



Camera Archaeologia: A Media Archaeological Investigation into the Contemporary Use of Nineteenth-Century Photographic Processes

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As digital technologies determine the practice and experience of everyday life today, the earliest photochemical processes resurface to provide stimulating and provocative modes for visual production. Around the world, a small but attention-worthy number of photographers attempt to rediscover what nineteenth-century photographic processes can offer without turning their backs on digital. From a media archaeological perspective, this article investigates how such a phenomenon challenges linear technological progress narratives by disrupting binary divides between old/new, outdated/contemporary, and analogue/digital. Through interviews with seven Turkey-based photographers who use nineteenth-century photochemical processes, I argue that the contemporary use of the earliest photographic techniques functions as compensation methods for limitations imposed by dominant photographic technologies and culture. By combining alternative forms of photographic expression from the past that are often considered obsolete with digital methods, this article explores ‘chemical bending’ tactics – technical and temporal hybrids formed to enhance creative freedom and expand the contemporary roles attributed to photography. Contemporary photographers, deeply embedded in digital culture yet drawn to the earliest photochemical techniques, create novel meanings and roles for photographic processes. Ephemeral images become metaphors for life’s impermanence; unexpected outcomes express the collaborative creation process with the medium itself; while the material qualities of these practices help restore diminished human sensory experiences in the digital age.



Somewhere in Istanbul, 2015.¹

A curious crowd gathers around a suspicious object: an aluminium can wrapped with duct tape. The police move the crowd away and, with a controlled explosion, dispose of the object. From the remains, fingerprints of a potential suspect are discovered. The suspect is called in to testify and it is revealed that the object was a makeshift pinhole camera placed there by the photographer Aydın Berk Bilgin.²

When Bilgin shared this anecdote of his literally disposable (or forcefully disposed of) camera in a conversation with Tomáš Hetmánek, I imagined this was how the incident had unfolded.³ It was one of Bilgin's many cameras cobbled together around the city to make long exposure solargrams. As a result of the growing collective anxiety throughout Turkey after several bomb attacks spanning from 2015 to 2016, one of these simple apparatuses — a silver gelatin paper inside a sealed beer can with only a tiny hole for light entry — was perceived of as a dangerous object placed in a public space with malicious intentions.

Photography's identity as a visual object, social phenomenon, and technological tool was never uniform throughout its history. With the introduction of each technical process and social condition, novel roles and uses were invented for photographic practice. Especially in its early years, numerous photographic processes with diverse characteristics offered distinct ways for visual production. Such diversity never left photography but became increasingly challenging to notice as photographic practice was confined to mainstream apparatuses and approaches that favour immediacy, standardization, and commercialization.

Today, in the age of image abundance, snapshot photography, and machine learning, some of the earliest photochemical processes are resurfacing and gaining contemporary roles and meanings. However, as was the case with Bilgin, practising the unknown or the marginal, combined with a turbulent political, economic, or social backdrop, may be quite challenging. With a media archaeological perspective,

¹ I would like to thank Ayşe Nilden Aksoy, Aydın Berk Bilgin, Burcu Böcekler, Tomáš Hetmánek, Ergül Karagözoğlu, Murat Sarıyar, and Kerim Suner for their valuable insights that informed this research. I extend my appreciation to Andreas Treske for his help during the writing of the thesis from which this article is derived, to Timothy Druckrey for his thoughtful comments on an early draft, and to Gülru Çakmak and Patricia Smyth for their constructive communication throughout the pre-publication process.

² Aydın Berk Bilgin (b. 1984) is an Istanbul-based visual artist. Bilgin works with pinhole cameras, salt print, solargraphy, paper negative, and wet-plate collodion. He completed his higher education in photography with a focus on alternative processes and pinhole photography. He has been working with chemical-based photography since the early 2000s. See <<https://www.aydinberkbilgin.com/>> [accessed 12 August 2025].

³ Tomáš Hetmánek in conversation with Aydın Berk Bilgin, 'Kimyasal Muhabbetler: Splendor Solis', Instagram, 24 March 2021 <https://www.instagram.com/reel/CMOLzy_guF5/> [accessed 12 August 2025].

this research attempts to highlight a set of marginal photographic practices that demonstrate ‘discontent with “canonized” narratives of media culture and history’.⁴ The artist statements investigated here attempt to demonstrate why some contemporary photographers are interested in seemingly redundant methods of image-making and how their practice can challenge the narrative of linear technological progress.

Archaeology of discontinuities

In their respective works, critics André Bazin and Peter Galassi attempted to trace photography’s ontological roots back to the Western pictorial tradition as photography’s visual properties seemed to be faithful to Renaissance-based linear perspective. For Bazin, plastic arts handed over the burden of depicting reality to photography.⁵ He argued for an uninterrupted continuity which linked the Western tradition of plastic arts to photography and cinema, while Galassi explained his objective was ‘to show that photography was not a bastard left by science on the doorstep of art, but a legitimate child of the Western pictorial tradition’.⁶ According to a non-normative way of interpreting history, such as media archaeology, Bazin’s and Galassi’s approaches exemplify a fundamental problem.

Their deterministic perspective tends to turn historiography into the writing of hegemonic structures. Since this perspective depends on causality and creating a sense of continuity, it gravitates towards focusing on dominant systems that seem to take place successively in the course of history, leaving no room for discontinuities. Focusing on dominant tools, practices, and discourses to create a sense of historical continuity frequently rules out the significance of dead ends, failures, and marginal alternatives. A similar line of thought in the history of technology assumes constant progress and development, as if old technologies and understandings only function as stepping stones for arriving at recent ones. In line with this view, new technologies are greeted with great enthusiasm and interest, while old ones are pushed to the corner as if they are the archaic versions that offer no contemporary use.⁷

⁴ Erkki Huhtamo and Jussi Parikka, ‘Introduction: An Archaeology of Media Archaeology’, in *Media Archaeology: Approaches, Applications, and Implications*, ed. by Erkki Huhtamo and Jussi Parikka (University of California Press, 2011), pp. 1–23 (p. 3).

