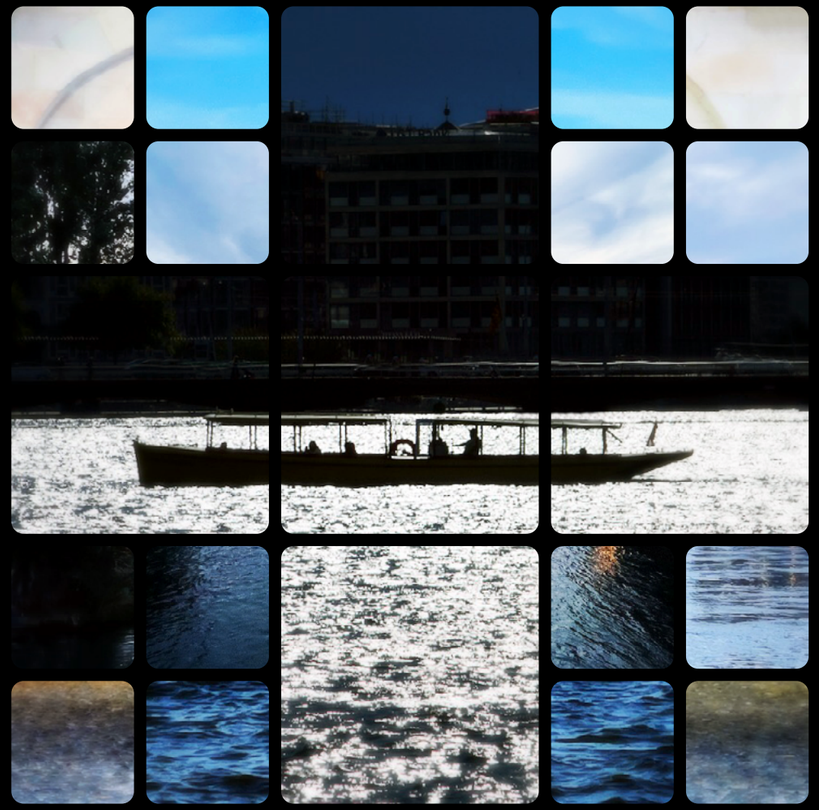
# COMPUTER & MEDIA ART AT THE AGE OF METAVERSES AND NFT

EDITED BY KHALDOUN ZREIK / MARC VEYRAT / MATTHIEU QUINIOU

CAC.7

7TH COMPUTER ART CONGRESS
SEPTEMBER 2022, HEAD GENEVA, SWITZERLAND

europia



# NFTS BEYOND THE VISIBLE: POISED BETWEEN EN BLOC REJECTION AND NEW CHAINS OF VALUE[1]


## ANTHONY MASURE AND GUILLAUME HELLEU

Anthony Masure Anthony Masure is an Associate Professor and Dean of Research at Geneva University of Art and Design (HEAD – Genève, HES-SO).

Guillaume Helleu is an architect and Associate Researcher at Geneva University of Art and Design (HEAD – Genève, HES-SO), and is also a cofounder of Hint3rland, a Web3 creative studio.


1 Translated from French by Aviva Cashmira Kakar

## Abstract

NFTs (non-fungible tokens) appeared in 2017. They are tamper-proof decentralized digital certificates which have gained fame because of their appropriation by the art world. NFTs have attracted a great deal of controversy, and are frequently accused of being speculative, useless and polluting. We propose to examine these polemics, founded for the most part, in order to show that other approaches are possible. In fact, artistic applications are merely one link in the chain, and NFTs cannot be reduced to their mere visible aspect, they require a wider examination of their value systems, distribution chains, and methods of governance.




In his essay *Design is Invisible*, sociologist and historian Lucius Burckhardt showed less interest in tangible objects than in the social systems they are instrumental in producing. He demonstrated that, "design has an invisible component, namely an organizational-institutional dimension over which the designer always exercises a certain influence yet which, given the way we classify our environment in terms of objects, tends to remain hidden."[2] Applied to our current period, such statements help us to understand that reducing digital technologies to mere interfaces – fine membranes between the visible and the invisible – creates an impediment to the understanding of the multiplicity of the socio-technical layers of programmed environments.[3] In other words, the digital world is problematic on a visible scale: underlying technical protocols are unclear, opaque even, generating multiple manipulations and incomprehension. There are divergences between the promises of marketing and economic models, an obscurity regarding moderation and recommendation algorithms, dark patterns, threats to privacy, and the list goes on.

