

# Media Archaeology and Reproduction History: The Technological Prehistory of Sora

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## ABSTRACT

With the advent of Sora, an AI video generation model, the representational capacity of image media has reached an unprecedented height. This study, grounded in the perspective of media archaeology, explores the historical evolutionary logic shifting from traditional optical media to modern digital media—represented by Sora technology—and reveals the profound transformation of human perception and the concept of "reality" underlying these technological shifts. Employing both media archaeology and phenomenological analysis, this paper systematically outlines the developmental trajectory from 19th-century camera obscura and the birth of photography to the film industry, digital technology, and ultimately generative artificial intelligence. Throughout this process, the evolution of media has undergone a transition from the "mental reconstruction of reality" to the "mechanical reproduction of reality", and finally to the "digital simulation of reality." Photography and early visual devices, such as the diorama, initiated the mediatization of reality by severing the necessary link between space and physical entities, while digital technology further quantified bodily perception into data, allowing signs and simulacra to begin replacing direct experience. The emergence of Sora marks a qualitative leap in media evolution: it is no longer merely an imitation or "representation" of reality, but a further abstraction and reconstruction of representation itself based on digital logic, creating a virtual reality layer independent of the material world. This process deepens the prophecies of Debord's "Society of the Spectacle" and Baudrillard's "Hyperreality," touching upon the metaphysical core of "what is real." The history from the camera obscura to Sora is not only a history of technological progress but a history of the construction of reality—how it is mediatized, symbolized, and eventually superseded—providing an essential philosophical framework for understanding existential experience in the age of artificial intelligence.

**Keywords:** *Sora, World model, Artificial intelligence, Media archaeology.*

## 1. INTRODUCTION

On February 15, 2024, Open AI (United States Open Artificial Intelligence Research Center) released a video generation model Sora, which demonstrates how the technology can simulate human cognition and creativity through a large amount of data training. The basic form of SORA: Generate highly simulated intent images and videos through input text language, which is a further derivation of Chat GPT technology. Therefore, Sora is also defined as a "world simulator". It is worth noting that this definition implies a techno-ethical tendency to admit Plato's hypothesis of "metaphor" or to consider human autonomy to be a "brain in a jar". In this way, the technology not only

faces the reflexive criticism of the overproliferation of modern technology, but also touches on the re-evaluation of the subjectivity of human beings in the digital world. In addition, the widespread application of Sora in the future may also lead to changes in the attributes of traditional media, making the media more inclined to representation rather than reflecting reality. This paper attempts to explore the above issues from multiple dimensions such as the media development history, technological architecture and generation mechanism of Sora, and the subjective status of postmodern humans, and makes media archaeology and ontological conjectures on Sora technology when it is not yet popular, so as to create more possibilities for Sora technology in the future.

## 2. DARKROOM AND REPRODUCTION

According to E.H. Gombrich, the history of art's evolution is a history of human corrections to the representation of reality. Its practice of viewing is rooted in the isomorphism of Gestalt psychology: the conceptual object always takes precedence over the perceived object, as the "impurity" of the physical eye in its attempt to govern reality inevitably encounters the reconstruction of the mind. While Cartesian perspectivalism maintains that the viewpoint is the sole benchmark for determining an object's position and spatial dimensions.[1]p30 Distrust of perspective began to spread as early as the Renaissance. Works such as Cossa's snail[2] and Titian's Madonnas[3]p165 challenged the authority of perspective. According to Erwin Panofsky's research, an eye following the conventions of perspective is far from a "correct" visual experience; it can only be a process of representation involving mental intuition. In short, the image is tethered to the "mind's eye." It is within this context that Michel Foucault described the episteme from the Enlightenment to the Second Industrial Revolution as "Representation".

The suspicion toward "representation" erupted with the birth of photography. For the first time, photography exposed the a priori and hidden distribution mechanisms within painting, negating the formula that "representation equals reality". Simultaneously, the mechanical eye replaced the human eye, implementing Auguste Comte's positivist ideals. The expansion of camera obscura technology triggered a fierce confrontation between 19th-century photography and painting; with painters' livelihoods at stake, Gombrich even declared that "photography destroyed painting." At the dawn of photography, Louis Daguerre—seeking to prove that photographs were not paintings—used a magnifying glass to demonstrate that the realistic details of a photo were far beyond the reach of painting. By benchmarking objective reality against mental intuition, this move played right into the hands of 19th-century artists. The avant-garde figure Charles Baudelaire led the charge, criticizing, questioning, and even cursing photography for "kidnapping" and mass-producing art. His motive was nothing less than resentment toward the disintegration of art's "representative" function (decades later, his successor Walter Benjamin would write the famous essay *The Work of Art in the Age of Its Technological Reproducibility*,

advocating that photography actually aids the dissemination of artworks).

