Generative Art, the “Author’s AI”. Complexity, Naturalness and Recognizable Creativity

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Abstract

It is important to clarify what is meant by Generative Art, particularly when the term "generative" is being used extensively in reference to AI.

Generative Art is a unique project that can produce a range of results based on an idea. It's not just a technique, but rather a philosophy that can be implemented using various techniques. There are three key characteristics of Generative Art that define its quality: complexity, naturalness, and recognizable creativity.

Contrary to generative AI, chatbots, and so on, which try to solve objective problems, Generative Art can be identified as “Author’s AI” because works like Artificial Intelligence but the results belong to a subjective vision and to an unique and recognizable poetics.

COMPLEXITY

Through an organized meta-process, often structured as an AI process, Generative Art allows an idea to be made explicit in multiple outcomes that realize and identify it.

The quality of a generated event can be characterized by having passed the condition of simplification. The idea behind the event is not just a simplified gesture, or a form, but rather an impressive interpretation of a possible new existence. The idea is considered impressive / visionary, because it is capable of unpredictable evolutions towards complexity. Therefore, an idea is not just a simplified synthesis of a vision or a concept, but a hypothesis of a possible path towards complexity. Referring back to Poincarè, the idea, if it is creative, is based on identifying possible relationships between existing events. These relationships must be capable of developing a specific vision of the author. In Generative Art, the idea can interpret these relationships as a

topological paradigm that is responsive to our poetics and subjective worldview.

To clarify, creating a system that produces a series of results whose difference is caused only by a randomly varied formal event cannot be considered generative art. For instance, a series of constantly changing bottles whose profile is randomized is not a form of generative art but a simplification of the process.

Generative Art involves complexity and one of its key features is the inter-changeability of forms. This means that the idea is not related to the form itself but to the relationships between events and the process being used. The forms can be interchanged within formal matrices that align with the author's subjective vision. This feature is present in any design process, even traditional ones, in which different formal alternatives can be used depending on specific contingencies. This works without invalidating the vision or poetics of the author. The results perform a complex structure of possible outcomes that may appear very different, but are still recognizable as the artworks of the same author.

Generative Art is a meta-project management, which means progressively constructing a “project of the project” involving many of possible alternatives, also formal alternatives. This approach allows for the representation of complex ideas that may involve opposing features and overlapping purposes. The quality and complexity of a design and artistic creation can be identified by its ability to meet not only a variety of demands, but also unpredictable ones. This is because the appreciation of the results is subjective and varies depending on the users.

The alone process of analytical and deductive logic is not enough to create the complexity found in Generative Art. Subjectivity and interpretation are essential to the underlying idea of this art form.

Synesthesia is not strictly generative art also if it allows one to formalize their interpretation of the world by generating scenarios from evolving different structures. Although sometimes unconscious, it reveals one's subjectivity by conveying a vision through complex structures.

ARTIFICIAL NATURALNESS

Generative Art draws inspiration from the plural and fascinating world of Nature. We can observe topological patterns that are shared among different species, while also appreciating the unique identities of each species and even individual events.

Generative Art aims to replicate the natural structure of a species in the artificial world. The ultimate goal of this art form is to bring to life a species project, complete with unique features. These reflect the artist's subjective vision and poetic expression and are intrinsic to the project idea. The result is the creation of a set of unique, one-of-a-kind events, each with its own distinct identity that is strongly linked to the species' characteristics.

There is a rising trend to prioritize naturalness in industrial development.

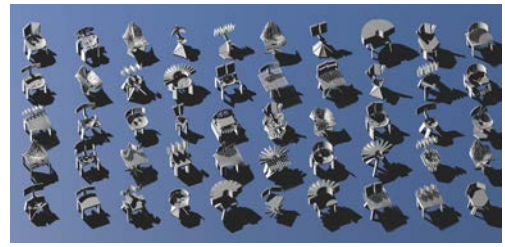
However, generative art represents a remarkable yet underappreciated turning point, as it hasn't been widely applied yet. Currently, all development efforts are

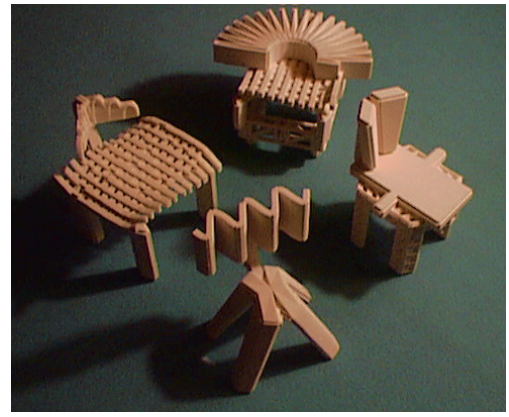
focused on the physical structure of production, prioritizing energy savings, carbon dioxide emission, and material recycling. Unfortunately, these efforts don't consider what generative art can offer: product uniqueness, just like in nature, which favours slow obsolescence. The products generated by generative production do not need to be replaced by the latest version, since each product is "naturally" unique, just like trees and works of art. For the past forty years, I have been following a generative art approach that has developed a "New Naturalness" through Artificial Intelligence programs like ARGENIA.

This is one aspect of the possible new path to digital industrial evolution, and it is an outcome of the possible generative application of Artificial Intelligence that should overcome the bottleneck of results seen only as an optimized solution to a problem to enter the world of the infinite parallel possibilities of "how".

Nature teaches us that all individuals of the same species are different, yet equally functional. The peculiarities and uniqueness of each individual can lead to unexpected developments, similar to what happens in nature. Instead of designing just single events, the focus should be on designing "species," which can help generate not only uniqueness but also open up new potentials for building the future.