Among the recent technological avatars that have generated many misunderstandings and a great deal of polemic is blockchain technology (2008), Bitcoin (2009) is the most well-known example. Despite its notoriety, it remains misunderstood and is largely only known for its monetary applications. Created in reaction to the banking crisis of 2008 and the debt economy, the initial aim of Bitcoin and blockchain was to counter the centralized power of banks and nation-states. These technologies offered a "decentralized" alternative, one that envisioned individuals having the capacity to control their own money, and, better yet, to program other value systems. In 2015, based on this technology, the Ethereum platform proposed a divergent vision from that of the more political Bitcoin, one that promised more efficiency and the facilitation of exchanges through the development of new technical protocols called smart contracts (automated scripts deployed using cryptographically signed blockchain transactions), dApps (decentralized applications that circulate outside of proprietary app stores), ICOs (initial coin offerings, the cryptocurrency equivalent of an initial public offering), and tokens (a unit of digital data inscribed in a blockchain).

The most well-known tokens – which have gained fame because of their appropriation by the art world – are NFTs (non-fungible tokens), which are tamper-proof decentralized digital certificates that are associated with decentralized digital entities. They have attracted a great deal of polemic as attested by the whirl of lively exchanges on social media that the very mention of the subject elicits. NFTs have frequently been accused of being speculative, useless and polluting. We propose to examine these accusations, often well founded, in order to show that, despite this, other ways of dealing with them are possible, and that it is rash to condemn these technologies outright. In fact, the artistic applications of NFTs are a mere link in the chain, and it is reductive to evaluate these entities merely based upon their visible attributes. They demand a fuller examination that takes into account their systems of value, distribution chains and forms of governance.

## Collection as a Quest for Non-Fulfilment

While the very first versions of NFTs date back to 2015,[4] it was not until 2017 that pioneering initiatives like CryptoPunks and CryptoKitties introduced the notion of "collectibles," namely visuals "signed" and authenticated on the Ethereum network, which could then be capitalized (sold, exchanged, ceded, etc.). Initially distributed freely on the Ethereum network, CryptoPunks (a series of 10,000 24 × 24 pixels images), were soon followed by CryptoKitties (collectible digital kittens that could reproduce). Their appearance inspired the creation of the ERC-721 technical standard (2017), which became the basis of today's NFTs. This was the first instance in which the "cut and paste" possibilities that are an intrinsic feature of all digital productions was countered by blockchain technology. This, for the first time, provided an operative way in which to create digital "rarity," giving value to files through certified signatures. In a sense, NFTs have forged a third path, between P2P (peer-to-peer) free access and the desire for web surveillance (i.e. DADVSI and HADOPI

2 Lucius Burckhardt, *Design is Invisible: Planning, Education and Society*, Silvan Blumenthal, Martin Schmitz, trans., (Basel: Birkhauser, 2017). Accessed online: http://wiki.iad.zhdk.ch/wiki/download/attachments/489652344/04_Burckhardt_Lucius_1981_2012_Design_is_Invisible.pdf?version=1&modificationDate=1541671780568&cacheVersion=1&api=v2, p. 158.

3 Benjamin H. Bratton, *The Stack: On Software and Sovereignty*, (Cambridge MA: MIT Press, 2016).

4 Aude Launay, "Ce que la tokenisation fait à l'art," in *The Great Offshore,* ed. RYBN, (Villecomtal-sur-Arros: UV, 2021).

legislation in France[5]). Thanks to NFTs, the files concerned can continue to circulate freely on the network (there can be thousands of copies of an image of the same CryptoPunk), but only one of them will be attached to a digital signature, and thus have value. Having garnered record sums in sales, CryptoPunks have acquired status as cultural artifacts of the first order and are considered equal to a work of art.[6]

Apart from their appearance at the intersection of web pop and video gaming culture, these first avatars of collectible NFTs have greatly contributed, in the wake of Bitcoin, to the increased visibility of decentralized encryption. Furthermore, one such strategy had been anticipated as early as 1993 by Cypherpunk[7] Hal Finney, the person who received the first Bitcoin transaction:

Giving a little more thought to the idea of buying and selling digital cash, I thought of a way to present it. We're buying and selling "cryptographic trading cards." […] What a perfect conversation piece to be treasured and shown to your friends and family. […] They come in all kinds of varieties, from the common 1s [sic], to the rarer 50s, all the way to the seldom-seen 1000s. Hours of fun can be had for all. Your friendly cryptographic trading card dealer wants to join the fun, too. He'll be as interested in buying your trading cards back as in selling them.[8]

