



Rizière
Lichen Li, gravure.



Bambous
Anonyme, encre de Chine sur papier.

CAN WE FINALLY AGREE ON THE 8TH ART?

A TECHNOLOGICAL APPROACH

Par
Salim Perchy

If you're not an artist, why is it so important to define the next realization in art? Will it help alleviate some of our current social problems? Most probably it will not and perhaps if there is no artistic interest it should not matter anyway. However, as mankind has sent a lander to the 67P comet in the hopes of answering matters much further away from earth, the question now seems relevant enough.

Some people may differ, and in fact point out to the deep-rooted role art plays in our society. In reality, they might be correct if we refer ourselves to a definition of art such as the one provided by the Encyclopedia Britannica⁽¹⁾:

« Modes of expression that use skill or imagination in the creation of aesthetic objects, environments, or experiences that can be shared with others. »

There are several definitions of art, some even contradicting. Yet the above definition supposes an inherent social goal for art, linked to the possibility of others partaking in such expression. This directly validates the question of the 8th art, underlining what it could be and how it can be of importance to mankind. Consequently, equipped with the savvy of an artist and with the cunning of an engineer, we shall try to unveil what this 8th art is, and explain its raison d'être in the process.

The reader is warned that this is not a typical art criticism article, and, matters pertaining to the appreciation of art will be kept to a minimum. Furthermore, another warning that may scare the



The primary definition of art⁽⁷⁾

professional artist from reading this article: we will try to define the 8th art using a technological view-point and not an artistic one. All these decisions will be explained and justified, otherwise all this chalk-talk would be moot and populist.

To slake the thirst of the curious reader, we now reveal what are, in fact, our prime candidates:

Video Games.

Hence, if you are not simply browsing through this publication, then please carry on.

The Fine Arts - Human expressivity without energy

Due to a journalistic behaviour that is ubiquitous in present-day media, we often hear how 'cinema' is regarded as the 7th art. This is in pursuance of keeping the language fluid and not monotonous. However, we seldom wonder what the other six arts are. To better understand how

mankind arrived at the 7th art, it is best to recount them all. Preferably, it is best if we cover them chronologically and resuming what triggered them.

These six arts are nowadays formally called the fine arts, which are commonly preserved and taught in conservatoires. Throughout time they have not always been referred to as fine arts, they have changed in number and were not considered as the fine arts, but the liberal arts. Turing Award winning computer scientist Donald Knuth wrote a fine (no pun intended) lecture, with this subject being addressed in its introduction⁽⁵⁾ and it's a good starting point for this debate. The six arts are as follows:

Painting

We now know from a plethora of historical records that cave paintings constitute the first instance of artistic expression done by mankind. Even though the primary objective of these paintings remains debatable, one can observe and appreciate this evidence as the start of human expression recorded by humans themselves for posterity. Now, painting is the de facto reference when one speaks about arts in general.

Sculpture

Prehistoric tools used for human activities were shaped with usefulness in mind. Nevertheless this paved the way to express creativity with tangible tridimensional objects, with the aim

of imitation, deformation or for other religious references.

Literature

Literary art is divided into several groups, and it has been undoubtedly important to human expressivity, especially individual expression. Poetry, essays and novels all form part of this genre. What is special about this art is that it was triggered by a social event, the invention of the spoken languages. Keep in mind that even if written language was not immediately defined and formalized, legends and myths were in fact invented and later on recorded in words through a vocal lore. Myths and legends are indeed mostly composed of human expression on social and natural phenomena.

