand this perspective.

3. World through Complexity and Chaos Theories

How can we approach the harmony of the ecosystem from the point of view of the process? Our arguments based on the thesis of Deleuze and Guattari are influenced by the theory of complexity.

> Complexity characterizes the behavior of a system or model, whose components interact in multiple ways and follow local rules, meaning, there is no reasonable higher instruction to define the various possible interactions. The term is generally used to characterize something with many parts, where those parts interact with each other in multiple ways, culminating in a higher order of emergence greater than the sum of its parts (Johnson, 19).

We can see that the theories of complexity and machinic arrangement are intimately linked in the sense that their complex linkages occur at various scales and they share the capacity for emergence. The ecosystem as a machinic assemblage can be approached with the characteristics of self-organization and emergence. The ecosystem is a product of autopoietic capacities of matter in the sense that, matter-energy flow circulates and constantly forms an ecological process through their intensive difference. 'Intensive difference', as proposed by Deleuze and developed by DeLanda, is a term derived from thermodynamics, and it is considered to fuel processes; for example, temperature, pressure, speed, density, concentration, etc., are considered to constitute intensive difference. We can say that the ecosystem, as a process, is always propelled by the intensive difference of matter-energy flow, and that matter include not only organic and inorganic matter, but also all ecological components including humans, and the environment. Herzogenrath explains the capacity of the matter in *Nature/Geophilosophy/Machinic/Ecosophy*: "[T]he

autopoietic capacities of matters reveal themselves at states far from equilibrium, when matter crosses thresholds. Theses capacities are hidden at a state of equilibrium, and yet it is exactly this state of equilibrium that, in traditional science, is regularly taken as the characteristic and essential feature of matter" (6). I note that this Deleuzian idea directly refuses to consider matter as an empty, inert recipient, and refutes the thesis of dynamic equilibrium "as climax," or finality, that constitutes mechanical ecology. Matter has the ability to interact with other matters; matter often crosses its thresholds in its process by changing its state and quality. From the point of view of the process, we can argue that a final state of equilibrium erases the dynamic process of transformation or production of matter. Nature is always a dynamic process propelled by intensive difference: for example, the ecosystem is made up of the processes of the difference in air pressure or the difference in nutrient density of the soil, or the difference in population concentration, etc. Harmony of the ecosystem is not an end or an aim; rather, it should be approached as an emerging property of the dynamic process of this assemblage.

DeLanda notes that machinic arrangements can unfold in two following directions: when the arrangement goes toward the homogeneity of the compositions of the elements, it becomes a 'stratum,' or a mechanical structure, and when the arrangement goes toward heterogeneity of its compositions, it becomes an 'assemblage.' In *A Thousand Years of Nonlinear History*, DeLanda insists that "an ecosystem is a meshwork of highly heterogeneous elements" (112) and that the ecological crisis appeared when "the ecosystem was greatly homogenized: many parts of the forest had been cleared and either converted into agricultural land or simply destroyed and used for fuel or [for] construction material" (121). Ecosystems are the assembly of the multiplication of connections of various components and are plugged into assemblies of different scale across the ecological network. "Mechanical reductionism, which deals entirely with homogeneous variables, will constrain and enable the activities of richly heterogeneous living systems, but it cannot determine their outcomes" (199).

Here, we will take the notion of the "plane of consistency or composition," proposed by Deleuze and Guattari, in order to

explain each scale the nature of composition of the ecological community network:

> It was the variation of the positions and connections of the materials (elements) that constituted the so-called machinic arrangements: machinic arrangements whose common point was that all of them achieved the plane of consistency according to such or such degree of power. So, we have a first very marked link between the plan of composition or consistency and the machinic arrangements which produced this plan in various ways, depending on the position and the connections of the materials in each arrangement (*Cours de Vincennes*, 1974/01/21).