⁵ André Bazin, ‘The Ontology of the Photographic Image’, trans. by Hugh Gray, *Film Quarterly*, 13.4 (1960), pp. 4–9 (p. 7), doi:[10.2307/1210183](https://doi.org/10.2307/1210183).

⁶ Peter Galassi, *Before Photography: Painting and the Invention of Photography* (The Museum of Modern Art, 1981), p. 12 <https://assets.moma.org/documents/moma_catalogue_2267_300296442.pdf> [accessed 12 August 2025].

⁷ Bruce Sterling, ‘Media Paleontology’, in *Book of Imaginary Media: Excavating the Dream of the Ultimate Communication Medium*, ed. by Eric Kluitenberg (Debalie and NAI, 2006), pp. 56–73 (p. 63).

Like Bazin's and Galassi's crowning of photography as the direct heir of the Western pictorial tradition, progress-driven historiography has dominated scholarship on European visual culture for a long time.⁸ Instead of searching for inevitable links and overarching grand narratives, embracing the significance of variations, discontinuities, and coexistences could help us approach history from an alternative perspective that is free from imperative trends.⁹

This article looks at alternative photographic practices that are overshadowed by mainstream ones and left out of the contemporary photographic discourse. Today, the earliest photochemical processes are resurfacing across the world as part of artistic practices. I argue that while contemporary photographic technologies offer certain conveniences, they also impose restrictions on their users and tend to cause frustration. These restrictions and frustrations can be resolved through alternative approaches, those deemed obsolete by linear progress-driven narratives.

Artisans to shutter-releasers

Nineteenth-century photographic processes are diverse in their characteristics. Daguerreotypes (1839) are irreproducible, fine-detailed images on reflective copper plates.¹⁰ Calotypes (1841) are negatives on paper that lack the sharpness of daguerreotypes but can be reproduced with the help of the salted paper process (1839). Collodion wet-plate (1851) and gelatin dry-plate (1871) processes, which were often used in tandem with the albumen printing process (1847), combine reproducibility with fine details. Cyanotype (1842) produces blue-toned prints, while Van Dyke brown (1889) creates brown-toned images. Anthotype (1839) is used for making ephemeral prints in various colours from the extracts of fruits, plant leaves, petals, and roots. These are some of the earlier photochemical processes we can witness being practised today.

Despite their distinct properties, these processes demonstrate similarities in the ways they are practised. Primarily, they are technical processes that require adequate knowledge of chemicals as well as of the properties of light. Moreover, they do not rely on mass production and fabrication. With the necessary chemicals, equipment, and knowledge, each process can be practised by individuals on a small scale. They demand a great deal of preparation, experimentation, attention, and patience to produce even

⁸ Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (MIT Press, 1990), pp. 3–4, 13, 31–32.

⁹ Siegfried Zielinski, *Deep Time of the Media: Towards an Archaeology of Hearing and Seeing by Technical Means*, trans. by Gloria Custance (MIT Press, 2006), p. 7.

¹⁰ Dates in parentheses indicate the years of official introduction while actual histories of each process predate these points.

a single image. Thus, in its early decades, photographic production was undertaken by specialized artisans and over-dedicated individuals while photographs were consumed by everyday people, usually in the form of commercial portraits, *cartes de visite*, and stereoscopic views.¹¹

The period between the 1880s and 1910s is often described as the coming-of-age years of photography.¹² The Eastman Dry Plate and Film Company's introduction of the Kodak camera in 1888 can be seen as a breaking point. Increased light sensitivity of chemicals and the introduction of flexible nitrocellulose film made it possible to fit a hundred ready-to-expose frames in a lightweight handheld camera.¹³ This freed the average person from worrying about the chemical and optical complexities of the process, while significantly accelerating the production, distribution, and consumption of photographs. From that point on, photography's dependency on mass production became an inherent feature.

With the Kodak advertisement slogan 'You press the button, — we do the rest' (Fig. 1), it was clearly communicated that this new apparatus was there to create specific user and consumer behaviours. The photographer did not need to be an artisan who knew extensively about the technicalities of the process anymore; it was sufficient to be an ordinary person with no technical insight. This created an imbalance between two distinct



Fig. 1: Kodak Camera advertisement appeared in the first issue of the *Photographic Herald and Amateur Sportsman*, November 1889. Currently held at the George Eastman Museum, Rochester, NY.

¹¹ From the 1850s to 1880s both stereoscope and stereoscopic views were quite popular everyday objects and their sales reached 'dizzying' amounts. See Rosalind Krauss, 'Photography's Discursive Spaces: Landscape/View', *Art Journal*, 42.4 (1982), pp. 311–19 (p. 314), doi:[10.2307/776691](https://doi.org/10.2307/776691).

¹² Sarah Greenough and others, *On the Art of Fixing a Shadow: One Hundred and Fifty Years of Photography* (Bulfinch Press, 1989), p. 129.

¹³ 'George Eastman', Kodak Company, n.d. <<https://www.kodak.com/en/company/page/george-eastman-history>> [accessed 12 August 2025].

phases of photography: its creation and reception. The process of *making* the photograph has been transformed into *taking* it, shifting the attention mostly to the output image.

Kodak's premise from 1888 is still the way most photographs are being produced today.¹⁴ People press the button on their smartphones and digital cameras while automated presets and software do the rest for them.¹⁵ While the ability to produce photographs without any technical knowledge and skill can arguably be a step towards the democratization of the medium, it proved to be problematic for those who seek to work against the apparatus instead of embracing the role of a simple shutter-releaser while cameras increasingly turn into black boxes.¹⁶ Those who wish to dissect and scrutinize the process instead of consuming it as a simplified pill have turned to the past for a solution. Because of the discursive and practical convergence between the Kodak camera and the common contemporary photographic understanding today, I narrow my focus to contemporary photographers who practise processes either conceived before Kodak or later photochemical variations of those processes that carry strong do-it-yourself characteristics.

