

PHOTOGRAPHY BETWEEN MOULDING
AND MODULATION

Tomáš Dvořák

 ORCID: 0000-0003-3213-1745

Academy of Performing Arts in Prague (05mjwh489)

Contacts: tomdvorak@famucz

ABSTRACT

This article rethinks photography through Gilbert Simondon's distinction between moulding and modulation. While photography has long been theorised as a moulding medium – an instantaneous imprint of reality, a decisive moment fixed in time – it is equally constituted by processes of modulation: continuous adjustments of exposure, development, calibration and computation. Drawing on examples from nineteenth-century composite printing to contemporary computational and synthetic photography, the article shows that moulding and modulation are not historical stages or rival media, but heuristic poles that illuminate the technical dynamics of photographic individuation. Photography, the article argues, is best understood as a parameter-image: a field of potential variation that continually modulates the very concept of what photography is.

Keywords: Photography theory, moulding and modulation, Gilbert Simondon, parameter-image

This article derives from a larger project, *Modulation: The Parameter-Image*, forthcoming in book form. That work develops a genealogy of the image through the concept of modulation. Where most theories of the image have privileged representation – treating images as fixed signs referring to external realities – the book argues instead that images are best understood as fields of variation structured by parameters. From Renaissance perspective grids to contemporary sliders in image-processing software, images have always been made and sustained through acts of adjustment, tuning and calibration. They exist not as static artefacts but as ensembles of potential adjustments, ranges within which sameness and difference are negotiated.

The book follows this conceptual thread across a wide historical arc. Early modern optical instruments such as the pantograph or camera obscura institutionalised a logic of mutable stability or controlled



mutability, in which images were expected to travel across supports and scales. Nineteenth- and twentieth-century electrical and electronic media – telegraphy, telephony, radio and television – made modulation the very principle of transmission, embedding images within infrastructures of signal adjustment. In the present, algorithmic cultures organise images as statistical fields, where each generated picture crystallises from distributions in latent space. Throughout, the image is treated not as a single surface but as a parameter-image: bounded, variable and relational.

The aim of the present article is more focused. Instead of tracing modulation across the *longue durée* of image cultures, I concentrate here on photography as a privileged case study. Photography is especially significant because it has long been interpreted within what Gilbert Simondon called the hylomorphic schema: the idea of a form impressed onto inert matter, like a mould shaping clay. This understanding underpins both popular discourses of photography as an automatic imprint of reality and major theoretical accounts that have insisted on its objectivity and indexicality. Yet if we take modulation seriously, photography appears in a very different light: not as a mould that fixes the world into an image once and for all, but as a chain of adjustments, calibrations and recombinations that modulate light, matter and code before, during and after capture. Photography provides a particularly clear case of this logic because it has always been defined by such parameters. The photochemical processes of the nineteenth century relied on calibrated emulsions and chemical baths; the act of exposure depended on adjustments of light and time; later, the transition to digital sensors intensified this parametric dimension, embedding it in circuits, firmware and algorithms. In every instance, the photograph is less an instantaneous mould than a crystallisation of a modulatory field.

By reinterpreting photography through the polarity of moulding and modulation, I aim to illuminate both its historical trajectories and its contemporary transformations. The discussion will move in the following steps: first, an introduction to Simondon's distinction between moulding and modulation; second, an analysis of the dominant tradition that construed photography as a form of moulding; third, an exploration of photography as modulation, drawing on recent debates and practices; and finally, a conclusion that stresses the heuristic rather than historical nature of the mould/modulation opposition, and its relevance for understanding both the past and future of photographic practice.

SIMONDON'S CONCEPTUAL FRAMEWORK

In *Individuation in Light of Notions of Form and Information*, Gilbert Simondon proposed a distinction between moulding and modulation as two extreme modalities of form-taking. The mould represents a static and closed schema: an external form impressed onto passive matter, yielding a finished product. This conception corresponds to the hylomorphic schema of classical metaphysics, in which every entity is thought to consist of inert matter shaped by an active form. A brick, for example, appears to be produced by pressing clay into a rigid mould, which fixes its final shape once and for all.