In retrospect, the recent success of the French "unicorn" Sorare[9] (2019), which offers to "tokenize" cards of football players, shows the pertinence of such an analysis and invites us to revisit our prejudices when it comes to these digital collections that, from a more playful standpoint, could be harbingers of the future of the Web.[10] If one may think it strange, at first sight, to "collect" digital files, then one should be equally astonished at the value attributed to tangible mainstream objects (such as a baseball bat, LP, CD, etc.) signed by a celebrity. As psychoanalyst Gérard Wajcman notes, the principle of collecting is driven by desire, a quest of non-fulfilment where the multiple coexists with the "Unique Object."[11] This association between reproduction and unicity is at the heart of the paradoxes and controversies that surround NFTs.

## The Technological Agenda Behind Wars and Pandemics

As a backdrop to this digital collecting, we put forth the hypothesis that pandemics (and wars) do drive a sort of technological "agenda," or at the very least,

5 Translators Note: a French "law on authors' rights and related rights in the information society."

6 In June 2021, the CryptoPunk *Alien* was sold at auction at Sotheby's for $11.8 million to Shalom McKenzie, the largest shareholder of an online betting operation. See Alice Robert, "Natively Digital. CryptoPunk 7523," *Sotheby's*, June 2021, https://www.sothebys.com/en/buy/auction/2021/natively-digital-cryptopunk-7523/cryptopunk-7523

7 The objective of the Cypherpunk movement is to ensure the respect of privacy through the proactive use of encryption technologies.

8 Hal Finney, "Crypto Trading Cards," *The Cypherpunks Mailing List*, 17 January 1993, https://lists.cpunks.org/pipermail/cypherpunks-legacy/1993-January/001489.html

9 A company whose estimated worth is 1 billion euros.

10 Regarding this premise please see "Sorare, le Web version collector: et si le futur nous venait du foot?" in *ADN*, April–June 2022.

11 Gérard Wacjman, *Collection*, followed by *L'Avarice* [1999], (Caen: Nous, Collection Antiphilosophique, 2003).

dynamics of acceleration. In mid-2020, at the heart of the Covid-19 pandemic, the videoconference company Zoom was worth as much on the stock exchange as the seven major airline companies put together. This fact highlights the increased importance of online presence, and, by extension, digital identity, from skins to video games (a market estimated at 50 billion USD in 2022[12]) to social media, avatars and metaverses, immersive virtual worlds that reprise the promises of older initiatives such as Second Life (2003). In summary, during a period of pandemic, when physical interactions are greatly reduced, it is socially more interesting to "possess" items in digital environments than in the real world (even if both can come together), since far more people are out there.

## A Maze of Controversies

After a period of stagnation, the media attention focused upon NFTs came to a head in March 2021 with the sale at Christie's of a digital "collage" by the artist Beeple that went for 69 million USD.[13] This work by Beeple, who acquired his fame through Instagram and is one of the most highly-rated living artists, was acquired by Indian millionaire Vignesh Sundaresan, who made his fortune in cryptocurrencies. This example illustrates three of the main controversies attributed to NFTs – speculation, uselessness, and pollution – and we will continue by examining their foundations and possible excesses of this type.

## Speculation

The main criticism aimed at blockchain technologies is their speculative nature, to the point of their being accused of serving the interests of a few speculators in the manner of a Ponzi scheme. This could be corroborated by quotations of Bitcoin, the stallion of cryptocurrencies, which went from €0.40 a coin in 2010 to €28,000 in May 2022, or even the record amounts garnered by some artistic NFTs (such as the "street art" style illustrations of the Bored Ape Yacht Club). The resale prices of recent NFT transactions tend to lend weight to this hypothesis, and demonstrate that there is indeed a "bubble" effect, comparable to that seen on the Web in the 2000s. Another example is the sale of the NFT of the first Tweet, sold on the OpenSea platform in March 2021 for a cool 2.9 million USD, but which could be found on offer in March 2022 for a mere 30,500 USD. These fluctuating mechanics of value are an intrinsic feature of the generally cynical market economy,[14] in which supply and demand prevail, and where anything and everything (such as luxury watches, Hermès handbags, contemporary art, wheat, real estate, etc.), even digital, can take on value because a social consensus declares that it will be worth even more tomorrow.[15] While the bursting of this bubble

