

When A.I. makes it, is it still Art?
Piero Scaruffi (2018)
www.scaruffi.com



1. What is authorship: when a machine does something, who/what do we credit as the author? Who is the creator?

This question is important because I feel that it indirectly (very indirectly) answers the top question.

The Cybernetic Serendipity exhibition that ran in London from August to October 1968 featured computer-generated images (including one by Norbert Wiener), a live drawing computer, several computer-generated poems, Peter Zinovieff's music computer that could improvise a song based on a melody whistled by the user, and interactive robots such as Bruce Lacey's Rosa Bosom (1965), that, incidentally, had been his "best man" at his wedding. Since then, machines have produced visual images and sounds and texts that compare favorably with human paintings, music and poetry.

The lay public has frequently trouble understanding why a museum is exhibiting an apparently worthless artwork whereas the same lay public may immediately appreciate some of the so-called "inceptionist" paintings produced by today's "deep" neural networks. In other words, the lay public is more likely to consider "art" some machine art than many of the art pieces exhibited in museums. Therefore one could conclude that the machine has made art.

A favorite line of defense by the skeptics is to argue that the author of that machine art is not the machine but the human engineer who programmed it. No matter how complex the program is (and deep neural networks can be very complex), at the origin there is a human engineer who designed it. The machine's software (no matter how complex and how exotic its name) is merely a tool in the hands of the human being.

But let's take Leopardi's poem "Canto Notturmo di un Pastore Errante dell'Asia"

*"Che fai tu, luna, in ciel? dimmi, che fai,
Silenziosa luna?
Sorgi la sera, e vai,
Contemplando i deserti; indi ti posi.
Ancor non sei tu paga
Di riandare i sempiterni calli?"*

Leopardi stares at the Moon and is inspired to write his masterpiece.

Who is the creator/author of this poem? Leopardi or the Moon?

Some day physicists and neurologists may be able to map precisely how the pixels of the retina elicited some emotions in the amygdale that elicited a maze of neural connections in the neocortex that elicited an urge by the thalamus to direct Leopardi's hand to write those words.

In this view, Leopardi was merely a software tool for the Moon to write a poem to itself.

Isn't it a double-standard to think of Leopardi as the creator the poem inspired by the Moon when we refuse to think of the machine as the real creator of its outputs?

The skeptics will point out that what Leopardi makes of the Moon is unpredictable, but the fans of A.I. will point out that A.I. systems have become so "deep" (multi-layered architectures) that the engineer cannot understand why they output what they output.

The concepts of authorship, originality, identity, purpose etc had already been sabotaged by the avant-garde (happening, interactive art, action painting, performance art, etc). Machine art is, in a sense, an effect, a consequence of this process of demystification of art.

2. What is art: how do we decide what is art? and then does machine art qualify as art?

Why is Marcel Duchamp's "Fountain" (1917) considered art? It's just a urinal. Why is Kazimir Malevich's "White on White" (1918) considered art? Man Ray's "The Enigma of Isidore Ducasse" (1920) is a sewing machine wrapped in an army blanket. Joseph Albers' "The City" (1928) is just a mosaic of colorful rectangles. Jackson Pollock's "Blue Poles" (1952) is just a jumble of sloppy random paint strokes. Surely, Yves Klein's "Anthropometries of the Blue Period" (1960), Shigeko Kubota's "Vagina Painting" (1965), and Marina Abramovic' "Imponderabilia" (1977) are not to be taken seriously? and Lynda Benglis' Artforum advertisement (1974) feels like a high-school prank.

Who decided that these are works of art? Who decides whether this piece of paper is a piece of art or not?

Again, a populist may insinuate that art is simply what the people in power decide is art. The Pope decided what qualified as art during the Renaissance, and that's why it's hard to find any Renaissance painting or sculpture that is not religious in nature. Then

the prices decided what art is: if you don't have a buyer, your art won't survive. Then the museum directors decided what qualifies as art. Then the art galleries decided what can be sold as art. The art critics decide what can be discussed as art.

Can anything be art? Can an art critic unilaterally declare that this piece of paper is a work of art?

