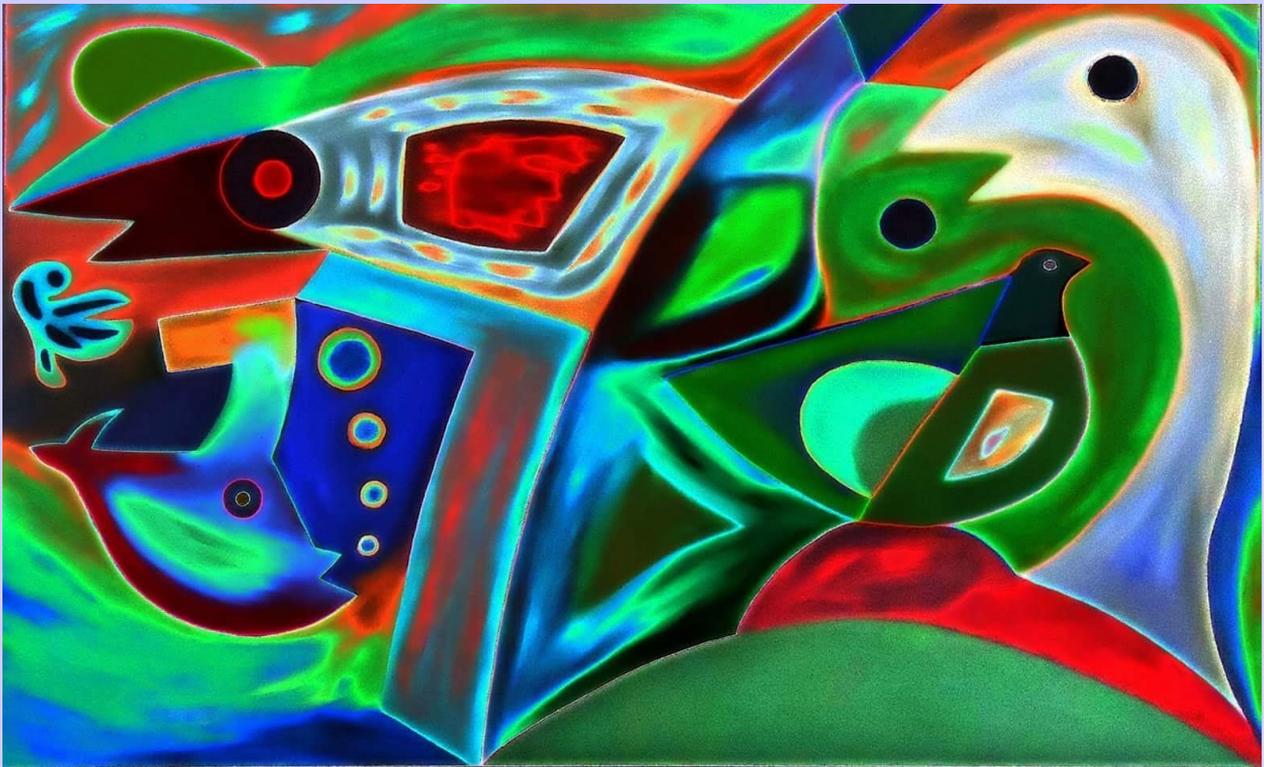


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Existing in Ethereum: The autographic ontology of the non-fungible token artwork

Elizabeth Kovacs

Institute of Certified Specialists

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Abstract. This paper examines the concept that legitimate autographic identity may be granted to digital images created as a non-fungible token (NFT). The blockchain technology coded permanently into minted NFT's keep track of the legitimacy of authorship and ownership, keeping them from being duplicated and removing them from the realm of allographic art. Questions arise of what 'legitimacy' and 'ownership' for a digital image—which are so easily reproduced and circulated—even look like. The main question that must be answered is whether the backend coding of a digital file is sufficient to alter its ontology into a token of one-of-a-kind autographic work, or if it only what is visible to the viewer of the image matters for its replicability and allographic ontological nature.

Keywords: Digital art, non-fungible token, blockchain technology, digital image, authorship, ownership, crypto art, digital artwork, allographic.

