

MIDJOURNEY EXPERIMENTATION: REPRESENTING NATURE ON A MACRO SCALE

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Abstract

The paper presents the premises for a research project on the subject of Human-Nature interaction, with a focus on the role that the discipline of representation can play as a tool for investigation, experimentation and as a vehicle for content aimed at increasing awareness. Through a path made of surreal, invisible and natural images, the basis for a reflection on the role of representations through AI will take shape, referring to the theme of Nature as a contemporary field of experimentation. The aim will be to construct representative artefacts inspired by Nature, using digital technologies and material manipulations, for the increase of an ecological awareness through an up-close and surreal point of view. The project in which this line of research is placed is "Designing with more-than-humans", funded by University of Campania "Luigi Vanvitelli".

Keywords

Midjourney, hybrid images, nature.

1. Introduction

The role of Artificial Intelligences in our society arises, with increasing frequency, as a complex issue, which involves different research fields, raising questions in every discipline. In particular, today we try to investigate the possible applications, which create new (and almost infinite) expressive possibilities.

In recent years, Artificial Intelligence has spread to various sectors also following the increase in open source platforms and applications that have reached many fields, including those concerning art and graphic representation. The operating system that more than any other lends itself to experimentation in the production of images is 'Midjourney'. As is now well known to many, 'Midjourney' is an online platform that allows you to create visual content starting from keywords and therefore works on the translation of a text into a representation, which ranges from drawing to photo-realistic simulation. The operation is based on a "text to image" artificial intelligence algorithm, that is capable of generating images based on textual instructions thus creating figurations with complementary colors, sharp details, artistic use of light and shadows and an excellent use of symmetry and of perspective. These are fundamental aspects in the disciplines

of representation, design and architecture, but with a completely new methodological approach and with which, at the moment, we can only proceed by successive experiments, trying to define a scientific and (in some way) repeatable method. The aspect that today appears richest in astounding results is the search for real images of abstract or surreal concepts, exploiting the creative process of the algorithm which is based on the hybridization of multiple images found on the web. Through the unifying tendencies of AI algorithms, the traditional collage (which we can define as a composition of elements that create a whole, but whose parts are recognizable) re-proposes itself in an advanced mode which, denying its fragmentary origins, leads to the creation of hybrid images. The concept of "hybrid hyper collage" is suggested by Cesare Battelli, one of the most cultured and active Italians who experiments with graphic elaborations made through the use of 'Midjourney', and who investigates and deepens the hybridization capacity of the digital application by tackling, for example, the representation of the animal world. In fact, drawing from the imagination of the ancient world, rich in mythological creatures halfway between man and animal, Cesare Battelli first experiments with the definition of the image of these creatures (such as sirens, unicorns and