Is there any human-made artifact that cannot possibly qualify as art? Why some of them do and others don't? The history of Artificial Intelligence begins with William Grey Walter's robots Elmer and Elsie (1949), machines that moved and seem to be "going home", and continues with Donald Michie's MENACE (1960), a "machine" that learned to play tic-tac-toe, a machine made of 300 matchboxes filled with colored beads. These were scientific experiments but, a few decades later, they look and feel just as aesthetically intriguing as some of the interactive kinetic installations presented at the Venice Biennale.

And is art uniquely human? If aesthetic pleasure has anything to say in judging art, then some of the most beautiful "works" in the world are not made by humans. There are countless lakes, waterfalls, canyons, deserts, and so that are as awe-inspiring as Michelangelo's Sistine Chapel and Giotto's Cappella degli Scrovegni, if not more. There are also wonders made by living beings that are not human: bird nests, spider webs and so on. The whole universe looks like a beautiful artwork when you look at it through a telescope. Images of cosmic nebulae are among the most popular for computer wallpaper.

Our skeptic may again intervene and point out that there is a difference between natural beauty and constructed beauty, and art is, by definition, constructed beauty. But is any constructed beauty not natural? Whether made by Michelangelo or by a bird, or by geological erosion, or by volcanic eruptions, beauty is the result of billions of years of natural processes that sometimes yield a lake, which in turn creates mirror images of the mountains and waterfalls, and sometimes yield Michelangelo's brain and hands, which in turn create the David. Viewed from outer space, without any bias towards the human race, an immortal alien observer would simply notice structures arising over the course of billions of years, some of them in the form of large containers of water and some of them in the form of little creatures transporting and sculpting marble.

My personal (somewhat cynical) take is that anything can be art, and anything "is" (to some extent) art.

Art is indeed handpicked by classes that have the power to decide what goes into museums and what goes into art books. One could write an infinite number of histories of art, but we are limited by the art that survived, and the art that survived is the one chosen by popes, princes, museum directors, art critics and art sellers.

3. What is the meaning/purpose of this thing called art? and then does machine art fulfill that goal?

Nonetheless, there is a logic in the way a history of art is written. The art that has survived (i.e. that was selected) reflects the history of the human race. For better and for worse, each art piece speaks about the age in which it was made, the ages that preceded it and the ages that would come after it. It speaks about themes and

narratives that had meaning during its time. It relates, innovates, contrasts, and sometimes plagiarizes other art pieces. It is a node in a vast network of meanings.

To understand why something is reputed beautiful by someone you have to understand a whole system, its history, its values, its processes. Aesthetic experience cannot be reduced to a simple "Like".

Art is always a dialog between the artist and society, even when the artist doesn't want to have any dialog. And, when the artist does want to have a dialog (e.g. the art piece is meant to support a political view), the real dialog is often very different from what the artist aimed for. The real message of an artwork, as perceived/received by distant spectators and by future generations, is usually different from the artist's intention

Michelangelo's David was commissioned by the Church for a cathedral. It was instead placed in a public square (1504). Today the statue is at the Galleria dell'Accademia. It has been displayed in the cathedral only once for one day (12 November 2010) and that was actually a replica. And today a replica stands in the public square. The artistic value of the David depends on where it is. When it was placed in the public square, it acquired a completely different (political) meaning from the original one (religious), and almost antithetic. The replica has the exact same function of the original. In fact, a simple description like these few lines is often enough to match the value/meaning of the original. In fact, it is the description (the "history") that confers the real value/meaning to the statue. Whether it's a replica or an original, or whether it has been destroyed, is less relevant than its story.

What is art? What goes into a museum? The David? The marble? Michelangelo? The essays written about the David? In my view, the David itself is merely the decoration for the slide presentation on the importance of the David. If you see the David without knowing the context/background, you will miss most of the experience. If you know the context/background and you only see a tiny picture of the David, and never see the original, you will still get most of the experience.

