Quayola
Second nature
by Lucia Longhi

"Painting embraces within itself all the forms of nature."
Leonardo Da Vinci

The design of a leaf or the branching of a tree are governed by mathematical functions describing their order and evolution. This sentence does not strike us as a novelty. However, precisely these functions give rise to the possibility of observing nature under a new perspective, disclosing new reflections on our relationship with reality as human beings.

Observation (and representation) of nature is at the basis of the primitive bond of man with his surroundings; a practice that goes hand in hand with the evolution of technology. In this context it is appropriate to bring up Leonardo da Vinci.
His approach to knowledge was visual: the pictorial exercise was indeed functional to his research. The virtuosity did not end as the celebration of artistic practice, but rather served to the understanding of the structures of the natural world. Drawing allowed him to read nature and discover its forms and processes. A vision of art as a method of scientific study.

The fifteenth century saw the great development of botanical studies also thanks to the spread of the herbaria, books in which detailed illustrations were accompanied by plant descriptions. The botanical gardens were the cradle of this practice. They have been the privileged witnesses of the progress of the scientific method and the botanical science, which then required art to define itself as a discipline. Therefore, visual representation always accompanied science in the understanding of the world.

Quayola's artistic practice originates from a fascination: how some patterns created by nature are reproducible by mathematical functions. The digital simulations used today to represent fire, wind, sea or forests are extrapolated from the mathematical expressions already embedded within these elements. For the artist, these functions are not a means, but rather the very subject of his artistic investigation. Thus, it fits into the context of the classical figurative legacy - especially en plein air painting - becoming part of the History of Art. Therefore, Quayola's work contains both historical heritage and contemporary practice aimed at understanding the future. The botanical garden also encompasses both the past and the research aimed at progress.

The nature represented by Quayola appears slightly different from the one we are familiar with: it combines natural and pictorial forms with codes belonging to the digital world, which also resonate with our sensibility. Furthermore, they generate an empathy that invites us to reflect and redefine the categories we generally use to read and classify reality: natural / artificial, anthropic / technological. They encourage us to renegotiate our role with respect to technology in the process observing reality.

Botanical morphogenetic research uses computers to analyse nature starting from the mathematical functions embodied in it. High-resolution photos and 3D scans are used for data collection, the most advanced software creates accurate simulations. These tools present a potential not only for technical purposes but also for the disclosure of new visual languages: the ones of the digital world. This is the starting point of Quayola's investigation, and so nature is no longer just a subject, but rather a pretext to test a new method of deciphering the world - just like the painters of the past, especially the Impressionists. The process becomes the real subject, allowing us to explore the evolutionary horizon that we humans are crossing.

Thus, a second nature opens up alongside nature. Second nature is the one that emerges from the observation made by technology. A nature with a new and different appearance. The logic of computers is no longer subjected to the human one. Artificial intelligences have autonomous systems of perception and coding - on the one hand they are very similar to human faculties, one the other, however, they reveal a very different logic. Technology found its place among the agencies capable of understanding nature and has thus introduced a new aesthetics, with which man is now called to align.

While contemplating Quayola's paintings, we realize this is not a representation of reality: what we see is the representation of simulations of nature created by a computer. A further level of reading is now required: the

understanding of the machine's visual codes. However the world 'representation' is not appropriate: it is an exercise of abstraction. It is the machine's way of understanding the world.

The Jardins d'Été video (45 min loop) and the related prints (Jardins d'Été, ink-jet prints) are digital simulations that remind us of impressionist paintings, in which, however, the brushstrokes are created by algorithms processed by a software. The reference matrix is a footage from the Chaumont-sur-Loire castle gardens (France). Therefore, the movements in the final simulation are extracted from the original movements of the plants. The source, however, almost loses importance as the machine proceeds autonomously to create pictorial patterns. Movements and colours are a reference only in the initial phase; afterwards, the machine performs an independent simulation.
The observation of nature is only a starting point, a pretext to investigate new cognitive logics.

Similarly, in the project Remains the forest is represented by data collected with a 3D scanner, which works with a high-resolution laser system that moves through the space. The data are then returned in the form of millions of white dots. If, on the one hand, the machine's reading system of the forests of the Vallée de Joux (Switzerland) is extremely accurate, on the other hand, it also shows imperfections, therefore lowering the resolution. Again, we can observe the computer behaviour when it comes to reading particular situations, for example a peculiar light refraction due to humidity. The large format is then necessary in order to make visible the laser characteristics when scanning the forest. In light of this, the big format also conveys an idea of the scale on which the computer operates. Both in Remains and Jardins d'Été the level of detail is very high, despite the fact that the image accuracy appears somehow reduced. Like in the impressionist technique, the reduction of visual information paradoxically discloses a greater expressive power. This is precisely what the complexity of the process represents.

For both instruments - the visual software and the 3d scan - this task requires time: long moments of observation of the machine's behaviour and of the returned information; selection of the data and new setting of the tools, then again the reading of the natural scene. This is how we obtain the images we see today. Long times: just like the painter who, from dawn to dusk, immersed himself in nature. We are witnessing a process of mutual understanding between man and machine.

In light of this, there is a further and crucial level of the observation process and, therefore, of critical reasoning: the artist's intervention on the actions of the machine, having previously understood and learned its visual system and its logic of interpretation. We are used to think about the machine learning process (how a machine learn to understand and improve by itself) but, in this respect, Quayola's process is inverse. It becomes a reverse machine learning, in which humans come to know how the machine works and collaborate with it during the encoding process of reality.

This is why we can speak of "second nature": a second nature to observe, different from the one that our human experience has accustomed us. However, the result is not only a new way of reading the natural landscapes and patterns, but also an observation on the human evolution. In fact, these works invite us to reflect on a cogent truth: computers were programmed to resemble human beings, but today many of their processes are no longer accessible to the human mind. We are now transforming our way of thinking and seeing, our systems of representation and aesthetics, to approach their faculties and standards. A mutual domestication.

Considering the above, the most relevant discourse activated by Quayola is the one concerning our relationship with technology. And then it is useful to evoke once again the term "second nature". In the context of the History of Thought, it refers to the status of the human being, which distinguishes itself from the "first nature" precisely because of its intellectual and cultural faculties. Quayola's art explores the new paradigms to be considered when talking about man and nature. The anthropic agency is no longer the only protagonist in the exploration of reality, and today technology has an autonomous identity.

The images we observe at the Botanical Garden are in fact a study on the positioning of the human being in his world and age, and the hierarchies between man, nature and technology. Today, the knowledge of the world is no longer on a human scale, and the art of Quayola is emblematic of this coexistence of our vision with the one of the machine. A contemporary expression of the collaboration between art and science. Again, a vision of art as a method of scientific study. The artist uses the digital pictorial exercise to understand a new nature, the one seen through the eyes of technology, and to understand the technology itself, which is – perhaps- a second nature in all respects.