

# Gaia Metaphor in Latour's Ecological Thought

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Bruno Latour's Actor-Network Theory (ANT) gained recognition for its distinctive features, namely its emphasis on acknowledging the agency of non-human actors and its strong focus on understanding the intricacies of networks and connections. These foundational aspects not only laid the groundwork for Latour's subsequent exploration of ecological issues but also paved the way for the development of his influential notion of Gaia metaphor. The Gaia metaphor serves as a vital carrier for Latour's ecological thinking, encompassing the core ideas of ANT while providing a significant framework for comprehending the complex dynamics of ecology we live in. When contemplating the predicament of human existence and the pressing challenges of ecological crises, through the Gaia metaphor, Latour proposes that we should reject a purely global perspective, trace loops, and cultivate sensitivity within aesthetics as a means to perceive and engage with Gaia, promoting a more nuanced understanding of our interdependencies with the Earth. Consequently, the Gaia metaphor holds an indispensable position within Latour's ecological thought, offering profound insights into the theoretical foundation and deeper implications of his ecological framework.

*Keywords:* Gaia, Actor-Network Theory, Latour, ecology

## Introduction

Actor-Network Theory (ANT), proposed by the renowned philosopher, anthropologist, and sociologist Bruno Latour, is an analytical framework widely applied in scientific research. The theory revolves around the concept of actor-networks, which refers to the process in which heterogeneous actors form networks and develop them to address specific issues (Liu, 2006, p. 24). Actors encompass both human and non-human, reflecting Latour's notion of treating human and non-human actors equally and avoiding the binary opposition between nature and society. This theory proposes that non-human and human factors coexist as inseparable, interdependent, and mutually influential elements within dynamic and complex actor-networks.

For Actor-Network Theory's subversive and universal feature, it has gained significant attention both domestically and internationally. Scholars in China have extensively explored key concepts of ANT, such as actors, networks, and translation, as well as the theory's origins, content, major contributions, and significance (Guo, 2007; Guo, 2008; Liu, 2017; Zhong & Hong, 2017). One widely researched aspect is agency, with significant contributions from scholar He Jianqin. He (2011; 2012) and He and Li (2014) argue that ANT seeks to decentralize human agency by ascribing agency to non-human actors, encompassing both the prerequisite of unveiling human agency and limitations. So she proposes that we can replace strong symmetry with weak symmetry principles. In addition to theoretical discussions, ANT has also been used as a tool to analyze and

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address practical problems across various fields, including book translation, public policy and management, business, and science and technology (Chen, 2021; Gao, 2013; Shi & Wang, 2020). In the field of translation, scholars have analyzed the construction process of translation projects, internal interactions within translation teams, translation strategies, and textual variations (Cheng & Xing, 2017; Li & Ren, 2020). In the field of science and technology, scholars have applied Actor-Network Theory to analyze newly-emerged technologies such as big data and bullet comments technology on video-sharing platforms, offering new insights into the relationship between technology and humans (Gan & Huang, 2018; Yan & Yue, 2020). The research conducted by foreign scholars showcases diverse perspectives. Firstly, there is research from a spatial perspective, which argues that actor-network spaces are heterogeneous and constructed through relationships (Muller, 2015; Murdoch, 1998). Secondly, there is ontological analysis of the value of Actor-Network Theory (Edward, 2016). Finally, there are applications in the field of science and technology. Actor-Network Theory can trace and describe the connections and translations of interests between human and non-human actors within the context of science and technology, thereby revealing issues in the implementation process (Cresswell, 2019). Furthermore, Actor-Network Theory has been applied in accounting research, the education industry, and other fields (Fenwick, 2010; Justesen & Mouritsen, 2011).