Claude Monet painted "Nimpheas/ Water Lilies" as the culmination of his project to immerse the observer into the landscape. He originally planned the series of paintings as a circular panorama in the natural setting of a garden rotunda but were first exhibited in 1927 inside an orangery and are now on view (institutionalized) at "the" Orangerie. What you see today is "not" what he painted back then. But what you read today about this artwork "is" what he painted back then.

Leonardo's "Last Supper", on the other hand, has always been and still is where it was originally planned to be. But you don't see what Leonardo painted because neglect, vandalism and, last but not least, restorations, have altered it. Nonetheless, the power of the painting has survived: that power lies not only in the images but also in the stories that explain the painting.

Art is about stories, not objects.

And its function is precisely to tell a story, the story of the human race through the ages. Far from being merely a chronicler, art is an interpreter, eviscerating subtle truths of human society in a way that, at the same time, also predicts and previews the future. "Art at its most significant is a Distant Early Warning System that can always be relied

on to tell the old culture what is beginning to happen to it" (Marshall McLuhan, "Understanding Media", 1964).

Theodor Adorno wrote that "distance is the primary condition for getting close to the content of a work" ("Aesthetic Theory", 1973). I take it to mean that you have to move away from the artwork and into the surrounding context in order to truly appreciate its meaning. Paraphrasing Umberto Eco's "Open Artwork" (1962), the meaning of an artwork is the sum of all possible interpretations by all readers; and the same reader will read a certain work differently every time. Artworks are fields of meaning.

Marc Lebot, founder of the Center of Research in Contemporary Art at the Sorbonne, titled an essay "Art communicates nothing to noone" (1986). He was correct in that the intended artwork is just an object. It is an exaggeration to say that it communicates nothing to noone (it communicates something at least to its creator), but it is generally true that the object itself does not communicate. What truly "communicates" is the meaning that society assigns to it.

Therefore, we reach the conclusion that the real "creator" is not the artist but the community of (contemporary as well as future) art historians (of "readers") who make sense of the creation in the larger context of human history.

At the same time, we reach the parallel conclusion that creating art is not difficult: making sense of it is difficult. Art is everywhere. It can be created by so-called natural elements, by animals or by humans. But only humans appreciate it.

And who appreciates machine art? Humans. We humans are having a discussion about whether machine art should belong to the history of art. Should it? Ask the historian. Most likely, yes: it is part of the story. Does it really matter who did it? To some extent, sure: who, why, how, when and where help make sense of it. But ultimately it was made by an entire civilization, and it speaks about that civilization to that civilization and to all future civilizations. There is a much bigger discussion than the discussion of whether the author is the machine or the engineer, Leopardi or the Moon.

Therefore it is not shocking to admit that machines can produce artworks. But can they critique it? That would be the real feat, the real Turing Test. Can a machine critique its own work of art? Or the work of art of another machine? Or the work of art of a human artist? Can it write a history of art through the centuries?

The Italian futurists of a century ago were enthusiastic about merging humans and machines. That is precisely what has happened over the last century. The fans of A.I. are post-futurists who are enthusiastic about machines outperforming humans in every field. But it is still humans who appreciate, critique and select art. Willingly or not, we are rapidly venturing into the post-futurist world in which machines outperform humans at every old human skill... except appreciating and criticizing art.

Machine art sheds new light on the nature and purpose of art.

To start with, machine art removes the process of physical/bodily creation: the artist doesn't need to know how to handle a paintbrush or a scalpel. Machine art does to the artist what the robot did to the factory worker. The factory worker is an "operator", no longer a creator. The factory worker does not create the product anymore: the factory worker operates machines that build the product.

During the second industrial revolution, the assembly line parceled the process of creation among a loosely-knit community of workers, and alienated each worker from the process of collective creation and from the final creation. Nothing like the second industrial revolution happened in art. But now that art can be generated by machines the artist is in a situation similar to the situation of the worker in a robotic factory.

The product of machine art is no longer the product of hard labor but instead an instantaneous generation by means of software. Machine art breaks the fusion/synthesis of object and emotion that, for centuries, has been the foundation of art.