1. Introduction

The idea of authorship and ownership has been an important subject of discourse in the world of art and aesthetic theory for centuries, complicated by the introduction of the printing press and the ability to recreate two dimensional images with precision, ease, and anonymity. The creation of digital images further complicates this idea in several ways. A piece of digital art is immaterial, existing in an entirely different phenomenological realm than its creator or owner, creating a separation that is further distanced by the digital piece's complete and irreversible release into the realm of the 'world wide web' (www). Furthermore, a piece of digital art, like anything that can appear on a screen, exists as code and corresponding visual components made up of pixels or 'bits.' These can be copied, pasted, and 'owned'—or at least displayed—on any screen, to anyone with access, typically free of charge. These copies being visually indistinguishable and unable to be 'forged' (each copy is just as legitimate as the last) puts digital artwork into the allographic classification. However, given the recent attention to the apparent monetary value of certain digital works, it seems legitimate to question what exactly makes one iteration of potentially infinite digital copies special, meriting true transactions of valuable capital between artist and owner. In this paper, I will argue that legitimate autographic identity may be granted to digital images created as a non-fungible token (NFT). The block-chain technology coded permanently into minted NFTs keep track of legitimacy of authorship and ownership, removing them from the realm of allographic art. The coding intrinsic to the NFT file, distinguishing it from other types of digital image file a JPEG or PNG, make it a different kind of being than that which can be easily copied in the conventional way of downloading or saving the image. I will seek to analyze whether the backend coding of a digital file is sufficient to alter its ontology into a token of one-of-a-kind, autographic work, or if it only what is visible to the consumer of the image matters for its replicability and allographic ontological nature. To set up my argument, I will first compare the constituencies that make an artwork either autographic or

allographic, and demonstrate why digital images artworks are classified as allographic. Then, author will examine what makes an NFT unique from other, replicable digital images, as well as fungible tokens, and show how these distinctions transform these particular digital files into autographic art forms.

2. Traditional Autographic/Allographic Distinction

The systematic classification of allographic art began with Nelson Goodman, who is said to be the father of the term 'allographic' (Kovacs 2020, 47). The history of defining artworks as either autographic, meaning that an artist has created a particular work of art that is original and unique from other duplicates by the causal relationship of that particular object being created by that particular artist during the particular time that it was created, or allographic, meaning that the artwork is a particular notational representation that can be duplicated with authenticity as long as it is true to the original notation, was first critically examined by Goodman in his 1968 book *Languages of Art: An Approach to a Theory of Symbols*. In this book, he offers many explanations and qualifications of this distinction, the most succinct being, "Let us speak of a work as autographic if and only if the distinction between original and forgery of it is significant; or better, if and only if even the most exact duplication of it does not thereby count as genuine" [6]. This would indicate that created artworks that can be replicated with as much authenticity as the first instance of it would be considered allographic. Some common examples of this would be musical performances based off a notational score, or novels and other written works that are presented by a manuscript and adhere to the notational structure of its first instance.

The concept of notation, that allographic works are considered genuine if they adhere to a certain notational structure, is challenged when it comes to images and other visual works, which I will expound upon in a later section. But it is important to recognize that a work's identity largely relies on recognizability, which may be accepted to adhere to a notational structure even while permitting some differences. For example, consider written letters and words a type of allographic entity; they rely on visual recognition and adherence to a predetermined structure in order to be considered the letters and words that they are meant to be. However, they can look very different from each other based on different fonts, different handwriting styles, whether it is "drawn in the sand or scribbled in the margins of a book" [10]. Each word is considered genuine as long as it is recognized, and this kind of legitimacy becomes critical when considering images of varying sizes or visual quality that are still ultimately the same image.

The distinction provided by Goodman is typically accepted, although there are some contrary ideas such as those of Christy Mag Uidhir, who argues that artworks cannot be abstract entities, based on a strict ideology of the causal relationship between authors and artworks (Mag Uidhir 2013). These ideas from his book *Art and Art-Attempts* are successfully rebuked in Nurbay Irmak's recent paper *Authorship and Creation*, where he uses a "modal notion of ontological dependence that explains how abstract works of art depend on concrete objects, events, and authorial intentions for their existence" [7]. Irmak's rebuttals are reassuring that "obscure philosophical principles" need not be relied on to determine the relationship between the creator of an artwork, the artwork itself, and the work *being* art [7]. This is especially important when regarding digital images, which do not necessarily present themselves physically, and are typically not regarded in immediate relation with their creator. Further, digital images, which are certainly abstract objects by Mag Uidhir's definition, would be considered non-spatiotemporal entities that cannot ontologically stand in direct relation to their artists [7]. However, Mag Uidhir uses the word 'creation' equivocally, leading to the conclusion that pure abstracta cannot be created, rather

only 'discovered' (2021, 2-3). He contrasts this with 'concrete' works of art such as paintings and sculptures, where the 'agent' or artist can be said to "stand in a causal-intentional relationship with the work itself"—that is, the work existing concretely and the work being art (2).

Applied to my argument, the computer screen or optical fiber network would constitute the 'concretum' of the digital artwork and have a secondary relationship to the digital artwork itself, which is the image itself that was made by an artist. But although digital images may be considered abstracta, there is no doubt that they were made by somebody at some time, albeit through the medium of technological commands and actions that result in a visual entity existing on a screen, rather than the literal hands-on method of painting or sculpting. The relationship between creator and object is a nuanced one even in the most straightforward of cases, but author believe it has been successfully determined that digital artworks are at the very least a created entity that ontologically depended on their creator for their first instance of existence. Because of their unique type of existence and easily replicable nature, it is slightly more difficult to determine where they fall under the autographic/allographic distinction, but there is a clear case for them being classified as allographic.

