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WHAT IS DIGITAL PHOTOGRAPHY?

In a period of intense theorization, which responded to the spreading of digital technologies in the late 1980s and early 1990s, many terms and neologisms were used to circumscribe appearing images, technologies, practices or concepts connected to technological developments. Those critical approaches address both purely technical issues and broader aspects, such as the philosophical, sociohistorical or epistemological questions those new images and technologies brought to light. Terminology used by critics or artists differs considerably, and initially generic tags – "digital photography" is one of the most commonly used terms – gradually acquired various connotations as a consequence of the numerous concepts and methodologies it referred to. One of the first exhibitions bearing these two terms in its title, *Digital Photography. Captured Images. Volatile Memory. New Montage*, took place at SF Camerawork in San Francisco in 1988. However, the exhibited works by Paul Berger, MANUAL, George Legrady and Esther Parada didn't look like conventional photographic imagery at all, but rather resembled photomontages, often containing typographical elements and visible pixilation.[68] As many terms and definitions can nowadays be considered outdated – those developments will be discussed in part 1 of this research – most of the terms used in this book will be only be used in their historiographical context. Often, they are linked to

68 On the history of early digital photography exhibitions, see Claus Gunti, "De la théorie à l'objet. Histoires de la photographie numérique au présent," *Transbordeur. Photographie, histoire, société*, No. 2, 2018.

a specific theoretical effort. "Post-photography," for example, a terminology endorsed by many critics in the 1990s that primarily aimed to express the state of photography after the alleged break provoked by the emergence of digital technologies, will thereafter only be used to reflect upon those theories and the imagery it came to be associated with: a certain type of retouched photography, for instance, that was mostly concerned with the representation of the human body and was repeatedly called "post-photography." As will also be discussed in part 1, the work of those artists – Nancy Burson, Aziz and Cucher or Keith Cottingham are among the most eminent and systematically mentioned figures of this "movement" – has been associated with the aforementioned theories by art historians and curators. The convergence between theory and practice will therefore be called post-photography, despite the fact that it reflects an intersecting field, including artistic, critical, curatorial and theoretical aspects, rather than a consequently established historical object, which has yet to be delineated. Until its recent re-emergence – Joan Fontcuberta uses it to address the impact of digital technologies in visual culture (e.g., *From Here On. Post-Photography in the Age of Internet and Mobile Phone*, RM/Arts Santa Mònica, Barcelona, 2013 or *The Post-Photographic Condition*, Le mois de la photographie de Montréal, 2015), and the Fotomuseum Winterthur has used the label since 2016 to address photography as "an algorithmic form, linked to data processing, the network, multiplatform presentation, and the merging of still and moving media"[69] – the term had virtually disappeared.

Most labels should accordingly be applied only in direct relationship to their historical origin. However, many will completely be disregarded here, since we aim only to sketch out historiographical tendencies, and not to produce an exhaustive account of the history of the used terminology and concepts they refer to. As our project aims to examine the digital as editing tool and its more complex uses, approaching numerous analytical levels, it seems nevertheless necessary to clearly define the deployed nomenclature and its implications. The specific vocabulary used will mostly be generic, expressing the commonly shared understanding of the word. The employed adjective "digital" will be primarily understood as "relating to or using signals or information represented by discrete values (digits) of a physical quantity, such as voltage or magnetic polarization, to represent arithmetic numbers or approximations to numbers from a continuum or logical expressions and variables."[70] It refers to the computing technologies it emanates from, mainly that of computers and electronic capturing and communication devices (cameras and phones). The choice of the used noun, though, cannot be unequivocally established and requires the determination of the particular aspect addressed. To denominate "photographic" images that appeared in that period, the most commonly used terms are "digital photography" and "digital imagery." If the

69 See the institution's P3 program on https://www.fotomuseum.ch/en/explore/p3/, accessed on October 10, 2017.

70 *New Oxford American Dictionary*, 2009.

claim that images taken by digital capture devices were not photographic anymore seems today obsolete today, it seems legitimate to argue that computer-generated images – Thomas Ruff's *Zycles* series, for example, are extruded from algorithms and are not the result of an image *capture* – are not strictly photographic in a technical sense, which requires a more nuanced definition.

The coalescence of *digital* and *photography*, since it presupposes constant parameters in either term, is also problematic. Thomas Ruff's *Zycles* series points out an important aspect of digital imaging technologies, which remains unclear and is often eluded in theoretical efforts addressing this issue: on a strict technical level, digital images can be digital in multiple ways. The digital can be a strictly technical feature, but it can also address structural aspects or processes (serial imagery, image multiplication or diffusion), it can be represented (visible specifications such as compression algorithms) or it can interact with imageries or regimes of vision, specific to digital communication systems (impact of the Internet on image consumption). To reflect upon this differentiation, we will thus address several categories, which are echoed in the structure of this book: in the period of emergence (1987 – 1998), the use of the digital is rather limited to the use of image post-production tools, while the period of generalization of digital aesthetics (1999 – 2015) features the widespread use of digital capture, post-production and more complex practices that address digital visual culture. However, if it seems important to address those differences, especially considering their historiographical impact and the role they might play in the definition of the analyzed practices, it has to be emphasized that this differentiation should not be over-evaluated. Our approach differs from preceding studies based on technological determinism in that it aims to subordinate technology and its implication to an epistemological system, analyzing an apparatus with its various declinations rather than extrapolating theoretical definitions based on solely technical features.