On the other hand, machine art enables in the arts the industrial paradigm of rapid prototyping. It enables rapid prototyping of the very creative step of inspiration. It used to be costly to restart a painting or a sculpture from scratch, but machine art can do it in a fraction of a second. Finding the inspiration is no longer a process of painstaking revision/adaptation. The rapid prototyping of inspiration allows trial and error on an unprecedented scale.

Not much changes for the experience of the observer, who is still confronted with the sealed, cryptic, silent product of the creator (and, coupled with 3D-printing, the result of machine art could be a conventional painting with brush strokes or a conventional statue of polished marble). But a lot changes in the experience of the creator, who becomes a completely different kind of “maker”.

For an artist, employing a machine to generate art is like having an army of apprentices in the workshop to unleash on a multitude of different ideas at the same time. A machine that makes art is the equivalent of an artist’s workshop with scores of apprentices implementing the artist’s ideas. The artist can then select the favorite results. The artwork that the artist chooses is still Art that reflects society. And the post-industrial process that the artist has used to create that Art reflects the post-industrial society in which the artists live and to which the artist participates.

Machine art, in this sense, creates a gap between creator and artwork. The artwork is an “adopted” child, not a biological child. At the same time, machine art reduces the gap between observer and artwork because the artwork is a file, not a totemic object to be sold in galleries and locked in museums.

There is still a difference between the artist and the spectators. There is still a mass that is a mere mute spectator, but what makes you “mass” is ignorance of computers, of software, of A.I., nor ignorance of the manual skills required to paint on a canvas with a brush or to use a chisel required to sculpt marble or bronze.

Of course, this has always been the case whenever a new art form emerged: photography required different skills; cinema required different skills. Machine art requires different skills. You are limited to the role of spectator if you don’t master them.

During the early formative years of a new form of art, the creators simply try to use it according to an old established paradigm: photography as an extension of painting, cinema as an extension of theater. It takes a while for a new medium to become an original form of art. Cinema reaches maturity when Rudolf Arnheim writes “Film as Art” (1932), Erwin Panofsky writes “Style and Medium in the Motion Pictures” (1934) and Walter Benjamin closes “The Work of Art in the Age of Mechanical Reproduction” (1936) with a tribute to cinema’s “shock effect”. Andrey Tarkovsky wrote “A film is an

emotional reality, and that is how the audience receives it – as a second reality" ("Sculpting in Time", 1986). Machine art is a third reality.

In the case of machine art, the obvious realization that machine art can produce a lot of artworks very quickly will lead to a new form of art. One can imagine a virtual museum stuffed with thousands of paintings in a new imaginary style that the spectator can view on a monitor and alter according to the style-selection app designed by the creator.

4. What is an artwork?

In fact, the real question is not who the creator is and what art is, but what is an artwork? We are so conditioned by the traditional museum that we instinctively think of the resulting image as the work of art. We argue who can be credited as the creator of the painting spit out by the neural network, and whether this painting can be considered "art", but that could be equivalent to discussing whether the creator of Leonardo's "Last Supper" is the craftsman who built his paintbrush, and whether a brush stroke can be considered "art"; when in fact the natural way to view Leonardo's "Last Supper" is that Leonardo is the creator and the whole painting is the artwork. We strive to identify the software program with Leonardo and the output with the "Last Supper", but this identification risks missing the point. The point is precisely that the 20th century introduced alternative notions of art, different genres, not just painting and sculpture: kinetic art, performance art, conceptual art, and even readymades. The "natural" way to appreciate the aesthetic value of an object is no longer what it used to be, and sometimes the art that we are observing is not even an object. Viewed by an Italian futurist or a dadaist of a century ago, the whole machine could be the work of art, a kind of futuristic sculpture, a kind of kinetic artwork that spits out a painting. One of the fundamental moments in the history of art came in 1913 when Marcel Duchamp had the inspiration for a new way to look at objects. Quote: "In 1913 I had the happy idea to fasten a bicycle wheel to a kitchen stool and watch it turn". Almost exactly one century later, someone in an A.I. lab had the same idea: let's run a neural network backwards and see what it does. Perhaps this is what Bruno Munari meant when he wrote: "The machine must become a work of art" ("Manifesto del Macchinismo", 1938).