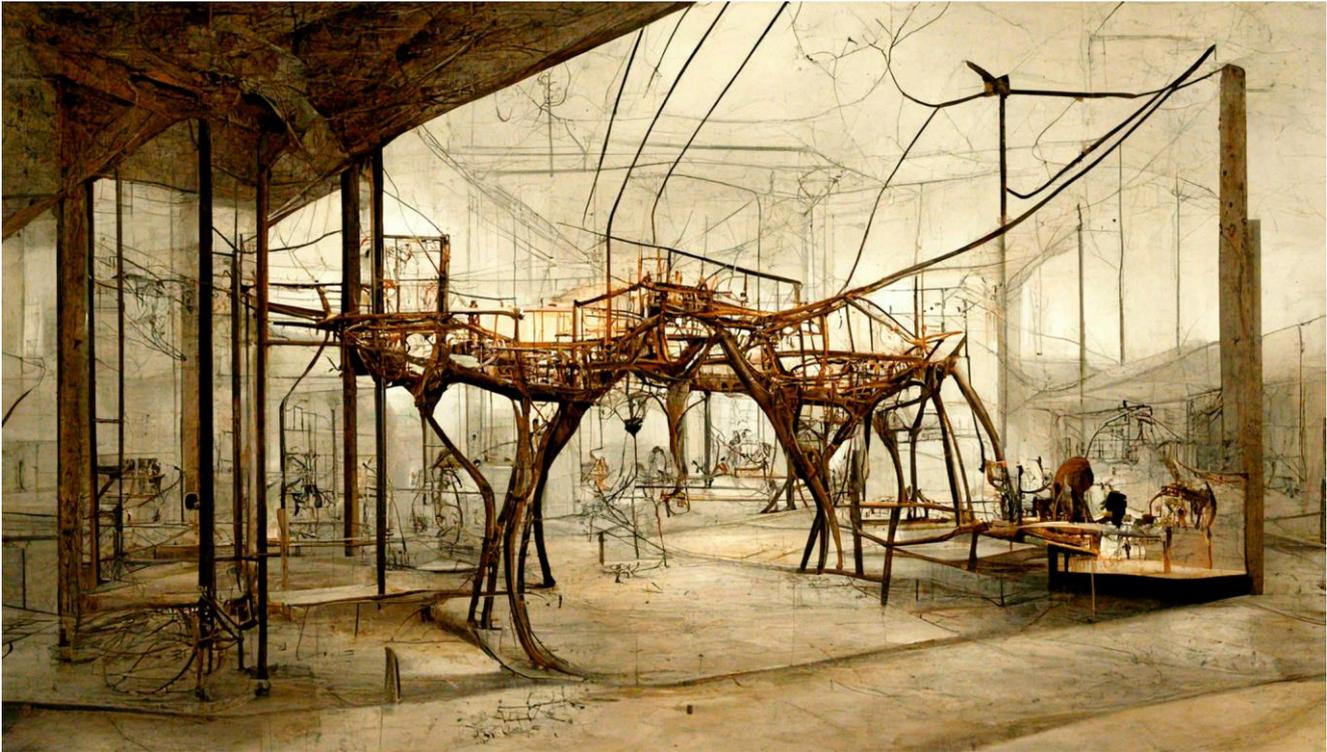


Fig. 1: Kangaroo Space by Cesare Battelli.

winged horses), to then attempt a more complex hybridization, between architecture and animals (fig. 1). Battelli's images focus attention on recognizable elements (both construction elements and furs) and on their peculiar properties, finally pursuing the goal of obtaining a new and "imaginative" form and representation (Betsky, 2022). It's not a simple hybridization of an animal or something biological with the architecture, but a fusion of the two, where both are visible, yet generate something completely unexpected. Spaces can therefore become evocative, without the intention of defining real places, but with the aim of assuming the appearance of distant things that at the same time become close, of urban visions that are also internal spaces, of architectures that are defined and indefinite at the same time (Battelli, 2022).

2. Surreal images

One of the main attractions, among the enormous potential of Midjourney, is that of making visible and giving shape to that sphere of the imagination that remains in the evocation of the imaginary. In March 2023, professors Edoardo Dotto and Fabio Quici held a seminar as part of the research doctorate in Architecture, Industrial Design and Cultural Heritage of the University of Campania "Luigi Vanvitelli". The

title of the seminar (having as its theme "AUTO/matic AUTO/nomous¹ AI in project design") was the "Exquisite corpse", referring to the collective surrealist game, created for the first time in 1925, in Paris, which consists in having several people compose a sentence (without anyone being able to know the intervention of the other) in the noun-adjective-verb-noun-adjective sequence. The same system was adapted to the drawing, by folding or covering the sheet in the already completed parts. The game is part of the surrealist automatism and the random association of elements (as for the collage), which starts from the words and translates into a system of images. From a game, the practice soon turned into a creative tool in the Surrealist community of the time, of which André Breton was one of the most active experimenters leading in 1924 to the definition of the Surrealism manifesto. After a short time, the artistic community transferred this practice of the "Exquisite Corpse" to the dimension that historically produced the most fascinating results, namely painting. According to the same scheme, a group of painters met, took a blank sheet of paper and decided to collectively draw a body: one

¹ In this case the term 'autonomous' (recalling an automatic/autonomous pun) means independent, thus referring to the algorithm's ability to create new images.

would draw the head, one the bust, another the legs and the last the feet.