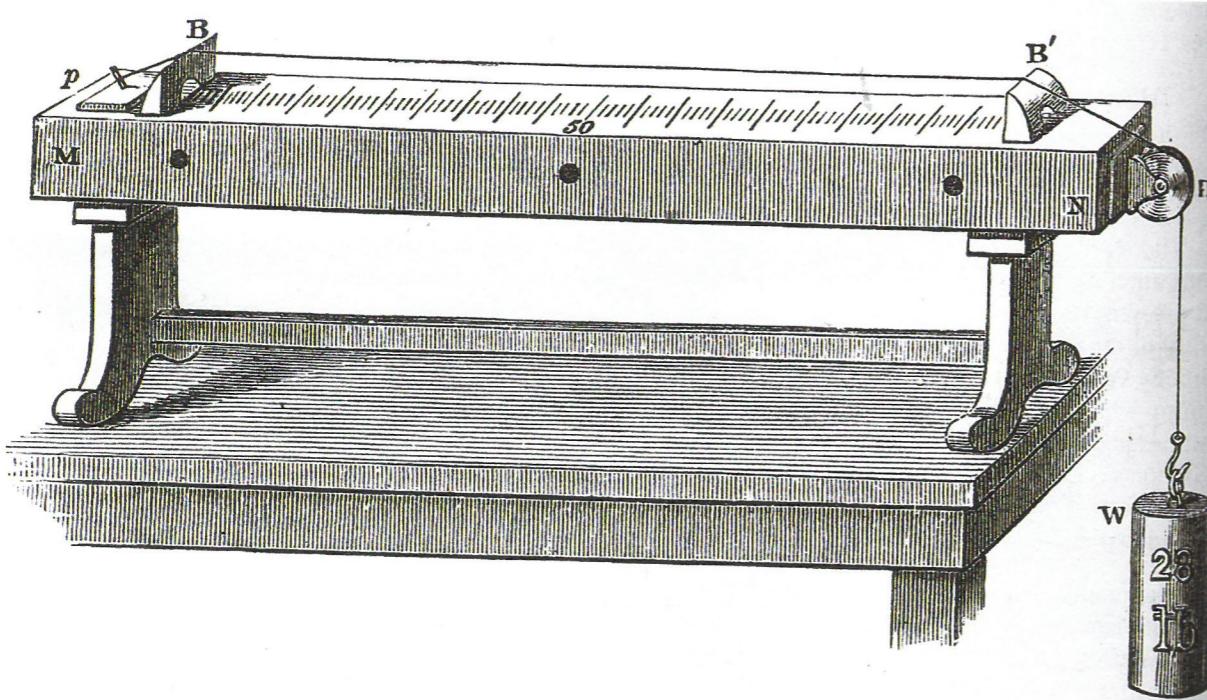
Theatre

Another way to recount a story is not necessarily through written words, rather via the means of theatre, along with all its necessities like sets, clothing and so on. It is closely related to literature but adds another layer of expressivity much more direct with a closeness to the audience.

Music and dance

What painting is to the eyes, music is to the ears. It bears special mention that music has existed way before the Greeks. However, it was not until the appropriate concepts of acoustics and geometry of sounds were developed by

The Monochord
Acoustics, physics, geometry, all united to evolve art⁽³⁾.



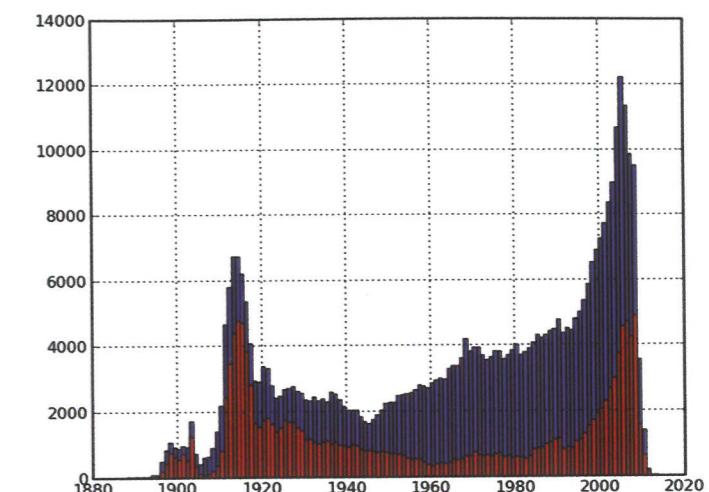
Pythagoras that music could be formalized and encoded in some way, so as to permit its preservation and evolution. This then, marks an occasion where science had a significant role in the evolution of a particular art. This last assertion is of importance when isolating the factors that widen the expressivity of a particular form of art. Dance comes as a bodily expression of music and is intimately linked to it therefore its evolution parallels generally that of music.