Or, from a perspective that we could call the "Cybernetic Serendipity" aesthetic mode, the software code of the neural network could be the work of art, just like so much computer art (when he designed the screen saver "Every Image" in 2000, Alex Galloway, a Rhizome co-conspirator, claimed that the artwork was not the digital collage of images produced by his algorithm but the algorithm itself); and, from yet another perspective (the "Art & Language" perspective), the fact that its output is meant to mimic human art could be viewed as a kind of conceptual art; and the process of coding the network and of running it from the cloud and of exhibiting the output could be the work of art, a kind of performance art and even a happening (the "Gutai" perspective). And note that anyone can produce neural art by following the procedure to train the neural network: from this point of view (the "Fluxus" perspective), the conceptual artwork is the equivalent of a book of instructions for the "spectator" to create art, something akin to Yoko Ono's "Grapefruit Book" (1964). And what about us, who watch the neural

networks output images and then discuss their artistic value, aren't we spectators who become actors, just like in an Allan Kaprov-ian happening?

One can imagine a taxonomy of perspectives, each a valid framing of the identity of the artwork, corresponding to a scale of human experience, from barely noticing simple mundane object to carefully observing elaborately artificial events. And then the same printout can be viewed as many different forms of art: a readymade, a painting, part of a kinetic sculpture, the component of a performance, the element of a conceptual piece, and so on.

This hermeneutic ambiguity can apply to just about any event. It all depends if society finds valuable meaning in the event. There's a photograph by Julian Wasser of the 76-year-old Marcel Duchamp playing chess with a 20-year-old naked woman, Eve Babitz (in Pasadena in 1963). Is the photograph a work of visual art by Julian Wasser? Is the unorthodox chess game a work of conceptual art by Duchamp? Or is it a work of body art by Eve Babitz? Or is it a theatrical work by curator Walter Hopps, the brain behind the event? Or is it just no more than two eccentric individuals killing time in a hot afternoon? Ditto for Man Ray's photograph "Marcel Duchamp as Rose Sélavy" (1920): which one is the artwork, the photography or the concept, and who is the author, Man Ray or Marcel Duchamp? and, as i mentioned, William Grey Walter's robots Elmer and Elsie (1949) and Donald Michie's MENACE (1960) straddle the border between scientific experiment, kinetic sculpture, performance art and conceptual art.

Finally, there is the extreme gedankenexperiment of Maurizio Bolognini's "Sealed Computers" (1992): a floor of interconnected computers that run ad infinitum, generating images nonstop but showing them only to other computers, while human spectators only see computers and cables and hear the humming but will never see the images that computers are generating. Is it art when no human being can see it? Bolognini's piece is certainly an art piece, a piece of conceptual art. The computers themselves could be sculptures. But what about the images that they are generating and no human being will ever see?

Perhaps machine art represents the historical moment when we have to face, accept and contemplate the ontological ambiguity that has always accompanied the history of artworks.

Jack Burnham, in the final pages of his book "Beyond Modern Sculpture" (1968), wrote: "It is only a step from here to suppose that in time an aesthetics of artificial intelligence will evolve... a series of art forms that manifest true intelligence, but perhaps more meaningfully, with a capacity for reciprocal relationships with human beings".

Conclusion: the engineer who programmed the software is as much the creator of the artwork as the photographer who uses a camera to take a photograph. Just like photography made the skills of draftsmen and portraitists obsolete, so machine art will make the skills of stylists obsolete. Machine art is to artistic style what camera was to artistic content. The camera started a new art (in fact, two, the second one being cinema). Machine art is starting a new art that doesn't have name and probably doesn't have a single art piece yet because artists still have to figure out how to use a machine

that produces artistic styles at will and critics still have to figure out how to treat machine artworks.

P.S.

Beauty in science is usually this: solving a complex problem in a simple way.

From my perspective, an art object is very similar to a scientific theory: beauty in art is a similar solution to a complex problem, the problem of representing a stage/state of human civilization. It is not about sensory aesthetics but about representing human civilization, and yes, sometimes a urinal or a jumble of random brushstrokes does precisely that.

piero scaruffi, June 2018