To nuance the terminology and clearly define – when needed – the images produced, retouched or created through digital imaging technologies, we have established a personal and somewhat arbitrary differentiation between "digital picture," "digital photograph" and "digital image," as well as between "digital imagery" and "digital photography." Critical and theoretical discourse reflecting on the appearance of computers and new media often has, as mentioned above, made use of one or either term without clearly defining it. "Digital photography," for example, has almost become synonymous with "post-photography," addressing a corpus where digital manipulations are patent. An inceptive nomenclature seems necessary to precisely systematize the terminological range of those terms, pointing specifically at the wanted values, connotations, features or mechanisms. As a ground rule, we will use "digital photography," with all the imprecision the denomination presupposes, as an equivalent to digital photographic practices and not as a theoretical equivalent to photography, as medium-based readings (e.g., semiology) have defined it. It addresses the photographic in all its multiplicity, considering technical, formal, contextual or

epistemological parameters. We do not aim to define digital photography, but only to investigate its uses and mechanisms. If, incidentally, the question of the photographic nature of some images is raised because of important differences in their technicality and artistic position – the role of Ruff's computed abstract images clearly raises questions – it is *not* our intent to interrogate or define photography as a medium or as a technology, but to circumscribe it as an apparatus.

The use of the generic "digital image," which is intentionally vague, allows us to address several layers of this phenomenon. The paramount intent of this particular lexis resides in its openness, allowing us to connect remote or unusual manifestations of new media to an image that is not, necessarily, technically digital without pointing to one or another specific digital feature. "Digital picture," which is terminologically more restricted, addresses the artefact – the technical image – as English provides an adequate term, in opposition to German or French, where *Bild* and *image* retain the polysemic signification of image.[71] The nomenclature implies an image captured with a digital camera and scanned, retouched or even generated, the only definitional character being the use of digital technologies to create or process it. "Digital photograph," also addressing the object, will be used to render the idea of an image that is the result of a digital capture device that is specifically designed to produce images (cameras, camera-phones), referring to the conventional definition of photography (light capture). As "photograph" relates to "photography," this definition seems to suggest that Ruff's generated abstract images are not photographic. But in our impregnation of the word – photography being a complex, heterogeneous concept involving photographs, but also institutional and discursive functions – "photography" only means to reflect one aspect of photographic practices. Ruff's *Zycles* would of course be photographic, but the images themselves wouldn't be photographs, in the technical sense; the dissociation between photograph and photography is strictly argumentative.

"Digital imagery" commonly denotes strictly aesthetical and visual features, thus displacing the sense of the term toward praxeological mechanisms. It usually implies the perception of what *seems* digital, but again *seeming* digital is rather connected with the manipulation or retouching of the depicted *reality* than with structural features of the image, such as compression algorithms (e.g., .jpeg), retouching tool effects (e.g., Photoshop's stamp tool[72]), image redundancy and circulation (the fact that images are recycled by numerous agents) or

71 See the introduction of Hans Belting (ed.), *Bilderfragen. Die Bildwissenschaft im Aufbruch*, Munich, Wilhelm Fink Verlag, 2007.

72 Adobe Photoshop's stamp tool is a function of the image editing software that allows users to clone entire parts or patterns of a digital image. A now-famous example of the use of this feature in mainstream media took place during the Israeli-Lebanese war in 2006. A photographer working for Reuters retouched an image, which was published on the news agency's website. He added smoke above the bombed city of Beirut by cloning existing smoke clouds and darkening them to artificially increase the pathos and theatricality of the photograph. The gross and easily identifiable manipulation was noticed and Reuters then posted the "original" image, while condemning all kinds of retouching of photojournalistic pictures. See for example André Gunthert, "Sans retouche. Histoire d'un mythe photographique," *Etudes photographiques*, No. 22, September 2008.