For Simondon, however, this picture is misleading. It abstracts away from the actual processes and conditions of production: «The form and the matter of the hylomorphic schema are an abstract form and an abstract matter»¹. The clay is not a passive substrate: its humidity, granularity and elasticity actively shape

¹ G. Simondon, *Individuation in Light of Notions of Form and Information* (2005), transl. by T. Adkins, University of Minnesota Press, Minneapolis-London 2020, p. 22. Earlier editions of portions of this work appeared in French in 1964 and 1989.

how it can take form. The mould itself has a history of preparation, materials and tolerances. Energies – heat for drying, pressure from hands or machines – play a decisive role in determining the outcome. Thus, even in a paradigmatic case like brick-making, what seems like a pure instance of moulding is in fact better understood as modulation: a dynamic and co-evolving interplay of matter, form and energy that yields provisional stability. What individuates the brick is not simply the imposition of form on matter but the unique constellation of micro-variations in the process of becoming.

Simondon's critique of the hylomorphic schema therefore has a wider philosophical reach. Where classical metaphysics reduces generation to the dualism of form and matter, Simondon insists on the primacy of energetic and relational processes. Individuation precedes substance: individuals are not static essences but metastable resolutions of tensions within a field charged with potential. To mould, then, is only one limiting case of modulation: a moment when variation is temporarily arrested. Modulation, by contrast, designates an open process that can continuously adapt, adjust and transform. «To mould is to modulate in a definitive way; to modulate is to mould in a continuously and perpetually variable way»².

This distinction, while drawn from technical operations, was not for Simondon a narrow technicality. It was meant as a general ontological-analytical schema: a way of describing how physical, technical, vital and social beings come into existence. Modulation captures the continuous shaping of processes that never arrive at a final form but are always in becoming. Moulding, in this sense, is a secondary abstraction, the view from outside the workshop that sees only inputs and outputs but not the energetic play within. What this view occludes, Simondon insists, has a political dimension. The hylomorphic schema encodes the social division of labour in antiquity, privileging the commanding form-giver (the free citizen, the artist) while rendering invisible the work of slaves and artisans who modulate matter in practice. To reject hylomorphism is therefore not only a technical correction but also a philosophical and political critique: it restores visibility to the processes, energies and labours that constitute individuation.

Gilles Deleuze later took up Simondon's mould/modulation polarity but redeployed it for different purposes. In his short but influential *Postscript on Control Societies*, Deleuze proposed that modern forms of power had shifted from disciplinary moulds to modulatory controls: «Confinements are *moulds*, different mouldings, while controls are a *modulation*, like a self-transmuting moulding continually changing from one moment to the next»³. Where Foucault had diagnosed the closed institutions of discipline (school, factory, prison), Deleuze argued that they were being replaced by flexible, continuous systems of monitoring and recalibration. Modulation here is no longer an ontological analysis of individuation but a historical-political diagnosis of late capitalism.

Deleuze also drew on the mould/modulation pair in his philosophy of cinema, contrasting the photograph as mould (an immobile imprint of an instant) with cinema as modulation (light, sound, and movement continuously varied in time). But in both cases, modulation serves Deleuze as a conceptual figure of historical transition and control, whereas for Simondon it designates a transhistorical mode of form-taking. Where Deleuze's modulation is often bound to specific regimes – cybernetics, surveillance, flexible capitalism – Simondon's modulation can be used more broadly to analyse processes of individuation across technical, biological and social domains.

² *Ibid.*, p. 31.

³ G. Deleuze, *Postscript on Control Societies* (1990), in G. Deleuze, *Negotiations, 1972-1990*, transl. by M. Joughin, Columbia University Press, New York 1995, pp. 178-179.

For the purposes of this article, I privilege Simondon's ontogenetic understanding. The mould/modulation polarity will be used as a heuristic operator to illuminate different conceptions of photography: photography as an instantaneous moulding versus photography as an ongoing modulation. This does not mean that photography moved historically from one regime to the other; rather, both aspects have coexisted throughout its history. By stressing Simondon's processual account, I aim to show how photography can be reconceptualised as a field of modulations, rather than as a fixed mould of reality.

Importantly, modulation is not limitless fluidity. It always occurs within parameters – ranges, tolerances, thresholds. Modulation is bounded variability. This boundedness makes it an especially apt concept for imaging, where exposure, focus, resolution and contrast all exist as parameters that can be adjusted within technical and perceptual limits.