The 7th art - An evolution like no other

It is now time to introduce cinema as the 7th art. No other art can be compared to cinema in terms of output/production as you can see in the graphic below, and the reason is quite clear. Cinema, apart from art, can also be considered a form of entertainment, we can find in cinema all kinds of side-effects like amateur criticism, cultural impact, multinational conglomerates and even specific laws.

But first, we want to address the origin of this particular art as it is of great relevance to our subsequent point on how art can expand its boundaries. We point to the fact that almost two thousand years separate the creation of the fine arts and the invention of cinema. What triggered the invention of cinema at the end of the 19th century? *Electrification*.

Not only did the availability of electricity permit the recording and projection of cinema, but was also a key driving factor for the second industrial revolution. Now, it is critical that we employ some historical revisionism here. Although it is not appreciated by some readers and historians alike, we must point out that this prevents an unprecedented situation where *technology* directly contributes and helps evolve art. One can safely say that without technology, the



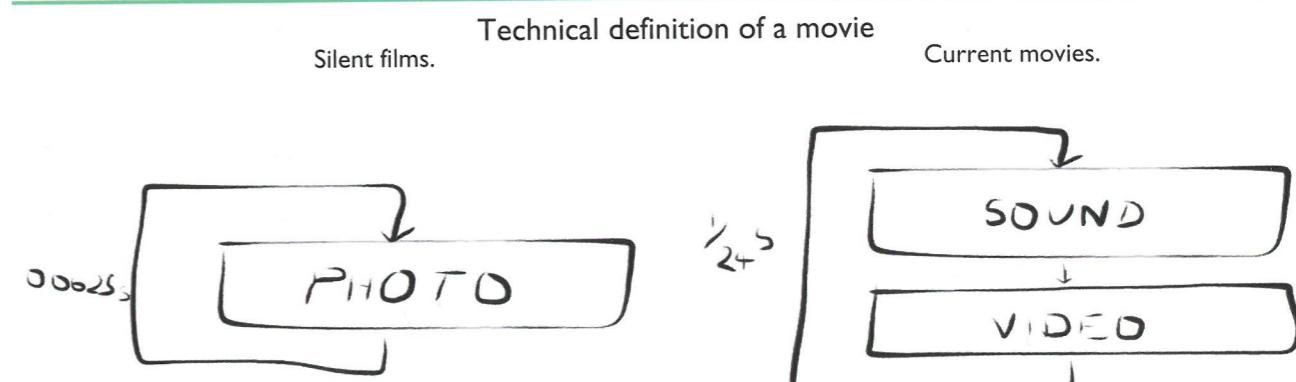
Worldwide film production.
Red is US and world is blue⁽⁶⁾

boundaries of human expressivity would not have been expanded and cinema would not have been created

More than a hundred years have passed since the invention of cinema. Its evolution has been steady, but surely dependent on technology. We can define, just like art, the word cinema in a plethora of ways but we are only interested in its technical aspects. What is cinema from a technical perspective? The figure below to the left helps us understand this concept.

Early in film history, the presentation of a movie was no more than a projection of consecutive images at a speed so rapid that the human brain perceived it as fluent movement, hence the name *motion picture*. The projections were as slow as 16 images per second (a speed of 0.025s for each frame) in early silent films. The image above left represents this infinite loop, which technologically speaking is also the process of projecting with a projector.

With the advent of colour films and synchronization with recorded sounds, films now evolved



into the technical process shown above right. By now, the *frame rate* was agreed to be 24 frames (no longer called images or photos, as they now contain also sound) per second. Observe that again, it is advancements in technology that help expand the art's expressiveness.