In the 'plane of consistency,' the term 'plane' can be defined as a dynamic field where the machinic arrangements are realized, and the term is notably linked to the concept of 'plateaus,' as the flat and horizontal space which is not framed by the vertical and hierarchical order (Yun, *Analysis of the Terminology*, 277). In *Thousand Plateaus* of Deleuze and Guattari, the plane of consistency is a "smooth space," not coded, that is, not marked by the framing or hierarchy coding while the "plane of development" is "a space striated" by the hierarchical coding or regulators (Deleuze and Guattari*, Thousand Plateaus* 47*)*. If we adapt the theory of complexity to the ecosystem, the plane of consistency, where the machinic arrangements of ecological components are realized, bring out each scale of ecosystem, and in this ecosystem, complex linkages at various scales can be considered and multiple parts interact with each other in diverse ways.

This view is opposed to the view of Eugene Odum's regulatory ecosystem theory.

> Nature was conceived as a series of hierarchically ordered ecosystems at various stages of development. Distinguishing features of mature, as opposed to immature, ecosystems were drawn up, such as greater stability, increased diversity, and minimal loss of minerals and nutrients. […] Their existence (these energies, mineral, and nutrient cycles) served to reinforce the conception of nature as systematic and to that extent 'balanced' (Holland, 1-2).

The concept of a self-regulating ecosystem has been refuted by Rober May, father of chaos theory, and Daniel Botkin who brought

an ecological perspective to complex, dynamic system. Even if "many systems thinkers were still ultimately aiming to improve their ability to better predict and control the system in question" (Wahl, online), since the 1950s, according to catastrophe theory, chaos theory as well as complexity theory, from which Deleuze is inspired, the vision of the world has developed completely different. According to the complexity theory, the world is no longer a mechanism regulated or predicted by human reasoning; it contains complexities that are beyond human control. This ecological world is a dynamic and open, complex system whose "interconnectedness, unpredictability, and uncontrollability are key characteristics" (Wahl, online).

According to Goodwin, complexity theory offers a new way of seeing the world.

> Complexity theory is becoming a science that recognizes and celebrates the creativity of nature. Now that's pretty extraordinary, because it opens the door to a new way of seeing the world, recognizing that these complex dynamic systems are sensitive to initial conditions and have emergent properties. We have to learn to walk carefully in relation to these complex systems on which the quality of our lives depends, from microbial ecosystems to the biosphere, because we influence them, although we cannot control them. This knowledge is new to our western scientific mentality (27).

It is undeniable that "complexity is, thus, a common feature of the world we inhabit" (Wahl, online) and that the ecosystem is a complex system having non-linear dynamics and making an unexpected order visible. Chaos theory and catastrophe theory "seek an understanding of simple systems that may change in a sudden, unexpected, or irregular way" (Warren, 125). Chaos theory offers us a new framework to design complex dynamics by exhibiting the limits of mechanistic thinking, based on the linearity of cause and effect. This allows us to better understand the non-linear and unpredictable world. The ecosystem includes phenomena characterized by sudden changes in behaviour and produced by small input, and we can affirm that this ecosystem may be considered a non-linear and dynamic system. Further, "small differences in initial conditions [...] can yield widely diverging outcomes for such dynamical systems, rendering long-

term predictions of their behavior impossible" (Stephen, 32). Therefore, a nonlinear system is a system that goes beyond the simple relation between cause and effect. We can say that the ecosystem is not a self-regulating and mechanical system that aims to ensure harmony and perfect prediction, but it is a dynamic and open, non-linear system made up of turbulence and hidden patterns that can generate disasters or unexpected changes.

> When we speak about chaos theory, it is important to understand that chaos does not refer to a state of absolutely incoherent disorder, rather the scientific term "chaos" refers to an underlying interconnectedness that exists in apparently random events. Chaos science focuses on hidden patterns, nuance, the sensitivity of things, and the rules for how the unpredictable leads to the new (Briggs and Peat, 2).