Although Simondon has become an influential figure in philosophy of technology and media theory, his concepts have only rarely been taken up within photography studies. Mauricio Lissovsky has applied Simondon's notion of individuation to argue that photographs are outcomes of processes charged with expectation and duration⁴. Mark Martinez invoked Simondon in describing photography as a «machine organism», part of a cybernetic ensemble that self-regulates⁵. Aud Sissel Aurora Hoel has drawn on Simondon to conceptualise images as active, generative powers in medical and digital imaging⁶, while Jiří Anger has used the related notion of transduction in analysing experimental film⁷. These scattered interventions suggest the fertility of Simondon's framework, but they remain marginal compared to the dominant hylomorphic discourse. The task here is to develop a more systematic account of photography through the polarity of moulding and modulation, both to recast canonical debates and to make sense of contemporary practices.

PHOTOGRAPHY AS MOULDING

The history of photographic theory has often been framed in terms that fit Simondon's moulding paradigm. Photographs are conceived as direct imprints of the world: a form impressed on a sensitive substrate, captured in a singular act. The camera is a mould that fixes light into image, and the photograph an instantaneous cast of reality: light imprints itself upon a passive surface, producing an image as if by direct transfer. The shutter mechanism appears as the instant of form-taking, imposing the world's shape onto a neutral matter – film, plate or sensor. This view has dominated both popular discourses and major theoretical traditions.

Already in 1839, when François Arago presented Daguerre's invention to the French Chamber of Deputies, the rhetoric emphasised automaticity: the daguerreotype was said to be a spontaneous reproduction of the images of nature, produced without the aid of drawing or human intervention⁸. William Henry Fox Talbot

⁴ M. Lissovsky, *The Photographic Device as a Waiting Machine*, in "Image [&] Narrative" [e-journal], 23, 2008. Available: <http://www.imageandnarrative.be/timeandphotography/lissovsky.htm>.

⁵ M. Martinez, *Photography as a Machine Organism. The Cyberneticization of the Photographic and Techne as Ethics*, in "Philosophy of Photography", VI/1-2, 2015, pp. 59-70.

⁶ A. S. A. Hoel, *Images as Active Powers for Reality. A Simondonian Approach to Medical Imaging*, in E. Alloa, C. Cappelletto (ed. by) *Dynamis of the Image. Moving Images in a Global World*, De Gruyter, Berlin-Boston 2020, pp. 287-310.

⁷ J. Anger, *Trembling Meaning. Camera Instability and Gilbert Simondon's Transduction in Czech Archival Film*, in "Film-Philosophy", XXV/1, 2021, pp. 18-41.

⁸ D. F. Arago, *Report (1839)*, in A. Trachtenberg (ed. by) *Classic Essays on Photography*, Leete's Island Books, New Haven, Conn. 1980, pp. 15-25.

made similar claims in *The Pencil of Nature*, insisting that photographs are «impressed by Nature's hand»⁹. The camera was celebrated as a device that allowed nature to draw itself, effacing the human hand. Such claims crystallised the promise of photography as a mould of reality, an imprint taken directly from the world's own surfaces.

By the mid-nineteenth century, this rhetoric had spread even further. Oliver Wendell Holmes, in an 1859 essay for the *Atlantic Monthly*, famously described photography as «the mirror with a memory»¹⁰. The metaphor condensed the moulding paradigm: a mirror because the photograph offered an exact reflection, a memory because it preserved that reflection permanently. In the sciences, photographic atlases of the moon, of plant morphology or of human anatomy were promoted as the epitome of mechanical objectivity. As Lorraine Daston and Peter Galison have shown¹¹, scientists valued photography precisely because it eliminated the interpretive hand of the draftsman, replacing it with a machine that could be trusted to let nature inscribe itself.

This rhetoric of objectivity also permeated vernacular uses. The Kodak snapshot promised to capture everyday life without effort, an image moulded instantly by the press of a button. Whether in the studio portrait, the family album or the holiday picture, the snapshot was perceived as an automatic cast of the real, an image formed without skill or deliberation. The snapshot became the democratic avatar of moulding: photography as pure imprint, available to all.

In artistic and journalistic contexts, the decisive moment reinforced this moulding logic. Henri Cartier-Bresson's famous dictum that the photographer must capture «the decisive moment» cast photography as the art of seizing the world's form at its most pregnant instant: «What the eye does is to find and focus on the particular subject within the mass of reality; what the camera does is simply to register upon film the decision made by the eye»¹². The perfect photograph was conceived as a mould of time itself: the world frozen into a meaningful cast; form imposed on flux. Even here, where artistry was acknowledged, the essence of photography was still tied to its ability to stop time in a single gesture.