12 "How on earth is trading virtual items in video games a $50 billion industry?," Medium.com, *WAX io*, December 11, 2017, https://medium.com/wax-io/how-on-earth-is-trading-virtual-items-in-video-games-a-50-billion-industry-5972c211d621

13 "Beeple, "Everydays: the First 5000 Days," *Sotheby's*, March 11, 2021, https://onlineonly.christies.com/s/beeple-first-5000-days/beeple-b-1981-1/112924

14 Alexandre Stachtchenko, "Manuel de survie dans la jungle des poncifs anti-Bitcoin," *Bitcoin.fr*, January 6 2022, https://bitcoin.fr/manuel-de-survie-dans-la-jungle-des-poncifs-anti-bitcoin

15 Juliette Garnier, "Luxe: le sac Hermès, un placement qui s'arrache," *Le Monde*, April 28, 2022, https://www.lemonde.fr/economie/article/2022/04/28/

will have the virtue of separating the wheat from the chaff in these productions, one must nevertheless note that, behind the media blitz about a few key record sales by an elite who made their fortune in cryptocurrencies and who wished to reinvest their gains in social markers from that environment, the average price in 2021 of an NFT remained "as low as" 100–400 USD.

## Uselessness

The controversy linked to the notion of speculation is often in turn linked to that of lack of utility, as the two often reinforce each other. Like all monies, the value of NFTs is based upon the principle of shared trust. In this sense, NFTs are no more "virtual" than printed fiat government-issued currencies, which are often tangibly worth no more than 0.4% of their stated value, and can also be subject to major fluctuations (i.e. the deflation of the Turkish pound, the Lebanese pound, etc.). The future will tell if it is a pertinent choice, but some countries have gone so far as to publicly espouse the political aims of Bitcoin and have made its adoption as an official money a gesture of emancipation (El Salvador has adopted Bitcoin as an official currency in September 2021 to reduce its dependency upon the US dollar, and the prices of transfers, followed by the Central African Republic in April 2022, who wished to break from the Central African Franc and fight lack of banking access.[16] As for artistic NFTs, the accusation of uselessness is more related to the overall allegations expressed about art in general, namely its association with social appearances, whether they be digital or not. This is a complex question that we cannot delve into here, but it is one that reappears to show the symmetry between the two seemingly opposite terms at first glance, useful and useless.[17] It should be noted that it is complicated for many to consider an intangible object as "artistic." Such an assertion would be the result of a lack of knowledge of the history of art, from photography and cinema to Conceptual Art, or even video art and Net Art. Finally, the accusation by which it would be "useless" to possess a signed digital file since it could always ostensibly be cut and pasted, does deserve a level of qualification. Here, the example of the seemingly futile Bored Apes is instructive since any image from that collection is also a membership card that gives the bearer entrée into private sales and events, which would not be available to mere bearers of unsigned copies.[18] In short, the true significance of NFTs will not be understood until they are no longer considered as mere images.

## Pollution

The last major criticism leveled at NFTs concerns their carbon footprint, a subject that merits its own paper. In fact the first blockchains worked based upon the highly energy-guzzling principle of "proof of work," namely the secure verification of new transactions by the expenditure of a great deal of energy. Moreover, the carbon footprint of the Ethereum platform, the one most frequently used for NFTs, is based upon the use of fossil energies, and renewable energy surpluses (such as hydroelectricity, for example). This pollution "blind spot," engendered by artistic creation (as if NFTs, as intangible "non-things"[19] could escape this, much as the concept of the cloud cannot escape the laws of physics) was exposed in the media at the end of 2020 by artist Memo Akten.[20] In addition, mention must be made of several manifestos and statements issued by a socially committed group that came together under the hashtags #CleanNFTs or #GreenNFTs (Joanie Lemercier, Raphaël de Courville, Mat DesLauriers, Alice Bucknell, Ed Fornieles, Ami Clarke, Simon Denny, Art Min, Christopher Schultz, et al.). These individuals notably sought to bring to light the usefulness of blockchains such as Tezos, Solana or Polygon which made use of the proof-of-stake protocol. This works on the premise of a distributed consensus mechanism, which requires less energy usage. The most interesting case study is that of the self-managing platform Hic et Nunc, founded in March 2021 by artist Rafael Lima, and which uses the Tezos blockchain. After having raised a lot of enthusiastic interest from a group of people who wanted to invest in its development and governance, the platform was suddenly and unexpectedly shut down by its creator in November 2021, less than a year after its launching, leaving in its wake a bereft community. A centralized commercial platform (like MySpace or Vine) would have simply disappeared, but the fact that the metadata of its associated works and programs in the form of smart contracts were publicly stocked in a blockchain enabled the community to install alternative and compatible platforms with the NFTs that had already been "minted" on Hic and Nunc – an illustration of the virtues of decentralization and open source.[21] Among these alternatives, Teia.art (February 2022) offers configurable "donation contracts" that enable one to donate a portion of profits to humanitarian causes (such as the war in Ukraine[22]) or to support free software (such as Processing).[23] A self-managed DAO (decentralized autonomous organization) based on the principle of run spaces, Teia.art is inclusive and open to other cultures outside Europe, contrary to many traditional galleries, and it is an example that demonstrates that ecological concerns are not limited to the calculation of carbon footprints, rather opting to commit to encouraging a wider reflection on the functioning and values of digital ecosystems.[24]