As an integral part of Latour's early thinking, Actor-Network Theory occupies a central position in his subsequent study of Gaia. Domestic research on Latour's ecological thought primarily focuses on organizing and elucidating his relevant works, ideas, and key concepts related to ecological thinking. International scholarship places Latour's Gaia thinking within the historical and developmental context of the term "Gaia", analyzing Latour's notion of the common world and world politics. Although a few studies mention that Actor-Network Theory forms the foundation of Latour's Gaia thinking, there is currently limited literature that views Latour's Gaia thinking as a metaphor and employs the Gaia metaphor to deepen the understanding of Latour's Actor-Network Theory and ecological thought. Therefore, this study aims to interpret Latour's Gaia metaphor, comprehensively analyze Actor-Network Theory through this metaphor, and explore how Latour plans to face Gaia. This exploration will lead to a profound understanding of the inherent implications and immense potential of Latour's ecological thought in conjunction with practical ecological issues.

### **Gaia Metaphor: From Anthropocentrism to Actor Network**

In Greek mythology, Gaia represents the Earth goddess, the mother of all life, possessing immense power surpassing that of the gods. However, Gaia is not the traditional image of a benevolent and loving mother figure. On the contrary, she is mysterious, chaotic, and possesses both terrifying power and dangerous wisdom. In the 20th century, James Lovelock introduced the concept of Gaia in the Gaia hypothesis. The Gaia hypothesis emphasizes that life forms on Earth are not merely adapting to the environment, but actively regulating and influencing the Earth's environment to maintain conditions suitable for their life. Latour's contemplation of Gaia was inspired by the Gaia hypothesis. However, while Lovelock referred to Gaia as the Earth as a whole, Latour opposed the concept of a spherical Earth and instead viewed Gaia as a thin membrane enveloping the Earth, with a thickness of only a few kilometers, encompassing all actors, both human and non-human.

It is evident that the term Gaia itself carries rich metaphorical connotations throughout history. Gaia represents the origin of all things, the primordial source of the world, while we humans are merely transient travelers on Earth. It is through this all-encompassing Gaia metaphor that Latour presents the rich connotations of Actor-Network Theory, integrating its true intended meaning into ecological considerations and addressing

existential issues that affect us all, ultimately calling for genuine action. By understanding the Gaia metaphor, which encompasses actors and networks, we realize the importance of non-human entities demanding our attention, and that humans are not the center of everything, but rather the interconnection of actors is the essence of the world.

Actor-Network Theory itself serves as a powerful weapon for Latour to overthrow anthropocentrism. Understanding Latour's Actor-Network Theory requires grasping two core elements: "actors", which regard both humans and non-humans as significant elements, and "networks", which signify the nature and existence of connections between actors. Both of these elements are prominently manifested in the Gaia metaphor. Thus, we will start by elucidating the implications of Latour's Gaia metaphor from these two perspectives, which will deepen our comprehension of actor-network theory.

Firstly, Gaia encompasses all human and non-human actors, placing significant emphasis on the agency of non-human actors. As the goddess of the Earth, Gaia's metaphor implies the inclusion of everything on the planet. Latour posits that all actors, humans and non-humans alike, coexist within Gaia and actively engage with other actors to construct and influence the surrounding environment, thereby sustaining their own existence. While Darwinists argue that organisms adapt to the environment, Lovelock and Latour believe that organisms not only adapt but also modify the environment. It is not just humans who possess the ability to transform and adjust the environment according to their needs, but also other forms of life, such as ants, fungi, viruses, and more. This notion of organisms shaping their environment extends beyond humans to encompass all actors, both human and non-human.

Modern humans, driven by self-interest, have regarded themselves as the center of action while neglecting the presence of Gaia since time immemorial. The relentless extraction and destruction by humans have resulted in the rapid deterioration of the global environment and the eruption of ecological crises. However, these crises themselves serve as a rebellious response, loudly declaring that no non-human and human actors will consent to be mere means. On the contrary, they demand power and become ends in themselves (Latour, 2004). Humans and non-human actors coexist within Gaia, sharing in both prosperity and adversity. This is why Latour calls for us to face Gaia and coexist harmoniously with her. Latour's Gaia requires us to recognize the Earth as the only known living planet from a participatory observation standpoint (Clarke, 2020). We need to be aware of our shared destiny with both human and non-human actors, realizing that we have only one Earth and one Gaia. Therefore, it is only by abandoning anthropocentrism and truly valuing every non-human actor that we can rescue ourselves from the ecological crises.