Circuit bending, which refers to the creative and experimental modification of electronic circuits, has become a noteworthy practice against black-boxed technology. Inspired by this concept, I offer the term *chemical bending*, which refers to the creative use of photochemical processes in dialogue with media across disciplines and understandings. In line with Garnet Hertz and Jussi Parikka's suggestion that 'media never dies' but lies in wait to be rediscovered, chemical bending signifies the reappropriation of previously disregarded or undesired aspects of photochemical media into desired, valued, and embraced features in the contemporary context.¹⁷

For instance, the unstable and unpredictable nature of the earliest photochemical processes makes accidental aesthetics a valued aspect of experimental photography in the age of standard and precise digital imagery. As Ergül Karagözoğlu suggests, processes such as cyanotype, anthotype, chlorophyll print, gum bichromate, and Van Dyke brown introduce serendipity to the process with their semi-controllable nature, to the extent of claiming co-authorship over the image:

¹⁴ Marita Sturken, 'Advertising and the Rise of Amateur Photography: From Kodak and Polaroid to the Digital Image', *Advertising & Society Quarterly*, 18.3 (2017), doi:[10.1353/asr.2017.0021](https://doi.org/10.1353/asr.2017.0021).

¹⁵ Generative artificial intelligence technologies introduce another discussion thread related to image economy and on-demand production that I will refrain to discuss within the framework of this article.

¹⁶ Vilém Flusser valued the elaborated act of photography over snapshotting. For Flusser, informative photographs were created only when the photographer tried to work against the imposed ways of the apparatus. See Vilém Flusser, *Towards a Philosophy of Photography*, trans. by Anthony Mathews (Reaktion, 2000).

¹⁷ Garnet Hertz and Jussi Parikka, 'Zombie Media: Circuit Bending Media Archaeology into an Art Method', *Leonardo*, 45.5 (2012), pp. 424–30 (p. 430), doi:[10.1162/leon_a_00438](https://doi.org/10.1162/leon_a_00438).

The process is under control until a certain point, then it slips through your fingers. It's not entirely left to chance, yet you can only guess what will happen next. Even when working with familiar materials, the outcome can surprise you. Each attempt feels like a new experiment rather than a repetition.¹⁸

Coincidence and accidentality are central to Tomáš Hetmánek's practice, where he deliberately creates 'an area of uncontrollability'.¹⁹ The mordantage process allows him to balance his artistic intentions with medium-specific accidents.²⁰ This technique involves manipulating silver gelatin prints through bleaching and etching. First, the image is bleached in a mordantage solution — a mix of water, hydrogen peroxide, copper chloride, and glacial acetic acid — which causes the gelatin to soften and for the darkest areas of the image to lift from the paper surface. Once the image is redeveloped, the lifted emulsion can be roughly repositioned, introducing a surreal, veil-like quality to the photograph (Fig. 2).



Fig. 2: Tomáš Hetmánek, *The Meeting* (2021), mordantage from gelatin silver print, paper negative. Courtesy of the artist.

¹⁸ Ergül Karagözoğlu (b. 1981) is a Bodrum-based visual artist who works with cyanotype, anthotype, chlorophyll print, gum bichromate, Van Dyke brown, lumen print, and salt print. She completed her master's degree focusing on randomness and serendipity in nineteenth-century photographic processes. She began using nineteenth-century processes in 2014. See <<http://www.elykara.com/>> [accessed 12 August 2025].

¹⁹ Tomáš Hetmánek (b. 1982) is an Istanbul-based photographer. He works with wet-plate collodion, salt print, paper negative, Van Dyke brown, cyanotype, gum bichromate, oil print, and mordantage. Hetmánek also combines his photographs with drawing, painting, bleaching, and cut-up techniques to create hybrid images. See <<https://tomashetmanek.com/>> [accessed 12 August 2025].

²⁰ Although mordantage was invented by Jean-Pierre Sudre in the 1960s, its roots go back to the late nineteenth-century process of etch-bleach by Paul Liesegang.

Hetmánek distinguishes between two forms of uncontrollability in the mordantage process. Technical uncontrollability can arise from exhausted chemicals, unstable lighting conditions, or simply from being a messy operator, while the second form is inherent to the process. Once the very thin and delicate emulsion is lifted from the paper surface, the final appearance of the image is largely left to chance where Hetmánek seeks 'divine' coincidences or serendipity that can complete the photograph beyond his initial vision.

Postdigital beings, postdigital perspectives

In the age of telecommunication, hands-on and do-it-yourself practices have become stimulating ways of expression. Jonathan Openshaw names the rise of tactile and analogue approaches in arts as *postdigital artisanship*.²¹ Postdigital artisans attempt to hybridize digital methods with tactile and analogue ones instead of treating them as distinct realms of operation. Postdigital does not refer to an 'after-digital' moment but rather a new phase where digital culture becomes the main determinant of how human beings perceive their environments and experience everyday situations. 'We are all postdigital now', states Openshaw; 'some of us may feel it to a greater or lesser extent, but in our networked world, the logic of algorithmic processing is the undercurrent to our existence' (p. 5).

With the entanglement of digital technologies and human experience, it has become quite difficult to tell whether our latest technologies are responding to our needs or imposing certain limitations. The potential detrimental impact of digital technologies has become a subject of debate which has been followed by attempts to discover and compensate for what has disappeared from human experience. Postdigital artisans are contemporary artists who attempt to rescue their respective fields from the cold and flat surfaces of digital screens. They do not intend to break away from digital culture but strive to make it a more desirable habitat. After all, postdigital practice is 'forged in the workshop but travels online and is consumed by people fluent in both bytes and atoms'.²²

The internet's pivotal role in disseminating information stands as the primary indicator of postdigital artisanship in photochemical processes. Contemporary photographers interviewed for this research do not seek to escape from the present but rather aim to transform mainstream photographic production by going with and against the grain of various methods of visual creation. For many of these practitioners, their initial exposure to nineteenth-century photographic processes came through online platforms, while social media continues to serve as their primary venue for knowledge exchange and troubleshooting.