Early theorists elaborated this moulding conception in philosophical terms. Siegfried Kracauer, Walter Benjamin and especially André Bazin stressed the direct, causal link to the real world:

For the first time, between the originating object and its reproduction there intervenes only the instrumentality of a nonliving agent. For the first time an image of the world is formed automatically, without the creative intervention of man. [...] All the arts are based on the presence of man, only photography derives an advantage from his absence. Photography affects us like a phenomenon in nature, like a flower or a snowflake whose vegetable or earthly origins are an inseparable part of their beauty¹³.

This conviction persisted into mid- and late-twentieth-century theory. William Ivins described photography as a «statement without syntax»¹⁴, transparent to the real. Roland Barthes called it a «message without a code», an indexical trace without mediation¹⁵. Rosalind Krauss underscored its pre-symbolic or sub-

⁹ W. H. F. Talbot, *The Pencil of Nature*, Longman, Brown, Green and Longmans, London 1844-1846.

¹⁰ O. W. Holmes, *The Stereoscope and the Stereograph*, in «Atlantic Monthly», June 1859, p. 739.

¹¹ L. Daston, P. Galison, *Objectivity*, Zone Books, New York 2007.

¹² H. Cartier-Bresson, *The Mind's Eye. Writings on Photography and Photographers*, Aperture, New York 1999, p. 32.

¹³ A. Bazin, *The Ontology of the Photographic Image* (1945), in A. Bazin, *What is Cinema? Volume I*, transl. by H. Gray, University of California Press, Berkeley 1967, p. 13.

¹⁴ W. M. Ivins, *Prints and Visual Communication*, Harvard University Press, Cambridge, Mass. 1953.

¹⁵ R. Barthes, *Rhetoric of the Image* (1964), in R. Barthes, *Image Music Text*, ed. and transl. by S. Heath, Fontana Press, London 1977, pp. 32-51.

symbolic character, grounding its signification in causal indexicality rather than symbolic structure¹⁶. Across these positions, the photograph appears as a surface where the world leaves its direct impression, without the intervention of language or subjectivity.

It is in this context that Deleuze's own characterisation of photography must be read. In *Cinema 1: The Movement-Image*, Deleuze described the photographic image as moulding organising «the internal forces of the thing in such a way that they reach a state of equilibrium at a certain instant (immobile section)»¹⁷. Cinema, by contrast, was defined as modulation: light and movement continually varied in time. His view of photography as moulding was deeply indebted to Bazin's ontology of the photographic image. Like Bazin, Deleuze saw the photograph as a fixed imprint of reality, an instant cast that lacks the variability and duration of modulation.

Despite repeated theoretical attempts to emphasise the constructedness of photography, the moulding paradigm has proven remarkably durable. Photography continues to be widely understood as the imprint of reality, functioning as a guarantee of presence and evidence. This durability is not only cultural but also the product of recurring binary oppositions through which photography has been historically defined.

In the nineteenth century, photography was set against painting and drawing. The photograph was celebrated as an automatic imprint of reality, in contrast to the manual and interpretive labour of the artist. The distinction reinforced the idea that photography was a transparent, objective mould, while other visual arts were interpretive constructions. In the early twentieth century, the contrast was redrawn between photography and cinema. Film appeared as movement, time and narrative, while photography was defined by its singular moulding of an instant. The ontology of photography was thus tied even more closely to the decisive moment: an immobile trace set against cinema's temporal unfolding.

By the late twentieth century, the dominant opposition was analogue versus digital. Analogue was retroactively constructed as pure moulding – chemical, indexical, material – while digital was cast as modulatory, malleable and unreliable. The binary exaggerated photography's supposed stability in order to sharpen its contrast with new media. In the twenty-first century, photography has increasingly been defined against synthetic and generative images. The photograph, it is claimed, moulds the real, while synthetic media fabricate without referent. The moulding conception is thus reinscribed once again, invoked to demarcate photography's evidentiary authority from the proliferating field of AI-generated or «fake» imagery.