Photography reveals the optical unconscious, just as psychoanalysis reveals the instinctual unconscious.[4]p120 Perceived visual experience is swiftly filled by acquired intentionality; while it seemingly observes reality, it is, in fact, surreptitiously tampering with it. Shortly after the birth of photography (the 1850s), American photographer William Mumler began taking "spirit photographs" in Boston and New York, claiming the ability to photograph people with their deceased relatives. At that time, the United States was suffering heavy casualties from the Civil War, and people hoped to catch a glimpse of their lost loved ones through photography, causing spirit photography to become immensely popular. In reality, such photographic techniques merely utilized double exposure, overlaying different portraits. People then could hardly have imagined that today, a century later, Sora technology could easily replicate and produce moving images of deceased relatives. From this perspective, spirit photography and Sora-generated imagery share a metaphysical similarity: both represent a desire for delusion to displace the "having-been-there" (in Roland Barthes' terms) of reality. The hidden relationship between photography and image-correction techniques suggests that media technology continues to colonize the real world through "representation." Regarding this, D.H. Lawrence once implied that "photography is not faithful to reality, but rather, not faithful enough."

One of the physiological prerequisites for the birth of cinema was the discovery of the principle of persistence of vision, which enabled technology to capture the fleeting afterimages of the naked eye. This stage led to the proliferation of a specific visual apparatus: the diorama (or peep-show devices). Historical accounts regarding the exact birth of the diorama vary; Walter Benjamin's dating places it "not earlier than the nineteenth century, around the time Daguerre introduced the Panorama in Paris in 1822." [5] The principle of the diorama apparatus involved manually placing images inside a movable dark box equipped with a rotating handle and a music device. Small holes were opened on the exterior of the box, through which viewers would look while turning the handle to watch different images. By the end of the nineteenth century, this technology gradually evolved into the Kaiserpanorama (Imperial Panorama). In Benjamin's description, the effect was similar to today's 3D

movies; more importantly, the greater the number of images the diorama held, the closer it came to creating the visual effects of cinema. From a technical perspective, the diorama differed from the panorama booth by severing the link between space and reality while simultaneously reconstructing the viewer's locative experience, serving as an early form of the spatial practice found in Sora technology. The diorama produced an external space and fostered a subjective illusion: the former was quickly abandoned by the public (evolving a century later into Sora's image generation technology), while the latter was swiftly inherited by the burgeoning film industry.

### 3. IMAGE, FICTION AND TIME

In 1895, the cinema was born. The Lumière brothers intended to continue pursuing the positivist ideal by fulfilling the documentary function of photography, only to be quickly phased out by the market. In contrast, the business of Georges Méliès—a "copycat" student and magician—thrived (the copies of his 1902 film *A Trip to the Moon* were priced at 1,500 francs). Méliès's cinematic practice was not inherently complex; he utilized stop-motion (stop-trick) and basic magic techniques to achieve special effects shots, yet for the public at the time, this was sufficiently marvelous. The first confrontation between "reality" and "virtuality" in film ended in a crushing defeat for the former. Robert Flaherty, the "father of documentary," learned from this lesson; his masterpiece, *Nanook of the North*, featured a scripted plot and cast actors, yet it was hailed as the first documentary in film history. The opening of Dziga Vertov's *Kino-Pravda* ("Film Truth") depicts a giant eye staring through a lens, greedily glancing left and right—peering at all images visible to the naked eye, arbitrarily cutting reality, and artificially arranging it to propagate official ideology. Walter Benjamin greatly admired Vertov's documentaries and wrote in support of Soviet art, famously defining it as the "politicization of aesthetics."