²¹ Jonathan Openshaw, *Postdigital Artisans: Craftsmanship with a New Aesthetic in Fashion, Art, Design, and Architecture* (Frame, 2015), p. 8.

²² Ibid., p. 9.

The Covid-19 pandemic further emphasized the digital dimension of this community, as traditional in-person interactions shifted entirely online. This transformation manifested in various ways: Kerim Suner participated in a virtual daguerreotype workshop hosted by the George Eastman Museum,²³ while Tomáš Hetmánek utilized Instagram to stream ‘Kimyasal Muhabbetler’ (Chemical Conversations) with fellow alternative photographers. Characteristics of postdigital artisanship are also observed in each photographer’s non-conservative approach to their respective processes and their openness to chemical/digital hybrid forms of expression.

Aydın Berk Bilgin, whose photographic practice benefits from the eclectic mix of chemical and digital methods, suggests that there are no rules set in stone for photographic production; therefore, any technique from any period can be mixed and matched. As photochemical processes respond to Bilgin’s desire to work with his hands, his photographic series *Gün İzi* (Day’s Imprint), consisting of multiple solargrams, is a fine demonstration of technical and temporal hybridity of visual media.²⁴ Bilgin places makeshift pinhole cameras around Istanbul and records the cityscape and the sun’s movement for months (Fig. 3). Once the desired exposure is achieved, by skipping the chemical developing step altogether, the photographic paper is digitally scanned to record the burned image on the surface of the paper. The resulting solargrams appear inverted, with the darkest areas corresponding to the lightest parts of the landscape which requires the final step of digital inversion from negative to positive. In Bilgin’s



Fig. 3: Aydın Berk Bilgin, *Gün İzi: 2* (2021), solargram, 51-day exposure. Courtesy of the artist.

²³ Kerim Suner (b. 1967) is an Istanbul-based photographer and the founder of 1851.studio and 1851.gallery. He works with wet-plate collodion, albumen print, and salt print processes, as well as silver gelatin dry plate, platinum/palladium, and collodion chloride. He began using nineteenth-century processes in 2014. See <<https://kerim.suner.photography/>> [accessed 12 August 2025].

²⁴ While solargraphy was not invented in the nineteenth century, with its experimental nature and do-it-yourself characteristics, it stands closer to the earliest processes.

practice, the slowness of early photographic processes and the swiftness of digital tools are blended to create a process that transcends binary categorizations such as old/new and analogue/digital, as chemical components of the gelatin silver paper and digital recording ability of the flatbed scanner become co-dependent.

Intermezzo: why discourse matters?

According to Michel Foucault, a discourse, beyond being spoken or written words, represents complex systems of knowledge, practices, and power relationships that shape our everyday experiences. If one wants to *excavate* social conditions that allow particular objects and practices to form at a given time and place, one should start by investigating their discourses.²⁵ Discursive formations have the ability to answer *why* things exist because it is possible to talk about an object ‘if one is to “say anything” about it, and if several people are to say different things about it’ (p. 44). Objects and practices could disappear and reappear throughout history as the discursive order that allows such things to appear transforms (p. 36). The same objects and practices could be the effect of completely different conditions.

To reveal the underlying cause of any practice, one could search the statements of those involved. Taking my cue from Geoffrey Batchen, who investigated the roots of the early photographic desire in the writings of proto-photographers,²⁶ I conducted interviews with seven Turkey-based contemporary photographers who use various nineteenth-century photographic processes in their practices.²⁷

Towards a technical and temporal hybridity

Kerim Suner frequently works with wet-plate collodion, salted paper, and albumen processes. For Suner, they primarily serve to reinstate the human touch — an element gradually swept away not only from photography but from almost every contemporary practice. Increasing automation, standardization, and indifference in the modern day are the main reasons that led Suner to work with nineteenth-century processes:

There is a constant effort to remove humans from every process, which makes me uncomfortable. In photography too, human involvement has diminished, with

²⁵ Michel Foucault, *The Archaeology of Knowledge and The Discourse on Language*, trans. by A. M. Sheridan Smith (Pantheon, 1972), p. 32.

²⁶ Proto-photographers were twenty-four people across the globe who discussed the possibility of photography before it was physically made available. See Geoffrey Batchen, *Burning with Desire: The Conception of Photography* (MIT Press, 1997), p. 35.

²⁷ Semi-structured interviews were conducted with the following photographers from October 2021 to February 2022: Kerim Suner, Aydın Berk Bilgin, Tomáš Hetmánek, Burcu Böcekler, Ergül Karagözoğlu, Ayşe Nilden Aksoy, and Murat Sarıyar. Interviews were conducted in Turkish and translated into English by the author.

most work now done by computers, software, and algorithms. I hope that creations involving human touch will be appreciated and valued again in the future. Otherwise, the world will become very dull through ever-growing standardization.

Like Suner, Hetmánek observes that technological developments have eroded certain aspects of human sensory experience. For him, resorting to photochemical methods is one of the many ways of reclaiming lost human sensations. Their reliance on handcraft makes early photochemical processes intimate multisensory experiences. Working in the darkroom involves handling various chemicals, each with a unique smell and texture. The limited visibility heightens one's awareness to auditory and olfactory stimulation: the clink of glass, rustle of paper, ping of tin, splash of liquids, and most distinctly, the sharp vinegary odour of the fixer solution.

While Suner and Hetmánek attribute great importance to handcraft, they do not seek complete disengagement from digital means. Though Suner favours producing photographs with nineteenth-century processes, he occasionally employs digital methods to streamline his process. Producing a negative image with wet-plate collodion, varnishing the plate, and making prints is a tiresome and challenging process. Suner describes the process as 'too tedious' and the resulting collodion negatives can be quite delicate. During the process, things could go wrong and negatives damaged. Suner mentions that 'when it is necessary', he could resort to digital means.