3. Digital Images as Allographic Artworks

Digital images are allographic art works because they are phenomenologically identical in every instance that they occur properly. This is not to say that they only look the same; one could argue that a well-done photocopy of the Mona Lisa and the original work look the same as well. But they are not identical in every instance that they occur properly—the Mona Lisa only properly exists as a single painting that was created by Leonardo da Vinci in the year 1503. Digital artworks exist as a file format that produces visual stimuli on a physical screen, and can be downloaded, uploaded, saved, and be transferred between devices. There may be particular types of screens on which certain images occur most properly; for example, an image meant for a modern desktop computer screen would not occur properly on the screen of a Nokia phone. But without obscure outliers, *most* digital images can be represented on *most* screens identically, the same way the television section of an electronics store might display the same video across all of the television models.

The slight variations between identical digital images need not disqualify them from allography. Because they are not physical images, they rely almost entirely on their visual appearance for their identity. John Zeimbekis describes the allography of digital images despite possible slight differences from a strict notational structure in *Digital Pictures, Sampling, and Vagueness: The Ontology of Digital Pictures*. He says that digital images may be phenomenally identical, even with variations of certain objective properties such as light intensities, sizes and shapes that exist below sensory discrimination thresholds [10]. He elaborates on the discriminatory thresholds in a later paper, saying, "Pictures are designed by means—and convey information for end-user systems—that use finite discrimination capacities," that end-user system being human vision [11].

It is important to remember that this identity is still belonging to a digital image or artwork, which is created through the instrument of technology and exists within technology only. The relationship between the creator and the digital file is less important when there is nothing necessarily relating the two beyond its first creation. It may have been created by a specific person at a specific time in history, but the fact that it can be easily duplicated by anyone at any time thereafter refutes the argument that someone could carefully engineer a new, phenomenologically indistinguishable instance of a historical painting, as posed by Jason D'Cruz and P.D. Magnus in *Are Digital Images Allographic?* As they themselves say, "copies of a digital image are made by copying the file and displaying them on an appropriate device,

not by transcribing the displayed digital picture from the screen” [3]. Digital images in a copyable format are instantly removed from their creator once they are made, because the process of duplicating that exact image is a completely anonymous process that creates an identical copy without any of the process that went into creating the first instance.

Author has now demonstrated that the allographic nature of digital images relies not only on phenomenal identity and visual indistinguishability, but the ontology of the digital file itself—that is, a type of image that is created and exists in a format that can be anonymously copied and duplicated without compromising any part of the original image. A digital picture on any networking device can be sent, saved, copied, pasted, screen-captured, or otherwise replicated in a myriad of ways, maintaining an allographic classification despite minute differences in screen and color quality, and file size. These types of image files are instantly removed from their original context of creator, time and place by the ability to replicate them exactly by any person and any time and place. A digital image file that is able to keep its original context or ‘proof’ of having been specifically made by an artist or creator, such as a non-fungible token (NFT) would no longer have the same replicable ability as other digital images, removing them from the allographic classification.

4. A Case for Autographic Digital Images

In order to defend a case that certain tokens of an allographic type could stand out as autographic, principles intrinsic to the object beyond visual stimuli and replicability will have to be examined and shown to be distinct in a way that proves that “even the most exact duplication of it does not thereby count as genuine” [6]. Since duplicates of a digital image can be visually indistinguishable, the difference must lie in what is not seen—the file type or the “back-end” coding of the image object. A file with a permanent blockchain record such as an NFT are unable to be forged or duplicated. Exact duplications of the visual image do not count as genuine duplications of the NFT, because no other file will ever share the same unique coding and blockchain record.

The file coding of an image, although invisible to the viewer, is an intrinsic part and characteristic principle of the object. According to Goodman, the possibility of distinction even in principle between objects is an important consideration for a work’s being autographic [3]. A non-fungible token, as indicated by the term ‘non-fungible,’ is “not inherently interchangeable with other digital assets” (Chohan 2021, 1). This is an important distinction from other crypto-assets such as Bitcoin, which is ‘fungible’ in the sense that you can exchange one for another of the same value (2021, 2). However, that is not to say you could re-create or duplicate a Bitcoin to an infinite possibility of value. That’s because Bitcoin and NFTs use blockchain technology, where, after a verified transaction, “a new block is added to the existing blockchain, in a way that is permanent and unalterable” (Blockgeeks 2021). The permanent and unalterable characteristic of these digital objects results from the same process that makes it nearly impossible to forge or hack: a ‘decentralized system’ of computers that create the network that is secured by mathematical functions or ‘hash functions’ (Chevet 2018 ,9). The Bitcoin blockchain network is just one example of secure, decentralized blockchain systems. Another example is Ethereum, with which NFTs are created.