luxe-le-sac-hermes-un-placement-qui-s-arrache_6124072_3234.html

16 Falila Gbadamassi, "Le bitcoin, monnaie officielle en Centrafrique: 'Une décision politique', estime un expert du numérique en Afrique," *FranceInfo Afrique*, April 28, 2022, https://www.francetvinfo.fr/monde/afrique/economie-africaine/le-bitcoin-monnaie-officielle-en-centrafrique-une-decision-politique-estime-un-expert-du-numerique-en-afrique_5107669.html

17 Pierre-Damien Huyghe, "Le format comme condition de possibilité," lecture given at the 63rd Rencontres de Lure, August 2015, (unpublished), accessed online at https://delure.org/les-rencontres/rencontres-precedentes/rencontres-2015

18 "The Bored Apes take Manhattan," *Inputmag.com*, October 2021, https://www.inputmag.com/culture/bored-ape-yacht-club-nft-nyc-ape-fest

19 Vilém Flusser, *Choses et non choses,* translated from the German by Jean Mouchard, (Paris: Jacqueline Chambon, 1996).

20 Plusieurs ressources collectées par Memo Akten sont rassemblées ici : https://cryptoart.wtf

21 Matt DesLauriers, "Hic et Nunc and the Merits of Web3: Experimental Protocols in Decentralization and Distributed Hosting," *Mattdesl.substack.com*, November 2021, https://mattdesl.substack.com/p/hicetnunc-and-the-merits-of-web3

22 @MerchantCoppola, *Tezos Art Initiative to Help Ukraine*, Teia.art, February 26, 2022, https://blog.teia.art/blog/tezos-art-initiative-to-help-ukraine

23 @turbulentdeterm, *Teia.art Launch Announcement*, Teia.art, February 1, 2022, https://blog.teia.art/blog/teia-art-launch-announcement

24 *Governance on Teia*, GitHub.com, May 2022, https://github.com/teia-community/teia-docs/wiki/Governance-on-Teia

As we have just seen, the three main criticisms linked to NFTs (speculation, lack of utility, pollution), are, for the most part, well-founded. Nevertheless, our assertion in providing a more in-depth assessment of these perceived faults is that alternatives are possible that address them, whether they already exist (such as Teia.art) or are merely possible, and that we should not be so quick to rush to an a priori condemnation of these technologies.

## From an Image that Can be Capitalized to a Specific Work

While most NFTs are limited to simple images of no major artistic interest that can be capitalized, there are nonetheless some innovative creations that are of particular interest. These are characterized by specific work with decentralized technologies and a comprehension of their cultural codes, whether they be linked to the heritage of Net Art, or the Cypherpunks, or to the use of digital media associated with crypto culture (Twitter and Discord). Many works that can only exist as NFTs make use of scriptwriting on collaborative or community platforms. However, the most important aspect resides in an NFTs capacity to be configured and programmed. Through the use of smart contracts, artistic creations can evolve according to preestablished rules and data in real time that is external to the work, thus establishing links with Conceptual Art (the idea that the artist's protocol, and not sensibility is paramount),[25] Arte Povera (the evolution and even organic degradation of a work), or even the not so aptly named Generative Art (where an artist selects one or several forms made with the use of an autonomously created system).