The junction areas were fixed, the rest was left to complete freedom. Everybody was even free to draw things other than human parts or add new elements. The scheme was so loosely regulated that the possibilities were endless, which stimulated creativity (Affatigato, 2018).

Now as then, at the basis of the creative process there were metaphorical activities, of an associative nature that lead to the production of visual assemblages that generate hybrid images (fig. 2). The concept of hybridization is fundamental for the process of image production through AI, which creates a *unicum* from a set of

virtual elements that define spaces, shapes, creatures. Overturning the role of subjects in new contexts, which are relocated in a way that sometimes escapes our rational logic.

Added to this, the theme of the collective work recurs, already the subject of extensive discussion (also from an ethical point of view) which considers the products of AI algorithms, as the result of a shared work, by the author of the prompt, by the algorithm AI and, indirectly, by those who, by placing the images on the net, have made possible the almost unlimited resource on which the system draws. In this regard, the recent victory of the first prize by Jason M. Allen, in the Colorado State Fair Fine Arts Competition in the



Fig. 2: Surrealist hybrid composition between architecture and nature, by Alice Palmieri (with Midjourney, version 3).

category "digital art / digitally manipulated photography" has generated quite a few controversies from the other artists in the competition (Tanni, 2022). The question of the authorship of the work, entitled *Théâtre D'opéra Spatial* and generated through Midjourney, requires a reflection on the production of works of art, whose dimension shifts from the visual to the textual dimension. In fact, the writing of these texts (which in jargon are called "prompts") is rapidly transforming into a discipline in its own right, allowing a new figure to emerge: the prompter or prompt-artist. Many in the artistic community believe that the human contribution in these cases is too small and not comparable to the talent, ability and sensitivity of a completely (and exclusively) human production. Beyond the philosophical question, which involves the debate on the relationship between art and technology, the contemporary scenario has to deal with a controversial reality that sees some working categories (such as illustrators and cartoonists) seriously threatened by proposing dynamics comparable to those that the image industry has dealt with the invention of photography.

3. *Invisible images*

In the world of art, architecture and design, there are numerous conflicting reflections and opinions that offer different points of view with respect to the use of applications based on machine learning to produce images that can become an integral part of the project and/or of the creative process. One point that must remain firm is that these platforms are only tools, which cannot disregard critical human mediation in order to pursue cultural intentions or (as in this case) the raising of collective awareness.

A potential that appears very interesting is that linked to the production of images that try to reproduce a macroscopic dimension, therefore invisible to the naked eye, which can reveal details, textures, colors, unpublished visions and of great inspiration for various innovative variations. With this approach, the research "Designing with more-than-humans", funded by University of Campania "Vanvitelli" and coordinated by Chiara Scarpitti, intends to investigate the man-nature relationship, thus experimenting with possible graphic and aesthetic applications through digital and analogical experiences. The goal is to build artefacts representative of interactions with

nature, using photographic material, digital technologies and material manipulations, to increase a profound ecological awareness through an up-close (and maybe surreal) point of view. The broad theme of Nature is then filtered through a very close distance that aims to catalog, redesign and imagine natural elements (vegetables, minerals and animals) at a scale of representation that does not reduce, but "amplifies" the subjects emphasising, in a metaphorical manner, their greatness, not physical, but of value.



Fig. 3-4: Lichens macro view, by Alice Palmieri (with Midjourney, version 3).

The goal of awakening awareness is sought by reducing distances and by resting one's gaze on small details that do not aspire to be real, but are meant to exaggerate the beauty and complexity of natural elements.