By digitally photographing ambrotypes — wet-plate collodion negatives viewed against a black background resulting in a positive image — inverting them into negatives, and digitally printing them onto transparent sheets, Suner obtains what he calls 'semi-digital negatives'. Digital negatives are images digitally printed on transparent sheets. They function the same way as nineteenth-century photographic negatives when making prints. Today, digital negatives are a common way to replace traditional negatives among those who work with alternative processes to claim better control over the prints.

This hybrid method provides a ground for controlled experimentation. While using digital means is not ideal for Suner, he sees no problem integrating them into his process. Suner's perspective towards this hybrid approach arises as a synthesis of his embeddedness in digital culture and his knowledge of photographic history. One of the historical anecdotes he provided in our interviews is helpful in illuminating Suner's reasoning.

Established photography studios in the nineteenth century were not individual initiatives but rather enterprises that housed many professionals specializing in diverse subjects such as developing, toning, and even painting. 'Studios had painters in their staff', explained Suner, 'because light-sensitive solutions used in a process like

wet-plate collodion are not equally sensitive to all colours in the light spectrum.’ This caused a particular challenge for nineteenth-century landscape photographers due to the difficulty of balancing the exposure between land and sky. When collodion images were exposed for land, clouds could not be captured.²⁸ To solve this problem, studios staffed painters who were assigned to add clouds or retouch other imperfections over the negatives. Even in its early years, photography was far from being a pure medium and Suner’s occasional use of digital means presents similar intermedial hybridity between different temporalities.

Suner’s photographic subjects belong to a long tradition of documenting Istanbul’s landmarks and everyday life, following predecessors like James Robertson, Abdullah Frères, and Pascal Sébah. While his subjects may be similar, Suner’s understanding and conceptual approach to the medium differs markedly from his nineteenth-century fellows, who operated primarily from commercial studios in Pera district. Pera, with its large Levantine population and numerous embassies, served as the Ottoman Empire’s gateway to the Western world, where studios catered to tourists and locals seeking portraits and photographic depictions of the city.²⁹

For Suner, early photographs of Istanbul have become valuable historical documents, revealing not only obvious changes in cityscape and daily life but also subtler shifts in how we perceive our environment. When Suner began working with the wet-plate collodion process to capture contemporary Istanbul, he discovered an unexpected phenomenon: his images lacked the clarity of those produced almost two centuries ago (Fig. 4). The cause was air pollution, which had become almost second nature and started to act as an invisible veil before our eyes.

This veil only became apparent to Suner when he compared his collodion plates with older works. What began as an experiment to restore a more tactile approach to photography inadvertently revealed a tacit connection between air pollution and our evolving perception of the urban environment. Placing nineteenth- and twenty-first century collodion images of Istanbul side by side tells not only the story of the city’s urban transformation but also documents how air quality has deteriorated over the last two centuries — a change so gradual it escapes daily notice. The wet-plate collodion process, when employed in the contemporary context, thus became an unexpected tool for observing environmental change.

²⁸ Kim Beil, ‘A World without Clouds’, *Lapham’s Quarterly*, 24 June 2020 <<https://www.laphamsquarterly.org/roundtable/world-without-clouds>> [accessed 16 February 2025].

²⁹ Bahattin Öztuncay, ‘İstanbul’da Fotoğrafçılığın Doğuşu ve Gelişim Süreci’, in *Camera Ottomana: Osmanlı İmparatorluğu’nda Fotoğraf ve Modernite 1840–1914*, ed. by Zeynep Çelik and Edhem Eldem (Koç Üniversitesi Yayınları, 2015), pp. 66–105 (p. 72).

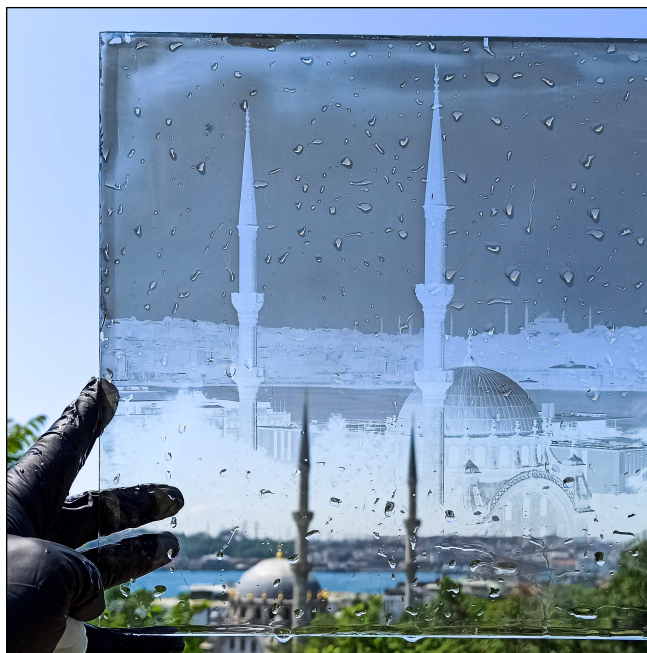


Fig. 4: Kerim Suner, *Nusretiye Mosque, Istanbul* (2021), wet-plate collodion negative, 27 × 38 cm.
Courtesy of the artist.

Uncontrollable, ephemeral, and failed photographs

‘The photograph is not the reflection of a real object,’ states Tomáš Hetmánek, ‘it is my reflection.’ For Hetmánek, rather than being an indexical object, a photograph primarily represents the subjective and artistic vision of the photographer. Thus, photographers hold the right to use any method to realize their intentions. Hetmánek considers nineteenth-century photographic techniques neither historical nor old but as alternatives:

I don’t see nineteenth-century techniques as historical — to me, they are just techniques [...]. I use old lenses simply because I like the images they produce. I don’t have a romantic perspective. While I appreciate the aesthetic of brass, wood, and varnished cameras and lenses, I would choose a cheaper CNC-cut plywood camera if it served the same function [...]. I’m wary of viewing these techniques as historical because I don’t want to be an escapist. I want to be here and now, to be contemporary [...]. The fact that old technologies offer me something no other technique can provide is an utterly modern situation.