The antinomy of documentary (fiction versus reality) became a focal point of contention in Western academia during the 1960s, leading to incessant intellectual disputes between the Bazin school, which believed in "reality," and the Metz school, which supported "fiction." Utilizing the fundamental principles of phenomenology supplemented by psychoanalytic elements, Bazin concocted the "mummy complex," attempting to prove that the purpose of cinema lies in preserving

or restoring reality. He firmly believed: "The objectivity of photography confers on the image a power of conviction that is absent from any painting. Whatever the objections of our critical spirit, we are forced to believe in the existence of the object reproduced, actually re-presented, set before us, that is to say, in time and space." [6]<sup>p11</sup> During the same period, various minor cinematic movements, such as *cinéma vérité* and *Direct Cinema*, emerged in North America and Italy. Invoking the name of Vertov, they claimed their filming was definitively "true" and inevitably "real." This cinematic epistemology formed a strange graft with Comtean positivism ("observation is the only possible basis of the various branches of knowledge which are truly accessible and suited to our real wants" [7]<sup>p9</sup>) demonstrating an obsessive pursuit of the equivalence between the visibility and the enunciability of the image. Bazin's understanding of phenomenology was confined to "reduction" while neglecting the "transcendental." The development of the transcendental concept moved from Kant to Husserl. Kant's transcendental aim was to resolve the contradiction between the cognitive subject and the cognitive object: "I entitle all knowledge transcendental which is occupied not so much with objects as with the mode of our knowledge of objects in so far as this mode of knowledge is to be possible a priori." [8]<sup>p44</sup> Husserl, however, criticized Kant for psychologizing the transcendental concept (pure apperception), which prevented it from breaking through the empirical level. The fundamental principle of phenomenology, *epoché* (bracketing), requires that "we put out of action the general positing which belongs to the essence of the natural attitude; we parenthesize everything which that positing encompasses with respect to being." [9]<sup>p97</sup> According to phenomenological principles, it must be admitted that the non-self-subsistent nature of the lens cannot be viewed from a "transcendental" perspective. Reduction in the phenomenological dimension is built upon the dismantling of a posteriori empirical constructions, whereas the existence of the lens relies entirely on a trust in a posteriori experience and is influenced by Gestalt psychology. In short, the lens still covertly participates in "fiction".

Time is the third dimension of a photograph... an image lacking this dimension cannot truly be a photograph." [10]<sup>p178</sup> Both Siegfried Kracauer and Roland Barthes discussed the dialectical relationship between imagery and time, both beginning their analyses with photographs of loved

ones to critique photography's encroachment upon memory and time. Kracauer discovered that memory itself is a fragment filled with fissures; the human brain struggles to simultaneously preserve the progression of both time and space. Consequently, memory wanders aimlessly, awaiting the arrival of intentionality and permeated by the assembly of personal experience. Photography, however, brutally records reality and shreds the events in the human brain that have been filled by intentionality. Because assigned meaning cannot be reduced to pure spatial or temporal connections, memory-images and photographic representations cannot coincide.[11]<sup>p24</sup> Kracauer concluded: "From the perspective of photography, memory-images appear as a heap of fragments—they look like fragments only because photography does not take seriously the meaning to which they refer, and it is precisely because of this meaning that they are not reduced to fragments. Similarly, from the perspective of memory, a photograph appears as a mixture composed of a pile of refuse." [12]<sup>p24</sup> In the process of contemplating photographs of his mother, Barthes discovered that the essence of photography lies in time; it is the evidence of the "having-been-there." As evidence of an event, it tampers with our own memory of the past. At the very moment a photograph is born, the subject captured has already vanished: "Whatever happens within the frame, once it enters the frame, is absolutely gone." [13] How, then, can that then-and-there exist in this here-and-now? Barthes believed this to be true metaphysics.

A few years after Barthes' death, Lucasfilm released its representative work, *Star Wars*. As a film series that eventually leaned into being constructed entirely through digital imaging technology, Lucas famously claimed that there was no image they could not synthesize. All of this was unfortunately foreseen by Plato, who was perhaps history's first image critic; the confrontation between representation and reality, and between the authentic and the illusory, finally met its end with the sudden emergence of digital technology.