Across all these moments, the moulding conception persists not because it accurately describes photographic practice, but because it serves as a stable counterpoint in successive binary oppositions. Photography becomes «the mould» against which other media are defined: against painting, against film, against digital, against the synthetic. This genealogy shows how the moulding myth has remained unproblematised in the background, functioning as the silent essence of «photography» even as technologies and practices have changed dramatically.

But crucially, the moulding/modulation pair developed in this article is not another such binary. It does not describe competing media or historical stages, but rather a conceptual polarity within all technical processes. Moulding and modulation name two heuristic poles of individuation: the momentary crystallisation of form, and the continuous variation that makes such crystallisation possible. In real practices, photography

¹⁶ R. E. Krauss, *Notes on the Index. Part I* (1976), in R. Krauss, *The Originality of the Avant-Garde and Other Modernist Myths*, The MIT Press, Cambridge, Mass. 1985, pp. 196-209.

¹⁷ G. Deleuze, *Cinema 1. The Movement-Image* (1983), transl. by H. Tomlinson, B. Habberjam, University of Minnesota Press, Minneapolis 1997, p. 24.

always involves both. To oppose painting to photography, analogue to digital or photography to synthetic images is to stage a historical or media binary; to distinguish moulding and modulation is instead to analyse the underlying dynamics of form-taking that cut across such binaries.

PHOTOGRAPHY AS MODULATION

Reflecting on the photographic capture of a uniform field of sand, Simondon noted:

An area of fine, very flat, and uniformly lit sand is very difficult to photograph: the grain of the photographic film must be much smaller than the average magnitude of the image of a grain of sand on the film, or else the granulation of the developed film could equally be due to the image or to the grain of the film: decision, which is characteristic of the information signal, will no longer exist. One cannot duplicate the image of the grain of a photographic film by means of the same type of film; a more fine-grained film must be used¹⁸.

This example unsettles the traditional idea of photography as a simple indexical mould of the real. Simondon shows that the image is never a pure imprint: it is conditioned by the modulation of granularity and resolution, by the relation between signal and medium. The photograph's legibility depends on parametric thresholds – grain size, exposure, sensitivity – rather than on a one-to-one correspondence with the world. In other words, even the most «faithful» photograph is already a modulated construct, its clarity the effect of calibration.

Such modulatory aspects were present from the very beginnings of the medium. In the nineteenth century, the supposed permanence and singularity of the photographic image was constantly undermined. Photographs proved unstable: Talbot's own plates in *The Pencil of Nature* faded when exposed to light, a problem that generated widespread concern and even institutional investigations such as the British «Fading Committee», which sought to establish whether photographs could ever be fixed once and for all. Kate Palmer Albers, in *The Night Albums: Visibility and the Ephemeral Photograph*, has recently reminded us that photography was never only about permanence but also about ephemerality, impermanence and disappearance¹⁹. Photographs could fade, discolour, peel or vanish altogether, revealing the medium as inherently time-bound. Far from eternal moulds, photographs emerged as fragile traces whose very instability became part of their meaning.

The problem of reproduction further destabilised the idea of photography as a unique, immutable imprint. Each negative could generate multiple prints, no two alike, but photographs also travelled beyond the darkroom. As Geoffrey Batchen has shown in *Apparitions: Photography and Dissemination*, the photograph from its earliest decades was embedded in a culture of dissemination: reproduced in books, magazines, cartes-de-visite, stereographs, lantern slides and postcards²⁰. Geoffrey Belknap, in *From a Photograph: Authenticity, Science and the Periodical Press, 1870–1890*, demonstrates how photographs entered the circuits of the illustrated press, often redrawn, re-engraved or reprinted²¹. In these processes, photography was never a singular mould of the real but always a translation across media, a modulatory relay between photographic negatives and other reproductive technologies.

¹⁸ G. Simondon, *Individuation*, cit., p. 246.

¹⁹ K. P. Albers, *The Night Albums. Visibility and the Ephemeral Photograph*, University of California Press, Oakland 2021.

²⁰ G. Batchen, *Apparitions. Photography and Dissemination*, Power Publications, Sydney, AMU Press, Prague 2018.

²¹ G. Belknap, *From a Photograph. Authenticity, Science and the Periodical Press, 1870–1890*, Bloomsbury, London-New York 2016.

As Michelle Henning has argued, photography has therefore always been unfettered rather than fixed²². The idea of the photograph as a timeless, immutable cast of reality was more ideological than actual. In practice, photographs circulated, deteriorated, were reprinted and remediated, always open to transformation. The medium was born not as a stable mould but as a shifting field of variations – fragile in material, mutable in circulation, endlessly adaptable in use.