In this ecosystem, "there is no reasonable higher instruction to define the various possible interactions" (Johnson, 19), nor is there a direction to take as its finality, or a linear systemic explanation. "Chaos may play an important role in the functioning of living systems has been confirmed" (Kernick, 3), and hidden patterns and random order are included in this ecosystem. Chaotic behaviour sometimes appears random or periodic, and chaotic patterns arise from recursive feedback among their components. "Obviously, Deleuze and Guattari would find unacceptable any postulated balance of nature, […] Stuart Pimm, in *The Balance of Nature*, argues that natural systems seldom operate in equilibrium, and indeed often function in states far from equilibrium. Stability, in the strict sense, is rare in ecosystems, Pimm shows, and […] [a degree of regularity] must be analyzed in terms of the system's response to variables" (Bogue, 49).

The elements in the ecosystem combine and interact based on their ability to affect, and be affected by, heterogeneous elements. We can speak of "the concept of machine that includes non-anthropomorphic affectivity within dynamic systems" (Herzogenrath, 4). For example, pink orchid mantis and orchid are machinically interconnected and coevolved elements in relation to pollinating insects. The pink orchid mantis coevolved by adapting to and assimilating its appearances with orchids in order to catch its prey near the plants.

> "Survival of the fittest" is a popular term that refers to the process of natural selection, a mechanism that drives evolutionary change. Natural selection works by giving individuals, who are better adapted to a given set of environmental conditions, an advantage over those that are not as well adapted. In a biological sense, evolutionary fitness refers to the ability to survive and reproduce in a particular environment and cooperation. […] And many organisms are the "fittest" because they cooperate with other organisms (Bogue, 45).

These components of the ecosystem are dynamically interconnected and affect each other in their evolutionary process; thus, the ecosystem is comprised of capacities of non-anthropomorphic affectivity. "Once the question of coevolution is introduced, it becomes clear that interacting species in an ecosystem have the ability to change each other's adaptive landscapes" (DeLanda, *A Thousand Years*, 140). Thus, we argued for a notion of the ecosystem which consists of a new, dynamic, non-linear and complex dimension in which the notion of the harmony of the ecosystem is considered to be an emerging characteristic of a process of change of its state, and not a regulated finality.

6. Deleuzian Assemblage Theory

In *A Thousand Plateaus: Capitalism and Schizophrenia* and *Dialogue*, Deleuze and Guattari develop the theory of arrangement as a new ontological framework. "What is an arrangement? It is a multiplicity which includes many heterogeneous terms, and which establishes links, relations between them, across ages, sexes, kingdoms of different natures. Also the only unity of the arrangement is co-functioning: it is a symbiosis" (Deleuze, *Dialogue*, 84). As we have seen above, the symbiotic co-functions of the ecosystem do not articulate as an organic and systemic mechanism, but are articulated in "emphasizing fluidity, exchangeability, and multiple functionalities through entities and their connectivity. Each multiplicity is symbiotic; it's becoming ties together animals, plants, microorganisms, mad particles, a whole galaxy: (Deleuze and Guattari, *Anti-oedipus,* 250). With this vision, the notion of 'nature' is also displaced. "This notion of Nature as '*bricoleur'* is widespread in *A Thousand Plateaus*, […] in that of the 'assemblage' as collection of heterogeneous entities that somehow function

together. […] The Nature is filled with shifting circuits of heterogeneous elements connected in multiple, unexpected combinations that function with varying degrees of efficiency" (Bogue 45-46).

Thus, harmony, in this case, "is not to be found in the properties of an arrangement or in its components; it resides in changes in its state, changes constituting events" (DeLanda, *Agencements Vs Totalites*, 142). Harmony no longer refers to a regulated or ordered direction of nature, but the dynamic forces in various and heterogeneous relationships of matter to a phenomenon. DeLanda explains how the assembly is made: "(assembly) at any level of scale is always the product of a process (territorialization and, in some cases, coding) and it is always precarious, since other processes (deterritorialization and decoding) can destabilize it" (DeLanda, *A New Philosophy of Society*, 58). An ecosystem as "a complex assemblage of those assemblages […] yield an open-ended becoming" (DeLanda, *Ecology and Realistic Ontology*, 40). Harmony is not a static term or a goal to be achieved, but I propose that it is, in a way, "an event"[2] that crosses and resonates with the ecosystem as the emerging force of becoming. What does it mean for harmony of nature to be an event?