Otherwise put, it is less a matter of the duplication, or even transposition, of works into NFTs than the invention of new art forms that can only exist within the blockchain (work that revolves around notions of property, proof of trust, encryption, identity, value, decentralization and consensus).[26] Among these are the works of Rhea Myers, which are of particular interest: some that merit citing are Token Grid (2019), a dApp that plays with the esthetics of a modernist grid through the use of smart contracts, Blockchain Aesthetics (2014–2015), a visualization of hashes (unique inputs identifiers), as well as the scathing Art Is (2014–2017), an auction system that enables one to publicly impose one definition of art or another. Another interesting example is the Lost Poets project, made public in September 2021 by the artist Pak. It is similar to a vast scavenger or treasure hunt which associates fragments of poems in a game of strategy with clues that are revealed over the course of several months.[27]

## From NFTs to Web3: the New Order of the Web

While NFTs are at the forefront of the media, it is useful to remember that they are only one element of a far larger technological movement, which comes together under the umbrella of the alluring marketing term, "Web3."[28] In order to understand the principles of this new iteration of the Web, which is based upon decentralized blockchain technology, it is important to remember what it is succeeding. The Web – which came to be known as the Web "1.0" – was invented by Tim Berners-Lee at CERN (located on the border between France and Switzerland). Despite its utopian promise of the possibility of scientific knowledge that could be shared worldwide through simplified publication protocols, the initial version was too technically complex to enable a wider public to contribute to it. This "read only" mode, which only allows for simple consultation, is also the result of commercial strategies. Laptops, smartphones and Internet "boxes" are not conceived to work as servers, specifically with the storage and functionality to enable the use of websites. This problem of access would be addressed with the advent of the Web 2.0 of the 2000s, with the development of participative "platforms" such as social media (Flickr, MySpace, Facebook, Twitter, etc.), where anyone could create an account and upload information, thus passing from a read only to a "read/write" mode. The major problem behind the platformization of the Web, in which we are still operating, resides in the non-distribution of the value created by users.[29]

The promise of decentralization that is an intrinsic part of Web3 is a reaction to GAFAM (and their Asian avatars[30]), and offers users the promise of more access and control of their data. It will develop around five key principles:

### 1 – A Currency System

Bitcoin and other cryptocurrencies would be positioned within this group.

### 2 – An Economic System

DeFi (for decentralized finance) can be defined as a financial transaction environment independent of traditional intermediaries, such as brokers, stocks, or banks. With several protocols on offer (Compound, 2019; Uniswap, 2018), DeFi provides a bridge between traditional and decentralized economics through the introduction of stablecoins (Tether, 2014; Dai, 2017; Binance USD, 2018), which are tokens whose value is fixed based on fiat currencies. They enable the possibility of the exchange of national currencies without the use of traditional protocols (SWIFT), in an almost instantaneous manner. A system that works 24/7 and is difficult to stop, in January 2022, DeFi represented a market valued at over 200 million USD.[31]

### 3 – A Proprietary System

NFTs, the focus of this article, can transform any digital entity into merchandise. They also offer powerful certification mechanisms (provided one is using a smartphone). For example, in 2022, they prevented a French minister from using fake tickets to a football match as an alibi.[32] Once again, the

25 Rhea Myers, *This Contract Is Not Art*, Rhea.art, https://rhea.art/is-art

26 Rhea Myers, *Three Times Three Modes of Blockchain Art*, Rhea.art, May 2019, https://rhea.art/three-times-three-modes-of-blockchain-art

27 https://lostpoets.xyz/#discover

28 The term "Web3" was first used in 2014 by Gavin Wood, cofounder of Ethereum. It should not be confused with the Web 3.0 (the Semantic Web).

29 Geert Lovink, *Stuck on the Platform: Reclaiming the Internet*, (Amsterdam: Valiz, 2022).

30 It should be noted that issues of redistribution also exist in the sectors of cinema, music and video games.

31 Wintermeyer, Lawrence, "DeFi Is on the Move to the Institutional Market: More a Marathon than a Sprint," *Forbes*, February 2022, https://www.forbes.com/sites/lawrencewintermeyer/2022/02/17/defi-is-on-the-move-to-the-institutional-market-more-a-marathon-than-a-sprint

32 Since this writing, the Minister of Sports, Amélie Oudéa-Castéra, has

words of Burckhardt resound:

The expression of an "invisible design" springs from the notion that design is […] broader than we might think. When a [designer] receives a commission to [conceive] a machine to distribute transport tickets, he should not limit himself to merely creating a gray box that receives coins and spits out a little ticket. They should optimize the task and raise questions that extend beyond the object.[33]

## 4 – A System of Governance

In April 2016, DAOs (Decentralized Autonomous Organizations) were created by a project of the same name. They enabled the implementation of new types of governance where fraud and corruption are greatly limited by rules that are predefined and executed through smart contracts. While DAOs offer more fluid governance processes (voting, validations, execution, etc.), they do nevertheless raise numerous questions due to their potential for replacing the functions of nation states, and other traditional instances of regulation (justice, associations, unions, etc.).