In fact, Latour's Gaia metaphor resonates with traditional Chinese thinking. Throughout history, Chinese people have possessed a strong sense of the land, with thousands of years of agricultural history making the land our mother, essential for our survival. We highly value and respect the non-human existence of the land, precisely as Latour's Gaia metaphor advocates. Also, the ancient legend of Nüwa creating humans from clay reflects our worship of the Earth and the mother figure. Nüwa molded humans from the soil, creating mankind, while the soil itself forms the basis of our existence. As a female deity, Nüwa became the creator and mother of all beings, just like Gaia, the mother of all creation. Additionally, the ancient Chinese concept of "Tian Ren He Yi" (Unity of Heaven and Humanity) advocates for the coexistence of nature and humans, recognizing the unity between the two and promoting respect, awe, and harmonious coexistence with nature, aligning perfectly with Latour's ideas.

Secondly, Gaia embodies intricate and diverse networks and connections. Actors within Gaia adjust their surrounding environment for their own survival, while the affected neighbors also make adjustments, in turn

influencing the other actors. Through these connections, Gaia allows us to understand how our lives mutually influence and shape our own world of existence. Similarly, Latour (2017, p. 106) said that “the climate is the historical result of reciprocal connections, which interfere with one another, among all creatures as they grow”. Lovelock proposed that oxygen that gradually appeared at the end of the ancient era is originally a toxic substance, but now it adjusted the living environment and promoted the reproduction of other life forms. We now inhabit an atmosphere predominantly composed of oxygen because certain organisms transformed this toxic substance into a beneficial elixir for the reproduction of life forms. The evolution, climate, and story of life on the planet are interconnected, and these stories cannot be told from a human-centered perspective alone (Chakrabarty, 2016). Throughout the course of time, the connections within Gaia have led to the co-evolution of climate and life, mutually influencing and causing each other. Latour integrates the concepts of networks and connections from Actor-Network Theory into the Gaia metaphor. Each actor within Gaia responds to the influences it receives and actively exerts influence on other actors. All actors interdependently form nodes within chains of networks, constituting actor-networks devoid of anthropocentrism.

Latour's Gaia metaphor not only emphasizes the coexistence of human and non-human actors but also embodies intricate networks and connections. It is through this metaphor that Latour reveals his firm resistance against anthropocentrism and breathes new life into Actor-Network Theory within the context of human survival practices, enabling us to grasp the rich connotations of Latour's ecological thought.

### **Facing Gaia: From the Globe to Loops**

In the Gaia metaphor, Gaia represents the shared habitat of all human and non-human beings on Earth. Facing Gaia means recognizing that both human and non-human actors coexist within the densely interconnected network of Gaia and acknowledging that our actions not only affect Gaia but also jeopardize our sole environment for survival. So, how should we approach Gaia? Latour proposes that we should understand the dangers of globe and global thinking, avoid the global perspective, track loops, and face Gaia while saving ourselves.

Sloterdijk believes that the concept of the globe forms the cornerstone of western thought, yet nobody questions how the globe is constituted (Latour, 2017). When we claim to have a global perspective, where do we stand to gain this global view? Latour draws from Sloterdijk's ideas to strongly oppose the notion of a global perspective and spherical thinking. Latour (2017, p. 138) argues, “the notions of globe and global thinking include the immense danger of unifying too quickly what first needs to be composed”. In other words, a global perspective skips the process of tracing connections, disregarding our paths of action, and depriving us of the opportunity to be aware of the consequences and responsibilities of our actions. This indifference leads us to become numb and indifferent in the face of ecological crises, neglecting our role as individuals and our duty to respond and effect change. The global perspective makes us believe in a higher-level unified entity responsible for solving problems, refusing to acknowledge our individual and collective responsibilities. However, as described in Actor-Network Theory, each of us possesses agency, and our smallest actions can impact numerous actors, which, in turn, can influence other actors, ultimately leading to significant consequences. The global perspective obscures the complexity of interconnections, neglecting the infinite agency that each actor possesses.