The idea of Deleuze shows that, in the assemblage, its elements play two distinct roles: material and expressive.

> For some assemblages, the material components might be natural resources located within their spatial boundaries; these might include mineral deposits, agricultural land, etc. Material components can involve a range of causal interactions, but expressive components, on the other hand, usually involve catalysis. For example, territorial animals use odors, sounds, and colors to express their identities. Those expressions act as triggers for behavioral responses in rivals and potential mates (Clough, 389).

In this natural world, bodies (which are material) meet and interact by producing dynamic effects like material expressions: for example, the predator and the prey interact and affect each other by producing various effects on the bodies of the two components (colour, shape, behaviour, etc.). Constellations of material components, being assembled, form series of *becoming* effects,

[2]This term is proposed by Deleuze in *La Logique du sens* (1969).

which converge in a singular direction producing an 'event.' "A biological creation, as simple as a unicellular organism, is internally characterized by many complex series of events" (DeLanda, *Agencements Vs Totalites*, 143). The harmony of the ecosystem emerges by singular processes of a machinic arrangement, for it to become an 'event;' thus, one should refuse to attribute common or ordinary meanings to the term which displace its meaning. So, harmony of the ecosystem is not a static or regulated state, it is an 'event,' in the sense that forces of unexpected combinations create new series of effects and give new senses to ecosystems. When things combine with other things, they form series and produce a certain meaning, this is what we call an 'event.' Since things or elements can change their combinations and disjunctions, the meaning of an event can change too, and a thing can vary the line of serialization or combination. Therefore, harmony is an event, an effect of serialization of things in their particular arrangement. Harmony does not persist because it is not the property or the purpose of the ecosystem; it acts as a resounding effect and traverses through singular arrangements and is, quite simply, the emerging characteristic of a process of changes in its states.

7. Conclusion

This article aims to provide an alternative to the sense of harmony of the ecosystem which is anchored in the mechanical and totalizing vision. To do this, we adopted the lenses of Deleuzian assemblage theory, in which, the ecosystem is seen as an open and dynamic assemblage. Our philosophical arguments challenge the common understanding of harmony of the ecosystem, and support the new materialism proposed by Deleuze, Guattari, and DeLanda. The neo-materialist and Deleuzian perspective toward the ecosystem and its harmony is articulated differently from the mechanical and regulatory perspective of the world. Using the concept of 'machinic arrangement' introduced by Deleuze, we can propose a new framework of ontology that consists of transcribing the relation of the components with the whole in 'the exteriority of the relations.' This contrasts completely with the traditional framework of hierarchical and Hegelian ontology. In the ecosystem as an assemblage, elements can interact with heterogeneous elements, and "can be detached from the whole to be connected to

another arrangement" (DeLanda, *Agencements Vs Totalites*, 142). Arrangement theory exposes the problems with linear, closed, and regulatory systems, in order to direct us toward a vision of an open, non-linear, and dynamic system. Our theses allow us to consider harmony of the ecosystem not as the property or purpose of nature, but as the emerging characteristic of a process of changes in its states or the effects of complex series of events. "The universe and all these emerging arrangements would follow a process of progressive differentiation" (DeLanda, *Agencements Vs Totalites*, 144) and all these elements of the ecosystem are intimately linked and affected in an open dynamism. My thesis pushes us to rethink our anthropocentric perspective, allowing us to look at the goals of our world in a more hierarchical way, directing us towards a new materialist vision. This vision will precipitate a change in our framework of ontology as well as our relationship with the ecological world. In this new materialist perspective, the world is no longer hierarchized by any transcendent order, but all beings as matter align with the horizon of flat ontology.

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