Through the skillful use of AI, it is possible to design "Artificial Species," as I did with ARGENIA, emulating Nature.





1992. Species of Chairs. The uniqueness of generated individuals using my Argenia, a Generative "Author's AI" software.

Four 3D prints presented at my solo exhibition at Hong Kong Visual Art Museum, 2001.

Two Francis Bacon paintings with a visionary animal generated by my interpretation of his artworks

Human species and animal species interpreting Francis Bacon's images.

AI AND CREATIVITY

Artificial intelligence is rapidly evolving with the emergence of chatbots such as Bart, Bing, and ChatGPT, which are referred to as generative AI. The world of AI is moving towards becoming the main player in the generative approach, specifically generative art. Unfortunately, or fortunately, this is not exactly in this way. The generative structure of these new tools, even those that specialize in image generation, are primarily linear compiled. In other words, they use databases extracted from the Internet and then modify them using the ability to communicate correctly and fluently, even across multiple languages. This ability to generate accurate language comes from the advanced techniques used in handling translations. The question we must consider, as researchers and artists, is whether these tools can genuinely aid research paths and assist creative paths.

For research, they can certainly, in the future, be very useful, but not now. Today's large memory capacity does not

go beyond the repetition of what is part of "one-track thinking". This usual way of approaching different topics is thus not suitable for developing advanced research topics. If one likes to go further, one has to ask very specific questions to which the chat answers in a very general way and with serious errors. But this will certainly be overcome shortly.

These choices are made according to the cultural moment and the learning algorithms used, denying the possibility of using AI to assist creative pathways encounters structural difficulties that are difficult to eliminate.

What is creativity? The concept of creativity could be defined as the ability to produce a topological paradigm that can reorganize existing events according to a structured vision that satisfies the author.

The French mathematician, Poincaré, proposlongsed a similar view. Contrary, to simply reorganizing existing events, as suggested by Arnold Schoenberg, one can put colours glass balls in a vessel and shake it. However, if this operation aims to be creative and artistic, it requires the sensitivity, subjectivity, and unique vision of the author to finalize his idea and poetic. In other words, it is essential to create a structure that belongs to one's subjective interpretation satisfying the artistic vision.

Developing the uniqueness of one's vision is based on the Renaissance when perspective was invented. This brought back to the subject the key to understanding space - the point of view. Piero della Francesca played a significant role during this epochal turning point based on perspective. In front of space, the subjective approach is made explicit in finding the point of view against which everything is reorganized by defining a system of relations between the parts that tell our peculiar vision. Brunelleschi chose to stand on the steps of Florence Cathedral to observe the Baptistery. From that point of view, Brunelleschi identified how the relationships between the parts and the relationship between the various perceivable measures were made explicit. Paolo Alberto Rossi investigated Brunelleschi's approach and defined the key to interpreting the very structure of architecture. The choice of a point of view puts in order all the events of a system following the subjective structure of vision.

It is necessary to move beyond choices only based on what works, which can be easily defined by algorithms, and instead, make choices that operate a subsequent selection, what we like, and what corresponds to our idea. According to that structure, we can design the database to be used by an AI system.

It is important to shift our focus from just "problem solving" to using an interpretive logic that takes into account our individual unicity and subjective vision. This means moving beyond decisions made solely based on objective data and instead, narrowing down choices that align with our personal vision and creativity. Furthermore, we should use algorithms that define the possible progressions of chosen events, that correspond to our vision. In this way, we can ensure that the outcomes are truly in tune with our personal goals and aspirations. In this way, we can construct our "Author's AI".

Operating a complex database collection requires singularity and customization of

the algorithmic structure. However, this has not yet been widely used, favoring a linear and analytical approach and prioritizing technology. Currently, the data collection process favors quantity over quality, resulting in generic and obvious data. The chat answers to our questions biasing towards commonly accepted answers, and anything that deviates from the norm is excluded. But we need to know parallel possible answers. If one tries to explore non-conventional approaches, the answers are still generic and do not focus on the diversity and uniqueness of possible approaches.

RECOGNIZABILITY of Outputs

Of course, the subjective and interpretive approach is not alternative but parallel to the usual approach based on the objectivity (true or assumed) of data. This approach is based on the vision, the poetics of an author, and can be called "Author's AI" and is recognizable by the strong identifiability of the results which, in their variety represent and tell the identity of an author's vision.

This approach has been the basis of my research and experimentation and has been realized with the ARGENIA project. In addition to this, multiple experiments have been presented by the participants in the quarter-century of the Generative Art conference. These experiments often, although born from subjective visions, do not explicitly refer to the interpretive approach in the construction of algorithms. So they lose the possibility of explaining the logic that allows the construction of complexity and their scientificity. This is unfortunately due to the difficulties, which persist still today, of accepting their interpretive logic in a scientific process.

Only a process based on deductive linear systems, on technology alone, is still favored, and commonly believed to be scientific, though conflicting theories, such as, for example, quantum theory and general relativity, have been accepted as scientific and helpful for more than a century. These theories arose as interpretations based on different points of view. Many still consider as the only acceptable theory to identify Generative Art as a mere technique, relying on the technical simplification of the computer science approach.

CONCLUSION

Unfortunately, it appears obvious that some people use chatbots to write their papers as happened in some papers that were presented at this conference too. These are a mixture of excessive citations following single-minded thinking and an infuriating triviality about scientific hypotheses and their developmental possibilities.

The hope is that this Generative Art conference can lead the way and direct the evolution of AI toward accessing complexity. Precisely we work for an approach based on different, and subjective points of view performing a poetic vision. This is already happening but is kept under-veiled.

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