Using the example of the global spread of the COVID-19 pandemic in 2020, globalization and the global perspective also facilitated the rapid transmission of this virus. The rapid development of human science and technology facilitates the progress of modern civilization and accelerates capital accumulation and globalization, increasing population mobility. However, it also paved the way for the rampant spread and evolution of the virus.

Moreover, the fast-paced nature of globalization has led people to lose a clear understanding of their paths of action and disregard the existence of non-human actors. Paradoxically, it was the effect of tracing virus transmission chain that initiated the process of tracing and composing that was neglected by globalization. The virus unconsciously spreads through repeated contacts and connections, contradicting the disregard for connections caused by the global perspective, reminding us of the existence of our paths of action, and revealing the interconnected nature of our existence.

So, "how can one manage to trace the connections of the Earth without depicting a sphere?" (Latour, 2017, p. 137) Latour's answer lies in loops. A loop is a cycle that returns to itself, meaning that the consequences of our actions feedback to ourselves. Such circular movement allows individuals to be driven by interactive action and participation rather than ideology (Latour, Milstein, Marrero-Guillamón, & Rodríguez-Giralt, 2018). By tracing loops, we can reflect on our own actions, understand how they affect other actors, and realize our capacity and obligation to change. This is why we must move from a global perspective to a loop perspective because only by continuously delineating intricate loops, expanding their scale, can we develop a clearer awareness of the Earth and Gaia. Neglecting the process of tracing loops and solely adopting a global perspective will blind us to the consequences of our actions and absolve us of the responsibility to respond and change.

Tracing loops liberates us from isolated and indifferent global thinking, making us aware that we exist within an interconnected actor networks and enabling us to understand the dynamic impact of actors within loops. This not only embodies the core ideas of Actor-Network Theory, where actors are interconnected in networks, but also helps us deeply comprehend the tracing concept within this theory. In Latour and Woolgar's (1979) and Latour's (1987) early works, they pioneered an anthropological perspective to observe the work of scientists in laboratories, revealing that scientific facts are produced through constant debates and negotiations, facilitated by textual systems such as scientific instruments, experiment reports, and graphs. Scientific knowledge production in the laboratory occurs within a network of intertwined human and non-human actors, where the traditional boundaries between society and nature, human and non-human, are blurred. The tracing concept in Actor-Network Theory dissolves the long-standing dualism between nature and society, and the Gaia metaphor introduces the tracing of loops, breaking our long-held assumptions about the global perspective, awakening people to engage in matters that do not directly concern them, and realizing that even our smallest actions can have unpredictable impacts on other human and non-human actors, ultimately affecting our shared home, Gaia.

The word "sensitivity" in the dictionary is defined as "something that detects or reacts rapidly to small changes, signals, or influences" (Latour, 2017, p. 141). Latour argues that if Gaia and humans are equipped with enough receptors to receive feedback, the term sensitivity applies to both Gaia and humans. In the modern dualism, nature is seen as indifferent, unquestionable, and superior, while Gaia is portrayed as sensitive and responsive, quickly reacting to what is detected within the membrane. All disasters are, in fact, Gaia's sensitive responses to perceived actions and the result of interactions and influences among human and non-human beings. While humans can threaten Gaia, we are constantly surrounded by Gaia. Therefore, humans also require sensitivity to be aware of their actions that ruthlessly exploit the environment and disrupt ecosystems, and we need to be sensitive to the Gaia that envelops us.