At this point, it is necessary to define what is meant by the term "nature". According to the definition given by Alberto Sposito (architect and technology teacher) "Nature is the foundation of existence in its physical configuration and in its biological evolution, as a causative presupposition, operating principle or phenomenal reality. Nature is the set of all existing things considered in its overall form, in the totality, that is, of the phenomena and forces that manifest themselves in it; it is the set of characteristics of a region, little or not yet modified by civilization" (Sposito, 2017). The now increasingly urgent need, even in the political and academic fields, to reflect on issues that aim at ecological awareness, is placed within a well-defined scientific-cultural scenario.

First of all, the development of new scientific tools for analyzing and understanding nature has allowed for a change in the scientific paradigm, which took place thanks to nanosciences and nanotechnologies which have guided research into sustainable, environmentally friendly and safe biomaterials for consumers. Added to this is that by now the community has reached a stage of maturity in the debate on environmental sustainability which recognizes the need for a radical change in the current model of economic development and a drastic reduction in the consumption of environmental resources, aiming towards a circular economy to replace the current dominant linear model.

These conditions have defined, in both a practical and conceptual sense, new points of view (fig. 3-4), which approach the natural elements to deepen their knowledge and understand their functioning. A vision that has given ample space to the discipline of biomimicry, which looks closely, studies and imitates the biological and biomechanical processes of nature and living beings as a source of inspiration for the improvement of human activities and technologies.

4. Natural images

Returning to the consideration of Alberto Sposito, who highlights numerous and complex aspects of the natural environment, it is

important to highlight his conclusion which brings a universal theme back to a local character and therefore to the territory to which it belongs: "the characteristics of a region, little or not yet changed by civilization". Reflecting on this concept, the embryonic phase of the research envisaged the collection of photographic material in a rare place, almost completely devoid of anthropic traces, present in the Campania region: the "Cratere of Astroni" Nature Reserve. This nature reserve is a protected area that rises inside one of the craters of the Campi Flegrei, located between the municipalities of Pozzuoli and Naples. The Astroni crater was generated by several successive eruptions that occurred between 4,100 and 3,800 years ago and is perfectly preserved, with an area of 250 hectares. From an environmental point of view, the oasis constitutes a very precious reserve also because it houses, at the lowest altitude, three ponds with typical vegetation of the lake areas (such as reeds, rushes and willows).

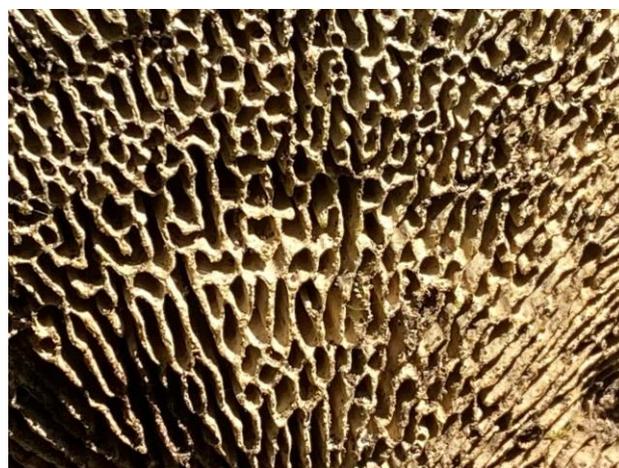


Fig. 5-6: "Cratere of Astroni" Nature Reserve: photographs of mushroom textures, by Alice Palmieri (2023).

The vegetation of the reserve is characterized by particular microclimate conditions which, by virtue of the phenomenon of thermal inversion, see the presence of typically Mediterranean species such as mastic and myrtle on the edge of the crater, while on the bottom, although we are a few meters from the sea, live species typical of higher altitudes, such as chestnut, oak and elm.

The remarkable environmental diversity present in the Nature Reserve has allowed the establishment of an equally varied animal community with about 130 species of birds and various species of amphibians and reptiles. It is therefore a special place, where the devastating effect of contemporary life has slowed down, allowing one to look and live in a now rare natural state, offering many elements for reflection on the subject of ecology.