#### 4. DIGITAL AND PERCEPTION

The birth of photography terminated the visual mechanism established around camera obscura optics since the Renaissance, just as the advent of digital technology ended the fundamental principles of representation inherent in modern photography. The former was manifested in the "disruption of the inseparable relationship between the observer and

the camera obscura" [14]<sup>p203</sup> while the latter directly negates the physical existence upon which photographic principles depend, even triggering a rupture between language and reality. According to Jonathan Crary's research, the transition from the camera obscura to photography was not only a change in the behavior of the observing subject but also a disciplining of the subject itself. Drawing on Foucault, the timeline of photography's birth coincides with the historical shift of the second "episteme". Regarding the three dimensions necessary for an epistemic shift—linguistics, physiology, and political economy—Crary emphasizes physiology. This is reflected in the 19th-century scientific experiments that utilized empirical measurement to quantify various sensory experiences of bodily perception (such as Fechner's experiments). Measurability implies enunciability; bodily perception was inadvertently fragmented into various sets of data. This epistemology did not lose its validity with the popularization of new technologies; rather, it was swiftly inherited by digital imaging technology. Consequently, the physical entity itself is no longer paramount; what matters are the data and codes, which can precisely locate and capture the fleeting intentional images of the subject. In the present era, the representative term for this technology is "Sora".

As early as the mid-19th century, Baudelaire keenly foresaw how the rise of photography and other visual media would fundamentally alter our perception and understanding of reality. His assertion that "the entire visible universe is but a storehouse of images and signs". Not only predicted the trajectory of subsequent media theory but also profoundly pointed toward the process by which reality itself was about to be mediatized. Following the theoretical developments of Heidegger, Debord, Baudrillard, and others, this mediatized reality further reveals the profound invasion and transformation of reality by images and signs in modern society. Particularly in Guy Debord's theory of the Society of the Spectacle, media is not merely a tool for blurring reality but constructs an entirely new, spectacularized social reality—a reality that is, in essence, a representation of consumerist culture. Jean Baudrillard further emphasized through his theory of hyperreality that in a media-saturated society, signs and simulacra replace reality; reality is no longer an object of direct experience but is constructed indirectly through systems of signs. Sora, as a new stage in media evolution, represents a fundamental shift that lies not only in its re-representation of reality but,

more importantly, in its further abstraction and reconstruction of representation itself. Sora is not merely an imitation or reproduction of reality; it is creating an entirely new plane of reality that exists independently of the material world. On this level, Sora aims to construct a reality that can be defined entirely by digital logic and virtual interaction—a reality that, in its design and intent, seeks to transcend and replace the empirical reality of the physical world.

This reconstruction and replacement of reality do not merely demonstrate the capabilities of technological progress; they touch upon profound philosophical and metaphysical questions: What constitutes reality? In a world constantly reshaped and defined by media, what is the essence of the "real"? The emergence of Sora brings this discussion into a new dimension—it is no longer about the representation or imitation of reality, but a fundamental reconstruction of the concept of reality itself.

Therefore, the developmental trajectory from the camera obscura to Sora reflects more than just the advancement of technology and media; it reveals a profound and complex restructuring of the relationship between reality, truth, and representation in modern society. In this process, media has not only altered how we perceive the external world but has fundamentally influenced the conceptual frameworks through which we understand reality, existence, and even self-cognition. From the camera obscura, photography, the diorama, and cinema, to digital technology, GPT, and finally Sora, the invasion of reality by media has intensified step by step. If the representations of media prior to Sora aimed to covet or blur reality, then the objective of Sora is the representation of representation itself—it seeks to supersede and become reality.

## 5. CONCLUSION

"Modernity is transitional, fleeting, and contingent; it is half of art, the other half being the eternal and unchanging." In Baudelaire's allegory, we can glimpse his vague definition of the modern experience: evanescent and eternal. This notion still provides insights into the ontological speculation of Sora today. The technology of Sora shakes the long-standing mechanism between the "visible" and the "articulable", bringing an end to the metaphysical foundations established since Ancient Greece (the belief that what is "seen" can lead to what is "said"). "Visible" means the potential for

correct viewing, which during the Renaissance and the Enlightenment was a black box, in the 19th century it was photography, in the 20th century it was the sound film, and today it is Sora's generative technology. "Articulable" means the ability to interpret the world visible to the naked eye. In Plato's time, it was the realm of ideals; during the Scholastic period, it was God; in Descartes' era, it was the mind; in the 20th century, it was language; and today, "articulable" is code.

The advent of Sora announces a disruptive ethical fact: all knowledge, language, experience, and even "humans" as historical subjects are fleeting, while technology remains eternal and unchanging.

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