Both fungible and non-fungible tokens have traceable authenticity with the blockchain, but authenticity is not enough to prove that NFTs can be autographic rather than allographic in nature. For example, certain NFTs are created as a part of a series, where there may be a finite number of a specific token available for purchase. Each token of this kind, while authenticated on the blockchain with what is essentially a digital signature from the creator and a unique proof of ownership for the buyer (Chevet 2018, 33), would still be classified as allographic the same way that several

prints made from the same printing block are authentic but allographic. While acknowledging that allographic NFTs are possible in the case of a limited-edition series, this paper focuses rather on single-edition NFTs that are autographic in their unique nature, ontologically separating them from other digital images.

Single-edition NFTs, also called 'one-off editions' or 'standalone works,' are considered unique works of art [8]. Just like physical artworks with proven authenticity, they have scarcity and monetary value, and can be purchased at demand-driven prices the way any other rare and desirable collectible assets can be. Perhaps the most noted example would be *EVERYDAYS: THE FIRST 5000 DAYS* created by Mike Winkelmann; an artist known as Beeple. The work, over ten years in the making, was minted on February 16, 2021, and sold at a Christie's auction for 69,346,250 United States dollars on March 11, 2021 [2]. This is one strong indication that NFTs are autographic digital assets—they have scarcity and value whereas a JPG or PNG file of the same image would not. In addition to those that have gathered attention for the high price at which they were sold, there are countless other single-edition NFTs that become autographic by the process of being minted.

Minting an NFT is the process of turning a digital image into 'crypto-art,' where it gets a unique ID, a digital contract, which acts as its certificate of authenticity. NFTs are created through the Ethereum blockchain, which alters the digital coding of the file into a traceable ID that will keep track of every transaction of the work on a public digital ledger. This ID is permanently linked with the artwork, henceforth changing its ontology from replicable, allographic image to unique, autographic artwork. There are no two in the world that are alike, as "the artwork becomes part of the ID and the ID becomes part of the artwork. 'They are one in the same'" [5]. This hylomorphic view of the artwork and its relationship to the blockchain demonstrates that, as a unified object, the NFT is set apart from other visually identical tokens by means of the coding that permanently holds the record of provenance, the artist's digital signature and every transaction the work has gone through since being minted. As Zeimbekis said of the ontology of digital pictures, "any defense of the value of certain tokens over others [...] would have to restrict itself to pointing out differences in the historical properties of distinct tokens, since each copy would token exactly the same representational properties" [10]. The work keeps track of its own history, the record being built into it as it progresses. Therefore, the NFT cannot be replicated in any way that would count as genuine because no two could ever share the same blockchain ID. It is impossible to forge the authenticity of ownership that is automatically and permanently written into the object with each transaction, as well as the artist's signature that is an intrinsic part of the digital makeup of the artwork.

5. Conclusion

Digital art has been classified as allographic by criteria set by the initial indicator of an allographic/autographic distinction, Nelson Goodman. This classification since has been analyzed and verified by a number of scholars in the twenty-first century. Essentially, what makes an artwork or type of artwork to be allographic is that meets the criteria for authenticity through representational correctness, as well as a historical tie to the original creator. Replications that fit the criteria count as genuine versions of the work.

Digital images are classified as allographic because they are able to be reproduced and remain phenomenologically identical, and digital images have little to no tie to their original creator because they typically have an infinite capacity for copy and distribution in the digital realm. The specific file type plays an important role of the allographic nature of digital images, seeing that a JPG file can be copied and exist as a completely identical JPG file. If the file was of an artwork, there would then be two identical, genuine JPG files of the artwork. However, crypto-artworks existing as

an NFT cannot be copied or duplicated. Different file versions of the visual image may be copied, but that would not count as a genuine version of the NFT. NFTs exist on a blockchain, which gives them a unique digital existence that impossible to replicate, forge, or change. The blockchain coding, which is intrinsic to the artwork object, acts as proof of authenticity from the creator as well as a certificate of genuine ownership to the person who purchases the work.

The blockchain makeup of the NFT artwork makes it ontologically different from other digital artwork in that it can only exist autographically, as it can never be copied or duplicated in a genuine way. Each transaction of ownership is written permanently into the blockchain. So, just like images of well-known masterpieces, anybody is able to view what it looks like, but there is only one genuine version and it is owned by a particular entity. NFTs are therefore genuine, unique, and autographic digital artworks.

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Aims and Objectives

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Publisher

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Email: conf@ics.events

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