The COVID-19 pandemic serves as a reminder for us to cultivate sensitivity. The virus spreads through human-to-human contact and can be transmitted through contact with objects, creating an intricate web of relationships between humans and non-human actors, allowing the virus to infiltrate every aspect of our existence. As proponents of human-centered thinking, we often overlook the connections between non-human and human

actors. However, the massive spread of the COVID-19 virus highlights the omnipresence of these connections and our existence within the complex network of Gaia. Therefore, our task is to enhance our sensitivity, to experience and perceive the world in which we live, to understand the consequences of our actions, and to take concrete actions to effect change. Otherwise, we can only expect more terrifying disasters in the future than COVID-19.

After endowing Gaia with rich metaphorical implications through actor-network theory, Latour provides insights on how to face Gaia. He highlights that a global perspective obscures the steps of tracing actions and connections. Only through constant tracking of loops can we comprehend the interconnections of actions, engage in self-reflection, and modify our behavior. Additionally, he proposes cultivating sensitivity as a means for humanity to face Gaia, enabling us to perceive the subtle actors and networks in our lives and ultimately sense Gaia's presence.

### **Perceiving Gaia: From Science to Aesthetic**

The theory of actor network initially emerged from anthropological investigations of scientific laboratories and now finds renewed vitality and universality in the Gaia metaphor, which advocates for tracing loops and cultivating sensitivity. By linking sensitivity to aesthetics and perceiving Gaia through aesthetics, Latour successfully shifts the focus from science to aesthetics, highlighting the significance of the return to aesthetics and art in a society that esteems rationality.

In its ancient sense, beauty refers to the capacity to perceive and be affected (Latour, 2017). Latour argues that art and aesthetics help to enhance our sensory perception and sensitivity to the actor-networks that surround us, enabling us to perceive Gaia. Literary works, plays, paintings, and other art forms fall within the realm of aesthetics. In ancient Greece, theater played an educational role, with Plato asserting that theater can cultivate virtues in individuals, and Aristotle acknowledging its potential for moral instruction. Theater, as an art form where both the audience and actors are present, has an undeniable impact on enhancing sensitivity. The theater places the audience and performers in the same space and time, creating an immersive and collective experience that evokes intense emotions, which cannot be released through individual reflection. In the confined space and through sensory stimulation, the theater awakens modern individuals and prompts them to deeply contemplate the issues raised in the drama.

Latour himself actively participated in the creation and conceptualization of the drama *Gaia Global Theatre*, demonstrating how aesthetics can help others perceive Gaia. This play draws inspiration from a contradictory question: Despite the impending global warming and the prospect of human extinction, why do we seem unaffected? Latour describes this issue as the "immense gap between petty human concerns and the huge issues of ecology" (Collins-Hughes, 2014). The play *Gaia Global Theatre* takes climate change as the topic, combining scientific and theatrical forms of expression through experimental and innovative props and stage design. It explores why we fail to confront the ecological crisis and take decisive action by tragic and comedic narratives. The theater enables the realization of thought experiments by presenting performances and speeches by unspeakable non-human actors, such as monsters, storms, Noah's Ark, scientists, and deities. It becomes a stage where non-human actors can express themselves and an arena for positive imagination where they take center stage. The purpose of this play is to change the audience's consciousness and beliefs, enhance their sensitivity, and make them aware that the ecological crisis is not a distant and abstract scientific problem but a concrete reality that will influence all non-human and human actors. The audience needs to transcend the apathy of

disengagement from the ecological crisis and confront the shared uncertainty of our existence. In response to this issue, Latour's answer is to face Gaia. The ecological crisis is intimately connected to each of us, and only by cultivating sensitivity through various aesthetic experiences can we perceive Gaia, recognize the current situation, and take action to change it.