We can see how films are a medium of human expression meant to be communicated by the visual and oral means. Moreover, it is highly dependent on the concept of time. This adds a complex layer of theory on how to achieve a concrete goal while communicating an idea. *Film theory* was established to study the interplay of these concepts. We see that in the right figure there are two modules called video and sound in order to maintain generality. This includes sound and video with all its technological variants (surround, 5 channels, 3D, etc).

Onto the 8th step - Evolution of expressivity? Not!

Now, the long awaited justification for how videogames are the 8th footprint in human expression. We arise the fact that human communication is not always one-way, and in fact, in everyday-life (excepting radio, tv...) can you see a pattern

Interactive art has existed, but not officially as old as videogames^(8,9).

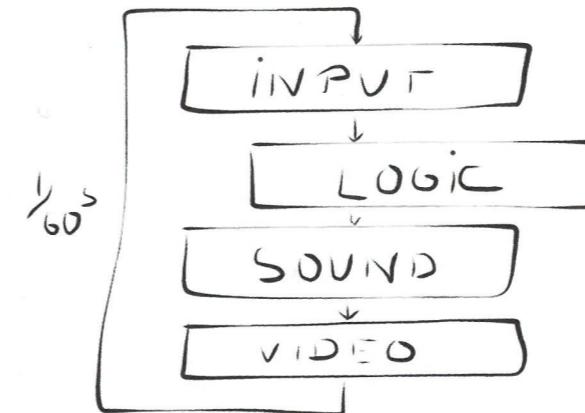


here?) most human communication is interactive, the so called *human interaction*.

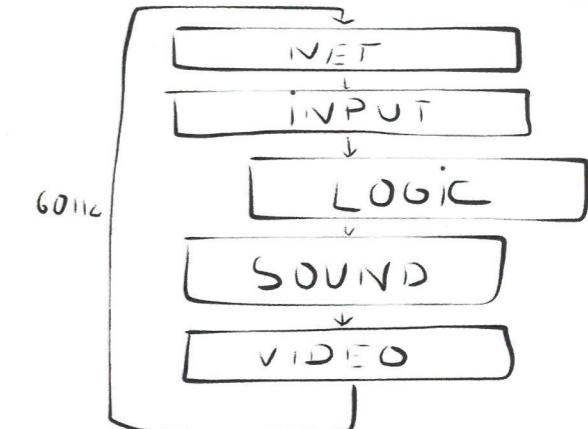
Can we afford to add interaction to a work of art, like a film for example? This is the basic idea for a videogame, and once more technology came to our aid in widening the possibilities of expression. Looking at the figure below left, we can add one more module to the technical process of a movie, the module of human interaction or *input* as named in the graphic.

Adding human input alone does not ensure a coherent experience in relation to what the person is doing (the input) and the feedback (the output) he is getting. Therefore, another module is required, that of a logical connection of the inputs and the outputs of the work. This module, in videogame parlour, is generally called the "rules of the game".

The computational process of: (i) obtaining what is provided as input by the user (called in art the *observer*, but no longer applies here because he's not passive anymore), (ii) checking the consequences of the input via the rules and, (iii) producing audio and visual feedback, must happen each 60th of a second to provide a fluid experience, just like movies (videogames were designed to be projected in televisions and computer screens which commonly have a refresh rate



Are videogames "interactive movies"?
Added interaction.



The Game Loop.

of 60Hz). This process requires tremendous amounts of calculation, specially taking into account video feedback produced as a three-dimensional representation of the content being exposed, sound spatialization, artificial intelligence and so on.

This new module adds, again like sound and video, a window of opportunity for maturing art itself, aided by technology and research. In actuality, we possess various forms and devices for input (this whole research area is called *human-computer interaction*). For instance we have keyboards (the most archaic although efficient way in some contexts), mouses (yes, one can also say mouses instead of mice), gamepads, pointing devices (analogous to the Wii controller), gesture recognition devices (like the *Nintendo Kinect*) and even virtual reality helmets (*Oculus* being one example).