meta-tagging (e.g., data added to images such as geo-localization). Andreas Gursky's *Pyongyang* series, for example, despite the fact that the retouching is not obvious and that the images remain illusionistic to a certain extent, bears a repetitive pattern: the gymnasts are endlessly replicated, which clearly reflects digital post-production tools and thus addresses digital aesthetics (at least for a contemporary viewer), an argument which can be stated independently of their actual construction. The question as to what defines "imagery" – the perception of an image or its production, consequently frames its meaning. Considering the scope of our definition of "digital photograph," "digital image" and "digital picture" presupposes, it seems necessary to address visuality, but in an extended conception. The denomination – intentionally ill-defined at this point – derives from its connection to digital imaging technologies and communication systems, as much in their technicity (e.g., through apparent features of an image compression format) as through specificities in the regimes of vision of the contemporary viewer (e.g., recognition of widely circulating web images). Thomas Demand's pictures engaging with recent media images (e.g., Saddam Hussein's hideaway in *Kitchen*, 2004), the coverage of which has been largely disseminated across the Internet, can be seen in this sense as digital imagery despite their obvious analogous nature (photographed cardboard models).

The works of Düsseldorf photographers who engage with digital technologies further ought to be categorized through the use and application of these tools. As will be discussed henceforward, digital image production and post-production is defined by discrete interventions, which can be schematically broken down into five categories, even if they are in fact often overlapping in the final images: retouching, image stitching, composition, appropriation and rendering. Retouching reflects a very common procedure in the history of photography, which is thus not specifically connected to digital technologies. The subtractive process chiefly consists of erasing of picture elements, to improve picture composition or to manipulate semantic elements. Thomas Ruff's *Haus Nr. 1 I* (1987, Fig. 7), in which a signpost and a tree have been edited out, is the paradigmatic example of such interventions and is the first acknowledged example of digital retouching in the history of Düsseldorf photography.

Image-stitching is used to juxtapose several shots in order to create a single image, either for compositional or technical reasons. Andreas Gursky's illustrious *99 Cent* (1999) was created through the horizontal combination of two photographs, assembled together. *Paris, Montparnasse* (1993, Fig. 1), one of his earliest stitching works, combines two shots that are vertically sewn together in that case. Often realized "physically" in the 1980s by simply juxtaposing two or three prints in a light box (e.g., Jeff Wall's *The Bridge*, 1980) or on cardboard (e.g., Andreas Gursky's *La Défense*, 1987, Fig. 65), the process was replaced by digital technologies in the early 1990s. In Düsseldorf, that particular technique is chiefly used by Andreas Gursky, but recently, the very conservative Thomas Struth – who did not edit images digitally until the late 2000s – has begun to adopt the stitching technique in

some recent series. Composition, a predominantly additive technique, defines images constructed with numerous picture elements and photographs to build a composite image. Used chiefly by Andreas Gursky and Jörg Sasse, it appears increasingly throughout the 1990s with the improvement and mainstream diffusion of the required retouching tools. Gursky's *Hamm, Bergwerk Ost* (2008) background has been created with multiple shots, on which various fragments – such as cut-out elements – have been added. Technically, the image thus oscillates between strict photographic imagery and processes closer to painting or photomontage. Appropriation, the fourth process, which isn't directly connected to digital technologies either, considering its precedents in the history of photography (e.g., Hans-Peter Feldmann or the artists of the "Pictures Generation"), can be defined by the process of recycling pre-existing images, which have not been shot by the photographer most of the time. The most common occurrence of such procedure in Düsseldorf emerges in the late 1990s with Thomas Ruff's *nudes* and *jpeg* series. He downloads images from the Internet and edits them to put on display their digital origin, increasing the visibility of compression algorithms. The last category, rendering, addresses the transformation of a source implying computational mechanisms. The source can be a pre-existing image, which would then be transformed through a filter. Jörg Sasse used this process in his early compositions, in which common pixilation filters, similar to the "crystallize" filter found in Adobe Photoshop have been applied. The source can also be non-visual, as in Thomas Ruff's non-figurative *Zycles* series, where the images are extruded from an algorithm. In the context of digital technologies, the term rendering is derived from 3D modeling software, for example, to create virtual models for architecture. Basically, it reflects a calculated transformation of a source that is visual (e.g., an image) or mathematical (e.g., coordinates).

Ultimately, if these categories seemingly reflect primarily technical aspects of the apparatus, their relationship to what they depict and the discourse – which theorized their applications – also address epistemological implications. The shift from strictly depictive technologies (i.e., photographic capture) to generative processes (i.e., rendering) and the shift from depictive strategies addressing a physical reality (i.e., photographs of the real world) and reproductive approaches depicting pre-existing images (i.e., photographs of images) reflects an important alteration of the relationship between two notions, which is essential for the understanding of photography as a mechanical and reproductive medium. It also redefines the relationship between the observer and the "photograph:" the image as an autonomous representation and the image as a depiction, an articulation rendered in German by the pair Bild and Abbild. The importance of the object of representation itself – physical reality or pre-existing photograph – and the role of digital visual economies thus exceeds the strictly technological inscription of digital photography. These processual transformations and their implications will consequentially be established in detail through their historical genealogy in part 2 of this book.