## 5 – An Identity System

Major issues of the next decades will certainly be focused around DIDs (Decentralized Identifiers). In a world where the notion of identity has never been more under question, and where the profiling practiced by the GAFAMs is just as significant, the restructuring of digital identities has become a necessity. The traditional means of identification through an e-mail and password on the Web 1.0 has been partially replaced by "social logins" (Facebook Connect, 2008; Google Sign In, 2015; Sign in With Apple, 2019), a situation which illustrates the inherent problematics of the Web 2.0 (focused advertising, data mining, dependencies on private actors, to name but a few). One example that highlighted this was the Cambridge Analytica scandal (2018), in which Facebook allowed a private company to "acquire" 87 million profiles in order to provide assistance with the political campaigns of Ted Cruz and Donald Trump. As a response to this, Web3 offers a new way of performing authentifications online through the use of wallets like Metamask (2016). This type of protocol is decentralized and belongs to the user. It allows for improved data interoperability, even as it leaves to each user the control of what they wish to transmit. Its potential integration into Instagram[34] and Twitter[35] shows that we are in a transitional phase between the Web 2.0 and Web3 and that, at this stage, nothing can truly confirm that the problems that Web3 are expected to resolve will not be replaced by even greater risks.

## Seeing Behind the Image

Two recent examples enable us to better understand the connections between the five pillars of Web3. The first is the Nouns DAO project (2021), which offers daily auctions in cryptocurrencies (monetary systems) of an NFT (proprietary system) that represents an animated pixelated character from a matrix that is copyright free. The proceeds collected are placed in a fund controlled by all the owners of NFTs in the collection (system of governance). Otherwise put, the decentralized protocols (economic system) auction a right to vote that gives the bearer control over the collected funds. By connecting to the project's website through one's wallet (identity system), those who possess a Noun can manage a fund which, in 2022, is superior to 24 000 Ethers (50 million USD). Among other things, the fund allocated 100 Ethers in support of Ukraine through a donation to UNICEF (Proposition #42, voted on March 12, 2022), or the financing of a documentary film (Proposition #73, voted on May 15, 2022). While these two actions would seem to be benevolent or benign, one might imagine what could happen if it was a matter of supporting a political party, a religion or military actions? On a more general level, one might wonder if DAOs signal the return to a sort of tax-based voting system (based on one's level of income)?

The second paradigmatic project of Web3 is closer to the realm of creation. Made public in October 2021 by the artist Mario Klingemann, Botto (from bot, derived from robot) is defined by its author as a generative algorithm that aims to create works of arts in collaboration with human beings. The latter can participate in this process by using cryptocurrency (monetary system) to acquire dedicated tokens (proprietary system) called Bottos. The program is based upon deep learning technologies (through VQGAN + CLIP and GPT-3) and "creates" 350 works per week from text fragments (text prompts) and presents them to the community. After one identifies oneself using one's wallet (identity system) in the dedicated application, each bearer votes (system of governance) for this or that "art fragment" based on one's individual preferences. These results influence Botto's generative algorithm, thus creating a "taste model" that is managed by the community, one that Botto will subsequently adapt. Once a week, Botto puts an NFT of a work up for auction on the SuperRare platform, and the receipts are distributed among the community (an economic system). In March 2022, five works have already been acquired for a total that amounted to around a million USD. In order to avoid any repetition, Mario Klingemann eventually proposes to add elements to the program to renew styles and react to external data.[36] For the moment, we have no choice but to conclude that the proposed esthetic, as is often the case with deep learning, is only a pale remix of styles appropriated from the history of art.

## How Can We Represent the Cultural Logic of the Digital Era?

These two case studies show both the promise and the current limitations of Web3. On the one side, there is the utopic concept of returning power to internet users by decentralizing the group of protocols that govern the Web in order to make

announced that she wished to use blockchain in the fight against forged tickets, with an upcoming first test scheduled for the 29th and 30th of July, for the Ed Sheeran concert at the Stade de France.