According to Hetmánek, nineteenth-century processes should not be dismissed as obsolete because ‘valuable knowledge has been scattered throughout history’. This

perspective challenges the assumption that our current era represents the peak of visual technologies and practices.

For Burcu Böcekler, the printing methods of cyanotype, Van Dyke brown, and gum bichromate, with their distinct visual properties, offer ways to challenge standardized image-making and uniform photographic depictions.³⁰ Even though photography was quick to be deemed as a form of mechanical reproduction, its chemically multivariate and inconsistent nature complicates this claim. The blend of controllable variables — chemical mixtures and printing surfaces — with unpredictable factors such as sunlight transforms the process into an experimental playground where artists can explore and innovate.

Through this heterogeneity, no process or image becomes the exact replica of the other. Böcekler's prints using the same negative but different printing processes demonstrate how this can alter the overall quality and impression of an image (Fig. 5). Kerim Suner's collodion series *Failure is an Option*, where he attempted to make a *successful* photograph of a statue, helped him embrace unintentional outcomes as essential and unavoidable characteristics of the process.³¹ It illustrates how photographs emerge from the reconciliation between the technique's unpredictable nature and the photographer's aesthetic intentions (Fig. 6). Suner explains how the perfectionist composure he held in his former profession of computer engineering was reshaped by his encounter with the collodion process. Suner's articulation reveals that there is a dialogue between the photographer and the process during which both sides are informed and transformed:



Fig. 5: Burcu Böcekler, *From Acropolis of Pergamon Series* (2021), cyanotype, Van Dyke brown, and gum bichromate prints on watercolour paper from digital negative, 21 × 30 cm. Courtesy of the artist.

³⁰ Burcu Böcekler (b. 1980) is an Istanbul-based photographer and scholar who works with cyanotype, Van Dyke brown, gum bichromate, and photogram. She teaches on the Old Techniques in Photography course at Yıldız Technical University.

³¹ Kerim Suner, 'Failure is an Option', 2015 <<https://kerim.suner.photography/failure-is-an-option>>, [accessed 12 August 2025]. Instead of the word *taking*, photographers who use nineteenth-century photographic processes often refer to their practice as *making* photographs.

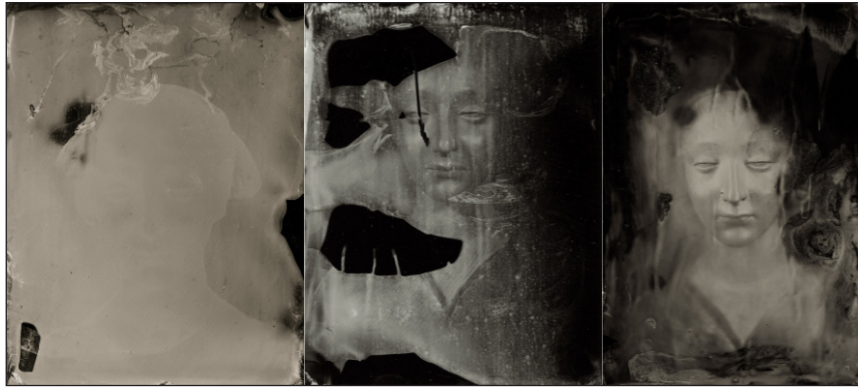


Fig. 6: Kerim Suner, From *Failure is an Option* Series nos 6, 11, and 44 (2015), wet-plate collodion, various sizes. Courtesy of the artist.

[Accepting failure as an option] only emerged after I began working with collodion. This perspective develops while you're in the process of technical experimentation — the process educates you. Though I hesitate to say it, I am somewhat of a perfectionist. With computer programming, precision is essential; if something isn't correct, it simply won't work. It makes you strive for everything to be exactly right. However, collodion teaches you differently. There's no striving for perfection here — instead, you learn to love and accept mistakes over time, seeing how they enrich the process.

For Nilden Aksoy, plant-based photographic processes anthotype and chlorophyll prints introduce a collaboration between the photographer and nature.³² In this collaboration, photographers cannot claim total control over the photographic process but can only be facilitators. Due to their unfixable nature, from the moment they are created, plant-based prints are deemed to fade out.

Aksoy's series *Yüzleşme* (Confrontation) employs the anthotype process to document the agricultural practitioners of *Yedikule Bostanları* (Yedikule Urban Gardens). These gardens, which have historically leveraged the hydrological advantages alongside the Roman fortifications in Istanbul, represent a significant agricultural heritage site that has persisted throughout centuries, though their presence has been increasingly diminished by over-urbanization in the city.³³ With its use of anthotype, *Yüzleşme*

³² Ayşe Nilden Aksoy (b. 1983) is an Istanbul-based photographer who works with anthotype, cyanotype, powder process, chlorophyll print, cyano-lumen, and chrysotype. Aksoy's master's thesis focused on plant-based/non-chemical photographic printing processes and their contemporary applications. Aksoy has been using hands-on photographic processes since the early 2010s. See <<https://nildenaksoy.com/wpx/>> [accessed 12 August 2025].

³³ Elifnaz Durusoy and Duygu Cihanger, 'Historic Landscape vs. Urban Commodity?: The Case of Yedikule Urban Gardens, Istanbul', *Megaron*, 11.1 (2016), pp. 125–36 (p. 130), doi:10.5505/megaron.2016.48343.

establishes a metaphorical dialogue between the ephemeral nature of the printing technique and the precarious existence of these historic urban gardens. The series also reflects on the vulnerable state of agricultural labour that has sustained these lands for many centuries, drawing parallels between the fading prints and the disappearing farming practices in urban Istanbul. Like most of the gardens, Aksoy's prints do not exist anymore.