Even as rhetoric of «drawing with light» and «mirrors with memory» cast photography as a mechanical mould, practices such as composite and combination printing, multiple exposures or chronophotography foregrounded its modulatory capacity, while complicating the possibility of making clear-cut distinctions between still and moving images²³. These techniques revealed photography as a medium of recombination, sequencing and transformation, less a mould than a set of parameters to be adjusted and recombined.

The modulatory logic only intensifies in contemporary practice. With burst shooting, images are generated as streams from which a «moment» can be chosen or synthesised. HDR and stacking techniques merge multiple exposures into one, modulating tonal range or depth of field. Light-field cameras record plenoptic data, enabling the user to refocus or change perspective after capture. Gigapixel panoramas and point clouds construct images from arrays of data stitched or rendered, undermining any singular indexical relation. And with AI-based generative imaging, photographs can emerge from statistical distributions without any external referent at all – modulation in its purest form.

Even before the click of the shutter, photography is saturated with modulation. The photographic plate or film must be chemically prepared; emulsions tuned for grain, sensitivity and tonal range. In digital photography, sensors are calibrated for spectral response, noise reduction and pixel sensitivity. Aperture, shutter speed and ISO do not simply «record» reality: they modulate how light interacts with the medium, each parameter adjusting exposure within a range of possibilities. But these technical calibrations are always entangled with cultural and political parameters: conventions of portraiture, expectations of visibility, regimes of surveillance or aesthetic codes that shape what counts as a «good» photograph. Even before the shutter is pressed, the photograph is modulated by environmental conditions – light, weather, atmosphere – and by human choices and norms.

These operations show that photography never begins with an inert substrate awaiting an external form. Light-sensitive crystals, silicon circuits, lens glass and software algorithms are all already active participants in the photographic process. They condition what can be captured and how. To take a photograph is not to impress form onto matter but to modulate a field of parameters into a stable crystallisation.

The moment of exposure itself, so often imagined as the decisive instant, is in fact a modulatory process. Light does not stamp the sensor in a singular act but accumulates across the duration of exposure. A one-second exposure, for example, integrates variations of light and movement into a cumulative modulation. Even the shortest shutter speeds rely on the continuous flux of photons interacting with a photosensitive surface. But here too political and infrastructural contexts intrude: the supply chains that determine which sensors are manufactured, the standards that govern colour balance or compression formats, the software defaults that steer exposure. Capture is never simply natural or mechanical; it is modulated by human infrastructures and cultural assumptions about legibility, skin tone, evidence or beauty.

²² M. Henning, *Photography. The Unfettered Image*, Routledge, London-New York 2018.

²³ B. Turquety, *Photography and the Composite Image, or A Portrait of Méliès as Bergsonian Filmmaker*, in M. Lefebvre, M. Furstenau (ed. by) *Special Effects on the Screen. Faking the View from Méliès to Motion Capture*, Amsterdam University Press, Amsterdam 2022, pp. 245-270.

Modulation continues after exposure. In analogue photography, the negative must be developed in chemical baths, each step adjustable by time, temperature and agitation. Dodging, burning and retouching are all modulatory practices, tuning the final image within a range. In digital photography, the RAW file is itself a parametric field: brightness, contrast, colour balance and noise reduction can all be tuned after capture. The file does not contain a fixed image but a space of potential variations. Yet these transformations also take place within economies of distribution and politics of representation: which images are circulated, preserved or suppressed; how media industries edit and format photographs for publication; how archives catalogue and store them; how platforms algorithmically filter them. Every photograph persists as a site of modulation not only technically but socially and environmentally, open to alteration long after the shutter is pressed.

Thus the «image» is never a singular object but a multiplicity of possible crystallisations. What counts as «the same photograph» is determined not by an essence but by a tolerance of variation: brighter or darker, cropped differently, filtered in one style or another. Modulation reveals that the photograph is not a moulded imprint but a neighbourhood of parametric possibilities.

From Talbot's fading plates to AI's synthetic realism, the photographic image emerges less as a fixed mould than as a chain of modulations. It is an outcome of adjustments before, during and after capture, each stage introducing variability from technical, human, cultural and political sources. Photography thus appears not as the one-to-one imprint of the world but as a processual negotiation, a becoming-image constantly recalibrated across time, material, environment and apparatus.