Literature can also make us sensitive and help us perceive Gaia. In Margaret Atwood's *MaddAddam* trilogy, a bioterrorism scientist creates a new disease to eradicate humanity for he cannot stand unregulated capitalism's exploitative persecution of the Earth and humanity. The second book of the series, *The Year of the Flood*, depicts a utopian community called "God's Gardeners", which adhere to a "green religion" believing that humans and the environment are inseparable. They consume only vegetarian food, gather wild plants and fungi, raise bees, recycle items from garbage, and even utilize maggots for medicinal purposes. In the aftermath of the apocalypse, they coexist harmoniously with nature, relying on their own hands for self-sufficiency. They pose the question: Why do we think that everything on Earth belongs to us when, in fact, we belong to everything? We betrayed the trust of animals and filled the Earth with ourselves, resulting not only in the destruction of everything else but also in our own destruction (Atwood, 2010). In a world where humanity's dominion over the Earth is overthrown by the apocalypse, people begin to perceive their relationship with non-human actors correctly, recognizing that they coexist with everything on Earth. Margaret Atwood insists that she writes speculative fiction, indicating that such apocalyptic worlds are possible futures for humanity. Upon reflection, readers may realize that these stories are not mere fantasies but have the potential to become reality. Under the impact of these narratives, readers can genuinely begin to contemplate the relationship between humanity and ecology, become aware of the consequences of our actions on the Earth, and consequently perceive Gaia.

In fact, modern human, who have become alienated by rapidly advancing scientific technology, should also perceive Gaia through aesthetics. Modern humans have lost themselves in instrumental rationality, flooded by vast amounts of digital data and information. We have lost the immersive experience of smelling flowers, feeling the breeze, and the joy of hair gently swaying. We have lost the ability to engage all senses and live in the present, grounded in the Earth. Consequently, we are unable to perceive the severe consequences of our actions. In the face of the impending ecological crisis, we comfortably recline on our sofas, learning about the extent of ocean pollution or the plight of endangered animals through text and images on glowing screens. Constant streams of data and news serve as warnings, yet they desensitize us to the ecological crisis amidst the flood of information, fostering complacency and apathy. Aesthetics is the antidote that allows us to reclaim the experience and sense of existence. We need to turn to aesthetics to escape from fragmented information and cold technology, to rediscover the softness and warmth of the land, to perceive the presence of both human and non-human actors around us, and to regain the sensitivity we ought to have. Through aesthetics, we can perceive Gaia and ultimately rescue humanity from the ecological crisis.

### Conclusion

The Actor-Network Theory is an indispensable core in the Gaia metaphor, which, in turn, serves as the primary carrier of Latour's ecological thought. Research on Latour's Gaia metaphor not only provides a valuable opportunity to deepen our understanding of the essential nature and powerful practical potential of the actor network theory, but also enables us to comprehend Latour's ecological thought from a more organic and macroscopic perspective. Through the inclusive and comprehensive metaphor of Gaia, Latour seamlessly

integrates the theory of actor-network into the contemplation of ecological issues, answering the question of how to face Gaia and highlighting the humanistic concern that values aesthetics and art.

The theory of actor-network is far from being a simple theory that only values non-human actors and emphasizes networks. Through the Gaia metaphor, it promotes reflection on our actual human existence by embracing non-human actors, explaining our existence of connections, and challenging anthropocentrism. Responding to Gaia requires us to transcend a global perspective, trace loops, and enhance our sensitivity. Perceiving Gaia through aesthetics and art is not only a prerequisite for assuming responsibility and taking action, but also the key to rescuing ourselves from the ecological crisis as modern individuals. Therefore, the theory of actor-network is no longer a hollow theory confined to paper and text, and Gaia is no longer a shallow myth. On the contrary, the Gaia metaphor, carrying the theory of actor-network, exists in every corner of the Earth, influencing the spirit and actions of every individual. If it can take root and flourish in the hearts and hands of more people in the future, we may truly be able to rescue ourselves from the ecological crisis caused by the binary divisions of modernity.

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