One clever addition to this technical process was in realizing that interaction need not be only from one observer but from several observers which is again enabled thanks to the internet. Adding another module to process what input is being sent by other users yields a 'multiplayer game'. This complete process, pictured above right, is what is commonly called by game developers a *game loop*⁽¹¹⁾.

As you can see, evolving cinema by means of technology and adding a human factor like interaction, we can reach new boundaries in art expressivity. But beware, some people, especially conservatives are staunchly against this, commonly citing the "rules of the game" component as a means to justify considering them more as a form of entertainment rather than expression. The next section discusses this in detail.

Can we agree?

Can we agree that videogames are the next step? Are they mature enough for us to consider them serious or are they still immature that we need to keep innovating in them? We would like to point out some facts that might help us decide.

First, videogames borrow many techniques from previous consolidated arts; painting, sculpture, music and literature all have their counterparts in videogame production. These are namely texturing, modelling, game soundtrack and scripting.

There's no denying videogames form an important cornerstone to modern-day culture⁽¹⁰⁾.



Videogames, if considered art, are the first to be born in a fully globalized and capitalistic environment. Even so, they are produced not to be exposed in museums, art galleries or movie theatres but sold at stores. Therefore its main goal can be argued to be profit instead of expression. In spite of this, in their relatively short age (around 35 years) we have seen videogames mature faster than any other art. Consider the japanese game *Pac-Man* (1980) with the french videogame *Heavy Rain* (2010).

The videogame subculture is immensely big. Further there are other social phenomena and activities derived from video games. Social

conventions, merchandise in the form of clothing and home products, soundtracks, movie adaptations (this one is specially nice if you think about it), book adaptations, concerts (Symphonische Spieldemusikkonzerte) and even weddings⁽²⁾ are chief examples.

So, can we agree? The decision rests not with the artists, not with the wise-men and certainly not with the elders. It lies with our generation, the generation that is growing up with them and being influenced by them; the generation that has them as an important part of their daily lives and also the generation that will produce them in the future as well.

BIBLIOGRAPHY

1. Britannica Encyclopedia (2014), *The Arts*, <http://global.britannica.com/EBchecked/topic/36405/the-arts> (visited on 01/23/2015).
2. CNN, Kyung Lah (2009), *Tokyo man marries video game character*, <http://edition.cnn.com/2009/WORLD/asiapcf/12/16/japan.virtual.wedding/> (visited on 01/25/2015)
3. Demonstrations, Harvard Natural Sciences Lecture (2014), *Musical Instruments*, <http://sciencedemonstrations.fas.harvard.edu/icb/icb.do?keyword=k16940&pageid=icb.page80868> (visited on 01/23/2015).
4. Hawkins Sara (2011), *Copyright Fair Use and How it Works for Online Images*, <http://www.socialmediaexaminer.com/copyright-fair-use-and-how-it-works-for-online-images/> (visited on 01/23/2015).
5. Knuth Donald E. (1974), "Computer programming as an art", In: ACM Turing award lectures, ACM.
6. Pollock Rufus (2008), *Film/Movie Production Over Time*, <http://rufuspollock.org/2008/10/17/filmmovie-production-over-time/> (visited on 01/23/2015).
7. Ross William (2014), *What is Art?*, <http://blogs.uoregon.edu/wrossaad/final-portfolio/2-what-is-art/> (visited on 01/23/2015).
8. Rozin Daniel (1999), *Daniel Rozin Wooden Mirror[sic]*, <http://www.smoothware.com/danny/woodenmirror.html> (visited on 01/25/2015).
9. Wikimedia Foundation (2015), *Interactive Art*, http://en.wikipedia.org/wiki/Interactive_art (visited on 01/25/2015).
10. Yoo Alice (2012), *10 Interactive Street Art Works That Rocked*, <http://www.smoothware.com/danny/woodenmirror.html> (visited on 01/25/2015).
11. Young Vaughan (2004), *Programming A Multiplayer First Person Shooter In DirectX*, Game Development Series, Charles River Media, Inc.