Seen in this light, the moulding paradigm and the modulatory paradigm are not successive stages of photographic history but coexisting tendencies. Every photograph is moulded in the sense of registering a moment, but it is also modulated through technical parameters, material processes and cultural negotiations. In practice, the two modes are never fully separable: the moulding ideal of the decisive instant presupposes layers of modulation, while the most radical modulatory experiment still produces an image that may be received as a mould of reality.

THE VARIABLE CONDITION OF PHOTOGRAPHY

Throughout the history of photography, commentators have distinguished between two basic modes of practice. On one side stands photography that is straight, mechanical, unmanipulated, documentary, faithful – the image as a neutral witness, an imprint of the world. On the other stands photography that is manipulated, doctored, experimental, artificial – the image as artifice, diversion or effect. These oppositions have been repeated under many names: truth versus fiction, documentary versus pictorial, naturalistic versus formalist, reportage versus staging, immediacy versus mediation. Always, they divide photography within itself, assigning one pole the status of the «normal» and the other of the «abnormal».

Roland Barthes's structuralist distinction between the denotative «message without a code» and the connotative layer of culture and ideology reproduces the same logic. What it overlooks are the technical and material processes – the calibrations, exposures and adjustments – through which the so-called «uncoded» layer comes into being at all.

These oppositions, I have argued, are not inherent to photography but rather the result of applying the hylomorphic schema to it: the ancient assumption that form is imposed upon passive matter. When we think photography through this schema, we are forced to divide it into fixed categories – true or

false, documentary or constructed, objective or manipulated – because we imagine images as already-formed moulds. But if we shift the perspective to modulation, these distinctions dissolve. Both «straight» and «artificial» photography emerge as different ways of calibrating and adjusting – technically, culturally, perceptually – within the field of the photographic process.

To modulate is to vary parameters within a range, to tune intensities and relations. Every photograph – whether analogue or digital, documentary or experimental – depends on such modulation: of light, sensitivity, exposure, contrast, code or meaning. Even at the level of discourse, critical and popular frameworks modulate how photographs signify and circulate. Modulation thus names not a specific technique but the condition of photography's becoming: the continuous adjustment through which images take form, function and meaning.

Computational and synthetic photography make this condition newly visible. The photograph today is a statistical event, generated through the averaging, interpolation and prediction of multiple data points. Images are no longer single captures but probabilistic outcomes of continuous computation. Yet these operations are not ruptures from the history of photography – they reveal what photography has always been: a modulatory process that momentarily stabilises into an image.

Andreas Müller-Pohle's work makes this condition tangible. In *Digital Scores (after Nicéphore Niépce)* (1995-1998), he translated Niépce's *View from the Window at Le Gras* (1826-1827) – the earliest surviving photograph made with a camera – into sequences of digital code, converting tonal values into numerical data. The gesture is not a homage that leaves Niépce's image intact but a re-reading of it through the language of computation. What was once a singular chemical impression becomes a field of relational values, a set of instructions open to further interpretation. Nearly three decades later, in *Niépce Recoded* (2024)²⁴, Müller-Pohle returned to this material, feeding his own digital scores into generative-AI systems to produce new visual versions of Niépce's window view. Each iteration departs from the original while still referencing it, treating the first photograph not as a fixed origin but as an ongoing question: what does it mean for an image to «capture» reality when its conditions of visibility and reproduction keep shifting?

Through these transformations, Müller-Pohle invites us to see Niépce's photograph anew – not as the stable birth of photography but as an open process of reinterpretation. His projects expose the first photograph as already entangled in translation, recalibration and technological re-articulation. The work does not simply reproduce Niépce's view but rethinks it through the successive media that followed: chemistry, code and algorithm. In doing so, it shows that to engage with the origins of photography today is to recognise that the image itself has never stopped being re-defined, continuously re-tuned by the operations that bring it into being.

Seen from the standpoint of modulation, photography is neither documentary nor fictional, neither analogue nor digital, neither real nor synthetic. It is the variable interplay of parameters through which images take shape and meaning. What we call «photography» is itself an ongoing modulation – technical, cultural and conceptual – whose adjustments continue to define what an image can be.

²⁴ A. Müller-Pohle, *Niépce Recoded*, Equivalence, Berlin 2024.

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