The rich repertoire of photographic images collected *in situ* has as its object various plant and mineral elements identified in the reserve, but particularly interesting, having the intention of working on a graphic reworking of the textures, were the mushrooms (fig.5-6). The shapes and textures of these extraordinary organisms have proved to be a very powerful source of inspiration, custodian of a great visual potential that lends itself well to the design of future re-elaborations from which to extrapolate superimposable and repeatable matrices.

Therefore, the photos collected during the survey, will be the basis of the work on graphic experiments that aim to develop textures, inspired by natural elements, of which the matrix is extrapolated, which must then be reinterpreted in different chromatic declinations and finally transposed into video digital visualizations. Simultaneously, representation experiments through AI have begun and have generated amazing images inspired by plant and animal elements (fig. 7-8).

The great innovative possibility that Midjourney grants today in this context is that of obtaining images on the border between surreal, imaginary and microscopic, which tell a dimension and a point of view of the natural elements of which it is not possible to experience in any other way, however, touching on an empathetic and emotional dimension that is fundamental to pursuing the primary objective linked to raising awareness (fig. 9-10-11).

5. Conclusions

There is much debate on the use of these technologies (currently unregulated) which discusses their potential and risks. In fact, while the rich and fertile territory of experimentation for research is evident, with the ethical and cultural implications that this entails, it is equally clear that the risks that one might incur are no less so, both in terms of the aspects linked to authorship and the questions that call into question the capacity (even critical) of the person processing the prompt.

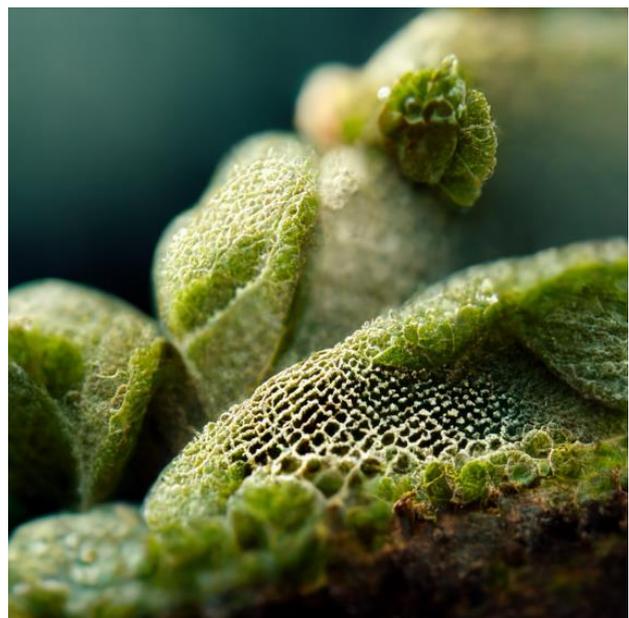


Fig. 7-8: Natural textures macro view, by Alice Palmieri (with Midjourney, version 3).

At present, therefore, the obvious limits of AI representations are accompanied by many expectations and curiosity to discover the future scenarios of these technologies, which are both exciting and full of unknowns at the same time. Evidently, the creative processes of art and digital design are rapidly transforming and forcing us to rethink and question them, asking ourselves, in the final analysis, what our role as interpreters and cultural content creators will be.

Finally, the theme of Nature lends itself as an ethical-cultural opportunity to construct narratives and imagery that tell the story of human-nature interactions between the digital and natural worlds, making use of Artificial Intelligence technologies in the field of visual image manipulation. At the same time, the objective of raising awareness defines the scope of action of digital representations that aim at an emotional relationship with the intended recipients of communication.

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Fig. 9: Surrealist view of plants that metaphorically represents the rebirth of nature, by Alice Palmieri (with Midjourney, version 3).



Fig. 10-11: Images generated by interrogating the AI on microscopic views of dragonfly wings, trying to obtain richly veined and semitransparent textures, by Alice Palmieri (with Midjourney, version 3).

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