Aksoy is interested in drawing attention to the resemblance between the characteristics of plant-based processes and that of nature, where nothing stays still and everything is in constant change, even in opposition to one's desire. In the contemporary context, the desire to permanently fix an image which forms the foundation of the early photographic desire is disturbed by embracing photographs as ephemeral artefacts that only exist momentarily. Nowadays, ephemeral images do not present challenges to overcome but rather offer new conceptual ground for artistic expression, from Thomas Mailaender's *Illustrated People*, where images are printed on human bodies using ultraviolet light, to Ackroyd & Harvey's photographic images grown on patches of grass that eventually dry and disappear.³⁴

Pictorialism in the age of digital and *Fake Mates*

For Murat Sariyar, photochemical processes introduced a rather different possibility.³⁵ Initially a graphic designer and sculptor, Sariyar's later practice consisted of creating 3D-modelled sculptures and virtually photographing them. The entire sculpting and photographing process would take place inside a computer. When Sariyar was introduced to wet-plate collodion and oil print, his earlier practice of 3D-modelling and virtual photography was replaced by handmade sculptures and chemical photography which created his *Fake Mates* project (Figs. 7, 8). The specific reason for Sariyar to work with collodion and oil print was their aesthetic qualities, especially their ability to compose photographs in a pictorial manner. Oil print, combined with wet-plate collodion negatives (Fig. 9), allowed Sariyar to create images that carry pictorial characteristics:

I wish I could paint, but I can't. It was easier for me to make things that I could shape with my hand, shape with light, and that I could walk around. I made photographs

³⁴ Thomas Mailaender, *Illustrated People*, 2013 <<https://www.thomasmailaender.com/illustratedpeople.html>>; and Ackroyd & Harvey, *Life on Life*, 2014 <<https://www.ackroydandharvey.com/life-on-life/>> [both accessed 12 August 2025].

³⁵ Murat Sariyar (b. 1982) is an Istanbul-based sculptor and photographer who worked with wet-plate collodion, oil print, paper negative, cyanotype, and Van Dyke brown. Sariyar started his alternative photography practice in 2012. See <<https://www.muratsariyar.com/>> [accessed 12 August 2025].

because I couldn't paint. I created sculptures and photographed them to give them an illustrative aura [...]. There was always an aesthetic concern behind my decisions. I turned to alternative processes for their aesthetic qualities. Among my preferred features were the stains that appear on the edges of collodion images when using large-format cameras with wide-aperture lenses, as well as the grainy texture of oil prints.



Fig. 7: *Fake Mate in Aquarium* (2017), image from Murat Sariyar's studio. Courtesy of the artist.



Fig. 8: Murat Sariyar, *Swindler* (c. 2017), wet-plate collodion. Courtesy of the artist.



Fig. 9: Murat Sariyar, *Fake Mate No. Unknown* (c. 2018), oil print from a wet-plate collodion negative. Courtesy of the artist.

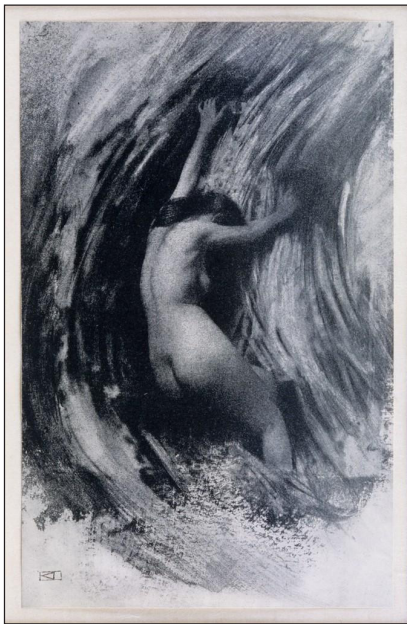


Fig. 10: Robert Demachy, *Struggle* (1904), photomechanical print (similigravure) from a gum bichromate print, 19.4 × 12.1 cm. Currently held in the Musée d'Orsay, Paris.

Sariyar's practice resembles that of the Photo-Secessionists from the early twentieth century. Responding to photography's transformation into a standardized, mass-produced medium, the early Photo-Secession movement embraced nineteenth-century processes to create handcrafted images that aligned with their pictorial vision (Fig. 10).³⁶ The aesthetic convergence between Robert Demachy's gum bichromate print *Struggle* (1904) and Murat Sariyar's oil print *Fake Mate No. Unknown* (c. 2018) demonstrates the transhistorical capacity of alternative photographic processes to dissolve medium-specific boundaries. Though separated by a century, both works manifest a dream-like quality while challenging the traditional demarcations between photography and various forms of visual reproduction spanning from drawing to digital manipulation.

As Sariyar mentioned, his practice cannot be held separate from his rootedness in digital culture. As much as he tries to stay faithful to the chemical processes, his practice is constantly informed by the digital imprint in every aspect of life:

My experimentation with sculptures involved observing how they responded to light, first with the naked eye and then with a digital camera [...]. I would capture my sculptures with a digital camera and think, 'Yes, this could become a collodion plate.' Additionally, I use modern lights and flashes in the studio [see Fig. 7]. My approach is definitely not a purist one — nor can anyone be, anyway.

Fake Mates is also a social commentary on friendships, questioning how easy it is to form fleeting ones and how much effort it takes to sustain them. All of

³⁶ Lyle Rexer, *Photography's Antiquarian Avant-Garde: The New Wave in Old Processes* (Abrams, 2002), p. 14.

Murat Sarıyar's fake mates were created by recycling twelve kilograms of plasticine. None of the mates would remain too long after being photographed. These friends were constantly formed, dissolved, and transformed, making the social relationship's substance questionable for Sarıyar. While the labour-intensive processes of wet-plate collodion and oil print represented the effort required to sustain friendships, Sarıyar is eventually left with only painterly remnants of those interactions.