33 Lucius Burckhardt, interview with Thierry Paquot, Paris, April 23 1998.

34 Instagram, Tweet dated May 10 2022: https://twitter.com/instagram/status/1524056646086889476

35 Brooks Butler, "Twitter Creates Crypto Team to Integrate Web3 DApps," *CryptoBriefing*, November 2021, https://cryptobriefing.com/twitter-creates-crypto-team-to-integrate-web3-dapps/

36 Margaux Dussert, "Botto, la première IA artiste qui propose à sa communauté d'humains de co-créer avec elle," *ADN*, October 2021, https://www.ladn.eu/mondes-creatifs/botto-ia-artiste-communaute-co-creation

it into a common good for all humanity. On the other, there is the upsurge of new areas of control that are potentially even more harmful than GAFAM (increasing inequalities, voting based on finances, insecurity related to individual management of digital identifiers, etc.). Our contribution here is intended to highlight the fact that the usual controversies associated with NFTs deserve to be clarified and studied in depth in order to be able to confront the new challenges associated with the Web3, which themselves remain only partially understood.

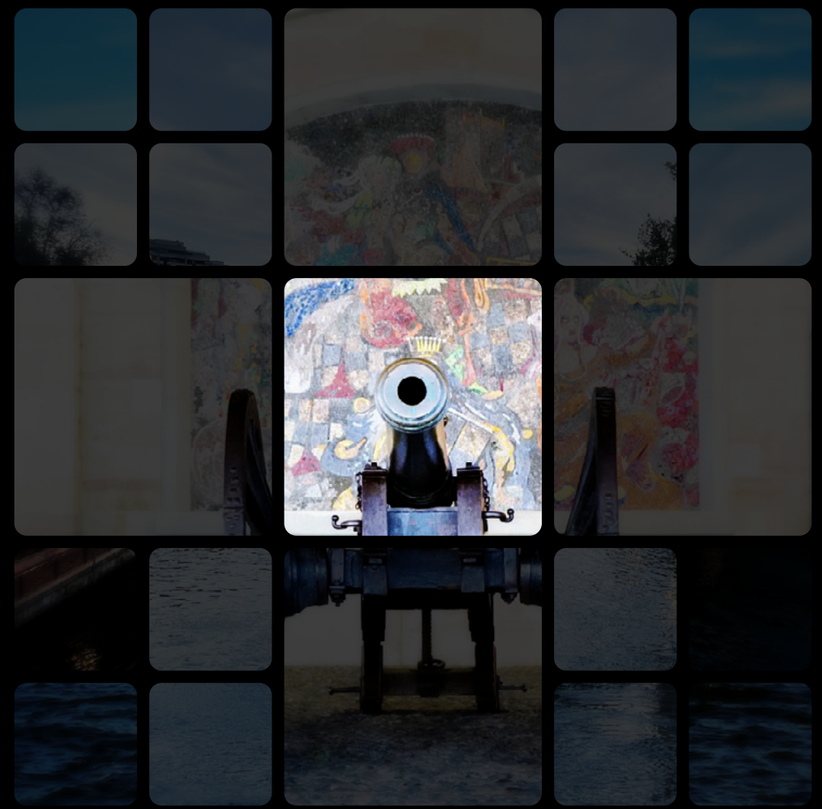
One has only to type "cloud," "IA," or "blockchain" into a search engine to see for oneself: design has a role to play here by addressing the graphic dearth of representations of digital environments.[37] It also has a role to play to increase the intelligibility of these technologies, notably to consciously work to bring out their invisible layers.[38] Consequently, now, more than ever, to return to Burckhardt, we are in need of an "invisible design […] that consciously takes into account the invisible overall system comprised of objects and interpersonal relationships."[39]



37 Ana Teixeira Pinto, "Can the Cultural Logic of the Digital Era Be Exhibited? A Tale of Two Shows," *FKA Witte de With*, July 2016, https://www.fkawdw.nl/en/review/desk/can_the_cultural_logic_of_the_digital_era_be_exhibited_a_tale_of_two_shows

38 The authors of this article are working on the design of a "Methodological Guide to Blockchain Technologies," which includes a copyright free visual kit. It is scheduled for release in September 2022.

39 Lucius Burckhardt, *Design is Invisible*, op. cit, 165.



Book augmented by the artwork **Gaps**
by Khaldoun Zreik, Rudy Rigoudy & Paradise Now



europia