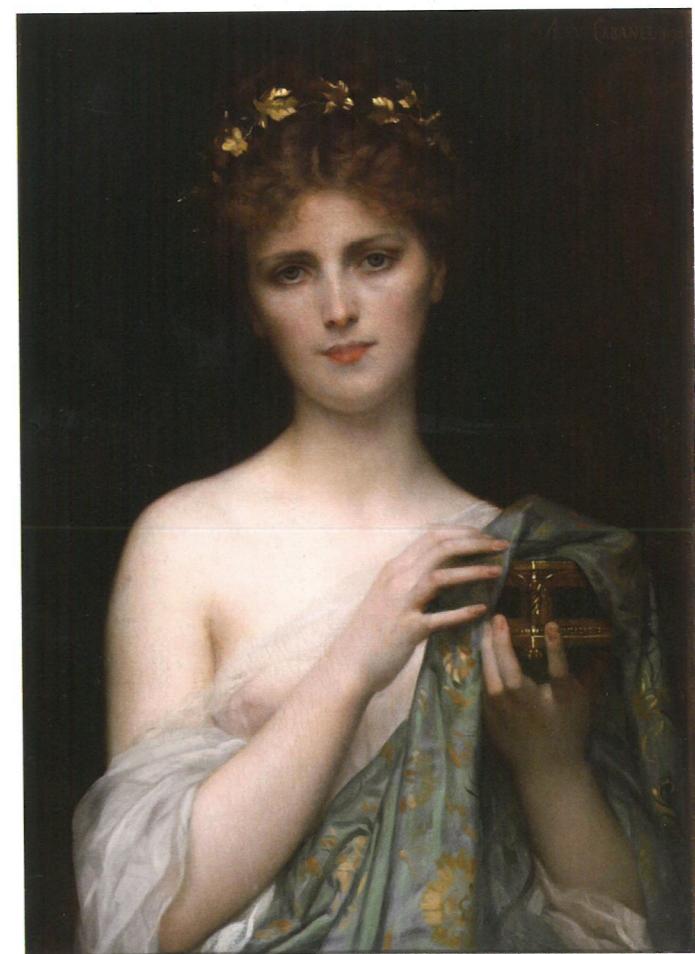
DISSERTATION

HISTOIRE DE L'ART

Par
Pierre-Cyril Aubin

ses valeurs, trouvant refuge dans l'illusion d'un système cosmique et intemporel. L'épanouissement du maître devient alors le désarroi de ses disciples. La création est une lutte, contre les convenances, contre le monde établi, contre la nature elle-même parfois. Nous verrons comment elle a été combattue, acceptée ou sublimée. Vaincre la nature, c'est renouer avec le mythe de Faust qui nous servira de dernier fil conducteur. Dans sa quête de jeunesse et « d'épanouissement », le vieil homme de la culture européenne

Alexandre Cabanel, *Pandore*
1873, huile sur toile.



Les avant-gardes se veulent les pionniers d'un monde nouveau, délié de toutes les contraintes consacrées par les générations qui les ont précédées. À la recherche d'un monde d'éternité, elles se caractérisent souvent par le geste de refus qui les fait naître. Vandales des temps modernes, elles s'attaquent aux idoles sanctifiées et dans leur iconoclasme espèrent libérer leur art de ses chaînes immémoriales. Cette position s'incarne dans la citation de Kazimir Malevitch : « *Nous ne pouvons vaincre la nature, car l'homme est la nature ; je ne veux pas la vaincre, je veux un nouvel épanouissement : ce que je veux, c'est la négation de ce qui nous précède.* » (*Des nouveaux systèmes dans l'art*, 1919). Cette phrase, qui aurait pu être anonymisée, fut proférée par tous les fondateurs de mouvements avant-gardistes. Elle est de fait commune à tous les systèmes nés de la révolte, obsédés par le désir de renouveau. Cette renaissance pose d'abord la question de l'héritage. En effet, cette posture se nourrit du reniement revendiqué de sa culture, de