At the time of the interviews, Sarıyar was the only photographer among the interviewed group who did not practise nineteenth-century photographic processes anymore. He made it clear that this was a result of health concerns, underappreciation of his work, and struggles to succeed in the art market. While economic sustainability is a global struggle for artists, it has an even greater impact in the Turkish context due to growing expenses and decreasing potential income caused by the turbulent economy and underdeveloped art market. This is one of the reasons why practitioners of these processes often have other professions that can help them support their photographic endeavours.

Conclusion: rooted in the past, ramified in the present

The nineteenth-century photographic processes resurfaced several times throughout the last century. The movement of returning to the early forms of photography in art practice is named as the 'photography's antiquarian avant-garde' by Lyle Rexer. The first antiquarian avant-garde in the early twentieth century was a reaction to photography's changing commercial identity; however, due to continuing massification and standardization of photography, it was short-lived.³⁷

During the 1960s and 1970s, experimental artists revived the antiquarian avant-garde to produce hybrid works that combined photography with painting, sculpting, and sewing. Photochemical processes became the manifestation of experimentality, decay, and accidents against standardization, permanence, and predictability. Towards the end of the twentieth century, alternative photographic history writing was also underway. Critical investigations were conducted on unwritten histories of photochemical processes and the historical figures behind them, acknowledging not only successful firsts in history but also recognizing failed figures and forgotten practices.³⁸ The dynamics of the antiquarian avant-garde have shapeshifted with the

³⁷ Ibid., p. 17.

³⁸ In his 1991 book *Cyanide and Spirits: An Inside-Out View of Early Photography*, Bill Jay offered one of the earliest counter-historical writings on photography by discussing neglected stories from the history of photography and challenging established narratives. See Erkki Huhtamo, 'Elephants Photographicus: Media Archaeology and the History of Photography', in *Photography and Other Media in the Nineteenth Century*, ed. by Nicoletta Leonardi & Simone Natale (Penn State University Press, 2018), pp. 13–33 (p. 18).

exponential rise of digitalization and cemented the alternative and marginal status of the chemical tradition in photography.

The current use of early photographic processes is rooted in the past and it is possible to see parallels between the desires of the earlier antiquarian avant-gardes and today's photographers. However, the contemporary approach branches out into fresh directions under the influence of digital culture. As the visual landscape changes, discourses that once formed around *old* practices shed their old skin and start developing novel identities. Historically, the essential challenge in early photography was to develop images more consistently and predictably. Thus, the nineteenth century was full of practitioners who aimed to perfect the process of fixing images by eliminating technical shortcomings. Temporariness, irreproducibility, low-light sensitivity, and technical complexity of each process were resolved until the name photography became synonymous with snapshotting. The photographer's contemporary challenge is not perfecting the process or image anymore but rather emancipating the medium from its homogeneous and oversaturated state.

Just as human thinking and rationale were influenced by contemporary technologies of the early nineteenth century, modern human thinking is now highly influenced by digital media and their functioning principles.³⁹ From the viewpoint of postdigital photographers, nineteenth-century processes do not necessarily present obstacles that need to be surmounted. On the contrary, they provide alternative methods that could help overcome the challenges of today. Previously assumed weaknesses of photochemistry are turned into embraced and sought-after features. Ephemeral images serve as metaphors for the impermanence of life, while the effort invested in these meticulous processes parallels the work required to sustain social relationships. Unpredictability and failed attempts blossom as the manifestations of co-authorship and collaboration, whereas material and hands-on qualities provide ways for restoring lost human sensations. Reciprocally, digital technologies contribute to the impact of photochemical methods by making them more operable through hybrid forms of image-making.

As Tomáš Hetmánek said, 'anything in art is a possibility, a limited possibility', which illustrates an essential point in understanding photochemical processes as alternative methods of expression. Any practice that involves human-technology interaction, whether it is an artistic or a purely utilitarian one, is restricted to a frame of possibilities. At times, the frame becomes wider, and people who function within have

³⁹ Jonathan Crary argues that the camera obscura, thaumatrope, zoetrope, phenakistoscope, and stereoscope influenced human perception and thinking through their functioning principles (pp. 104–12).

more options; at other times, the frame becomes narrower, and practitioners cannot choose to function differently than the imposed ways of the apparatus. This is also true for photography. Whatever the photographer's creative vision might be, the process is always limited to a range of possibilities determined by the technology.

As new media technologies emerge with claims of improvement, their predecessors are made obsolete and relegated to labels like 'old', 'historical', and 'outdated'. However, for those raised in contemporary digital culture or heavily exposed to media in its digital form, the old methods carry the potential to spark novel sensations. Despite digital media's advantages of speed, automation, and instant distribution, some practitioners find these conveniences ultimately unfulfilling or their implications creatively restrictive.

Early photochemical processes present their users with various challenges: health risks, aesthetic limitations, environmental concerns, and economic constraints. Through chemical bending tactics that hybridize chemical and digital realms and by imagining new conceptual grounds for nineteenth-century processes, most of these challenges can be bypassed or turned into desirable elements. While photographers' individual motives vary, their choice to work with early photochemical processes reflects a shared desire to expand artistic expression beyond contemporary photographic conventions. These motivations range from responses to specific local contexts to broader artistic aspirations that transcend geographical boundaries.

In the age of immediacy, mass image, and virtual data, future discussions of visual culture are already situated around swiftly growing trends such as non-human photography, image datasets, and artificial intelligence. It is unlikely that photochemical processes will exceed their marginal status and become as visible as the mentioned trends. This is precisely why their contemporary use offers an important field of investigation for imagining alternative futures for photography. It demonstrates an example of discovering something new in the past and introduces an opportunity for those who wish to swim against the current.

Competing Interests

The author has no competing interests to declare.

